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GARDENING

Illustrated.
For Town & Country.

A Weekly Journal for Amateurs and Gardeners.

FOUNDED BY W. ROBINSON,

*Author of "The English Flower Garden," "The Wild Garden," "Hardy Flowers," "Alpine Flowers," &c.
Founder of "The Garden" and "Farm and Home."*

"YOU SEE, SWEET MAID, WE MARRY
A GENTLE SCION TO THE WILDEST STOCK
AND MAKE CONCEIVE A BARK OF RASHER KIND
BY BUD OF NOBLER RACE; CHANGE IT RATHER: BY
THE ART ITSELF IS SATURE."—*Shakespeare.*

"CALL THE VALES AND BID THEM HITHER COME
THEIR HILLS AND FLOWRETS OF A THOUSAND HERS."—*Milton.*

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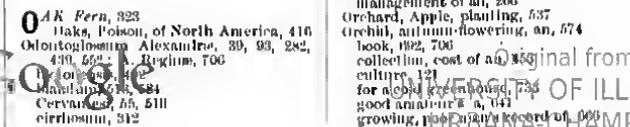
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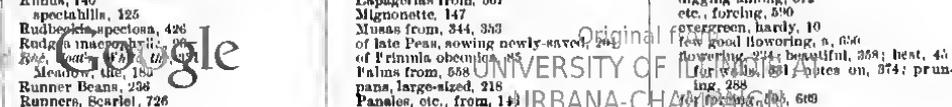
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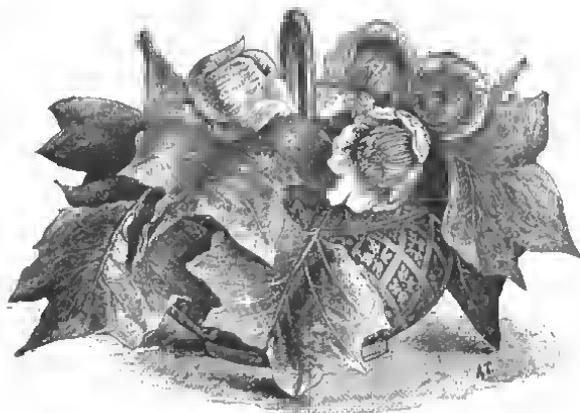
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GARDENING

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THE PINK.

There are two prime features in a good Pink; one is its exquisite fragrance, and, unlike many of the Carnations — one might say most of them — which are generally devoid of fragrance or possess it only very faintly, the Pinks are all sweet-scented; it seems to be a condition of their nature. The other is the lacing on the petal margin in a well-developed flower so dense and regular. Given, then, a full bloom that is of full substance, pure in the ground, and regularly laced with some shade of purple and purple-crimson, or lilac through shades of red to crimson, and there is a flower worthy the acceptance of anyone. To have Pink blossoms of large size and finely laced, the plants should be grown in a well-prepared bed in the open, made up of

rich soil, and the plants placed in it in October. It is only plants which are thoroughly established that can be expected to have well-laced flowers. It is sometimes said of the Carnation that it is coddled and debilitated by being kept in cold frames through the winter, but this same cannot be said of the Pink, which is grown wholly in the open and thoroughly exposed to all weathers. The soil of most gardens will grow Pinks. If it is a good yellow loam, or a black one of good heart, so much the better. If this be dug in September, and road or river sand, the former from a gravelled road, the latter from a shallow, fast-running stream, and well-rotted manure be freely added, then there is a good bed for Pinks.

ROAD-SCRAPINGS with horse-droppings make good ingredients for a Pink bed, and the root-fibres run freely in it. It is not too late to plant such a bed, but the best plants for placing in a bed in January or February are those which have been wintered in pots, because they are certain to have rooted well, and they can be placed in the ground without disturbing the ball of roots very much. Plants lifted from the open ground at midwinter or in early spring are apt to lose the soil about the roots, and then a decided check occurs. I have known orders to come to a nurseryman for Pinks so late as April. When they have got into active growth it is practically impossible such plants can bloom well, because they are checked in their progress late in the season. A few good laced Pinks are to be found in Clara, the laced reddish-purple, a flower with stout and finely-rounded petals. Rosy Gem has a paler lacing, very broad, and the blossoms sweetly fragrant. Henry Hooper has a rich dark lacing, a flower of large size, full, and very handsome.

One of the best is Boiard, a favourite flower with all growers, a good grower, laces well, and very full and fine. Modesty is remarkable for its pale pinkish-lilac lacing, sometimes deepening to bright rosy-purple; it is very early and free, and makes a charming border variety. Another excellent border variety is found in Mrs. Walte, small, very pretty, and free. Beauty is another small-flowered variety, but very free to cut from. A very fine Pink is found in Empress of India; it is very distinct, fine in colour, the lacing rich and deep. The Rector, very fine; Minerva, Jessica, Eurydice, Device, George White, Excelsior, very fine, are also good laced varieties, and it is worthy of remark that some of the before-mentioned have been in cultivation thirty and forty years. Some persons might be led to think the laced Pinks are all alike, but there is more difference between them than is usually fancied, and cultivators who become acquainted with their peculiarities by growing them are able to detect marked differences between the varieties. Three

NEW VARIETIES of laced Pinks (raised by Mr. James Thurston, of Cardiff), were last year distributed from Manchester. They are James Thurston, John Dorrington, and George Hodgkinson, all remarkable for the purity of the ground colour, fine quality of petal, and refined lacing. James Thurston is, in my opinion, the finest laced Pink ever raised, a flower of the highest quality, the other two being also remarkably good. Of fine old border Pinks of various colours, mention may be made of Anne Boleyn, very good indeed, and always in great demand; Rabens, pink, with dark centre; Ascot, pink, with crimson centre; Mrs. Sinkins, white, grown very largely for cutting from; Clifton White, an improvement upon Mrs. Sinkins; and Lord Lyon, a flower of very fine shape, pinkish lilac with dark centre. Of newer border varieties, there are Her Majesty white; Charmor, pink, with dark centre; Beauty of Sals, pale pink, fimbriated, very good; Norah, bluish, with rosy-purple centre; Flirt, pale-pink, with rosy-purple lacing; Charles Lockyer, pink, with deep rosy-purple lacing; Beauty, white, with slight rosy purple lacing; and Fimbriata, soft pink, the petal edges deeply fimbriated. Pinks are

PROPAGATED by means of pipings, which are cuttings of the young shoots from the base of the plant, and layering the same as Carnations, which is a practice much followed in the midland districts. The quickest way to strike them is



to put them in pots of light, sandy soil firmly pressed about the cuttings; place them in a gentle bottom-heat with bell-glasses over them. Or they can be put into sandy soil in the border where there is a little shade, in little clumps, with bell-glasses over them, and they will root, though not so quickly as when the pots are plunged in bottom-heat. The earlier in the summer the pipings can be struck, so much the stronger are the plants for placing in the open ground in the autumn. It is customary to raise a Pink bed 6 inches or 8 inches above the ground-level. This is done that the heavy autumn and winter rains may drain away from the roots of the plants, as, though the Pink is perfectly hardy, stagnant moisture at the roots is found to be very injurious to it. R.

GARDEN WORK.

Conservatory.

Shake out and repot *Tuberous Begonias*; pretty well all will be on the move now. They succeed well in a warm greenhouse at this season. If those plants intended for beds are kept cool they will be stronger and better. Loan two-thirds, with one-third leaf-mould and some sand to keep the soil open, will be a suitable compost. If seeds are sown now in the hot-bed they will all bloom during the summer if sown on 11th June in heat. The winter-flowering Heaths that were shortened back after flowering will now have broken and may be repotted. Use the best peat obtainable, made porous with clean sand, pot firmly, and water carefully till the roots get into the new compost. Many hard-wooded plants are ruined through having too much water after repotting. *Azaleas* which have completed flowering may be shortened back to put the plants into shape. These *Azaleas* planted in the borders will require rather hard pruning to keep within reasonable bounds. Put on young *Fuchsias* and other soft-wooded plants which are growing freely and require more root space. Now seeds of *Balsam*, *Chinese Primulas*, and a pinch of *Cineraria* seeds for early blooming. *Primula obconica*, in spite of its bad reputation, is a very useful subject for winter flowering in the cool or warm conservatory. Seedlings raised now will make useful flowering stuff in 2-inch pots by the autumn. As the forced bulbs go out of blossom move to a cool pit to complete and harden growth, when they may be planted out; they are not of much use for pot culture afterwards. Most plants will require more water now; the borders also where *Oleanders* are growing must not be overlooked. Liquid-manure will be useful to specimen *Roses*. *Tansy* and other *Marichal Niels* planted out in a warm house will now be full of blossoms and buds coming on rapidly; this beautiful *Rose* still holds the leading position among *Yellow Roses*. Liquid-manure will give size to the blossoms. Use *autumn or some ready on the first appearance of mildew*. In ventilating avoid cold draughts. Insects must be dealt with promptly, either by fumigation or soap and water or Tobacco-powder; the last named I find very useful where only a plant or two is infested. The *springer* may in some cases be used on fine mornings. Lily of the Valley will come on now without very strong heat, and the flower-spikes will last longer. *Azaleas*, both the Indian and Japanese species, are now a special feature, and will require liberal supplies of water. *Suites japonica* may, with advantage, be forced in cases half filled with weak liquid-manure. It is too soon yet to commence sowing to any great extent; but *Azalea* in bloom will last longer if a temporary shade can be placed over them for a few hours on very bright days. Cuttings of young shoots of *Abutilons* will strike now in heat. Repot *Orange-trees* if they require a shift or the soil renewed. Keep *Kalassans* in a light position near the glass to ripen growth.

Unheated Greenhouse.

This house may now be gay with hardy bulbs and other early-flowering hardy plants. *Dialytra speciosa*, *Lily of the Valley*, *Solomon's Seal*, *Spiraea* of sorts, early-flowering *Rhododendrons*, *Kalmias*, *Betula*, *Asplenium*, and the hybrid forms which have been obtained from it, will flower early in a cold house; they are quite hardy, and, being so early to bloom, will be valuable. *Bambusa* in variety, if the house is large enough, will form a pleasant feature under the shelter of a glass roof; they will be more effective than most of them are in the open air, unless the position is warm and sheltered. *Aurucias* and other members of the *Primrose* family are indispensable for the cold house; they are perhaps better adapted for a small house than a large one, although always and everywhere they are very interesting. A little top dressing will help this family now.

Stove.

Cuttings of ornamental-leaved *Begonias* will strike now quickly. Plants may be raised from leaves only; but good cuttings are better, as plants are more speedily formed. The early-started *Gloxinias* will now be in blossom. I find seedlings more manageable in this respect than plants raised from cuttings; they have more vigour. Seeds may be sown now, and, if well attended to and kept growing, the strongest will flower in autumn. *Streptocarpus* hybrids and the *Sultan Balsam* (*impatiens Sultan*) may be sown now in sandy peat. Prune specimen plants of *Vicia's* roses and *oculata*, and repot as soon as the plants get fairly into growth. Cuttings of the young shoots will root quickly and form useful little flowering plants during the summer; these plants will not flower well if under-potted. Plenty of moisture in the atmosphere is also essential. Get in cuttings of *Poliochilus* as soon as the young shoots are from 2 inches to 3 inches long. *Torenia aedica* and *Fountain* may either be raised from seeds or cuttings; cuttings are best if young, soil shoots can be had. Get in a good stock of all the usual winter-flowering stuff, such as *Pentaea carnea* and *rosea*, *Seriographis*,

Thyracanthus, *Plumbago rosea*, *Justicia*, *Eranthemum*, &c. Sow seeds of *Viola humbilis*, a very pretty berry-bearing plant, useful for table and room decoration in winter. In very bright weather certain plants will require shade, and more water must be given to the plants and used about the floors to saturate the atmosphere. Night temperatures need not exceed 65 degs. Avoid cold draughts in ventilation; the time for keen, cold winds and brighter skies is near. Start *Abutilons* and encourage *Genesee* to continue resting for the present; for that reason I prefer to keep these bulbs dry and cool for another month.

Bedding Plants.

Where many of these are required an sowing time lies before us. Cuttings of all soft-wooded plants will strike now in heat, either in the hot-bed or from fire-heat. I have struck many thousands of bedding plants in the hot-bed. When I did a good deal of carpet bedding all the tender things were struck in slight hot-beds during the months of March and April. The usual plan was to make up a hot-bed the heat of which would last about a month, cover it with light sandy soil, and, as soon as the heat had worked through and staidied a bit, dibble it full of *Alternanthera*, *Coleus*, &c., leaving each cutting space enough to grow into a decent sized plant. In the course of two or three weeks the plants will have rooted, and may then be topped, and a second series of cuttings dibbled into another hot-bed. In this way many thousands of plants may be worked up from a small stock.

Cold Frames.

Calceolarias will do very well here now, and the frames will also be in useful for moving plants to from the conservatory, and, if well covered at nights, surplus plants from the greenhouse may be moved out to the frames to give more space to this rapidly-growing *Geraniums* and other things.

Window Gardening.

Window-boxes are now gay with bells. *Crocuses*, *Daffodils*, *Blue Squills*, and *Snowdrops* are charming now outside some windows. Inside also there is no lack of bloom — *Cinerarias*, *Primulas*, *Cyclamen*, *Azaleas*, *Genietas*. Pots of *Trumpet Daffodils* and *Jonquills* are pleasant to look upon. *Hyalanth* and *Dutch bulbs* generally are flowering well this season. More water will be required now, though, if a little green Moss is placed on the top of the pots, less water will be needed, and the appearance of the bulbs will be improved. Keep down green-fies with the sponge and soapy water.

Outdoor Garden.

The ground is in good order now for tree and shrub planting, and deciduous things especially should be got in. The planting of evergreens may be done any time up to the end of April or even later. It is a good many years since I was at the end of May, but they are not from a good nursery where the plants are frequently transplanted, and it is this frequent transplanting in the nursery which makes their removal safe at almost any season a matter of certainty. All ground intended to be planted this season with trees and shrubs should have been trenched and got into good condition. The plots do so much better where the ground has been well prepared. *Rock* or *alpine* plants may be divided and replanted now, new soil of suitable character being added where necessary. In fact, it is always advisable to work in fresh soil in replanting most things of this kind. Fix every plant firmly in the ground; when loosely planted they dry up and perish. Many *Carrots* and other plants die annually through not being pressed down after root. *Carrots* require to be very firmly fixed in the soil if they are to do well. *Herbaceous* plants of all kinds may be planted now. Choose things which have been plunged in frames may be set out. Of course, before doing this, a system of full exposure should have been followed for some time previously. Prune *olmbars* or get early *Blossoms*. Mince over the roots of newly planted *Roses* and shrubs; it increases the chances of healthy and vigorous growth. Let everything be staked in windy places.

Fruit Garden.

Peaches in the early house will now be set, and as soon as one can see which fruits are taking the lead in the swelling the smaller should be removed. It is so important nowadays to have large *Peaches* that everything possible should be done to give size and colour. For the same reason, disbudding should be promptly and early done, and with a fearless hand. The dangers of leaving too many fruits and the young shoots too crowded are so great that I would rather err in the opposite direction if an error is committed at all. See that all inside *Peach* borders are perfectly moist. Outside borders are sure to be moist enough now. Vigorous young *Vines* will break strongly, and the shoots should not be permitted to run into each other before stopping and tying down. Two leaves beyond the bunch should be left if possible, and the tying down should be done by degrees. As buds on fruit-trees outside are on the move, Get *Peaches* pruned and trained without delay. In pruning, take out any old branch wherever there are well-placed young shoots to fill. *Peach-trees* which have been troubled with black-fly should be washed with *Cluhsat* compound or some other suitable mixture; soft-soap or Tobacco-liquid will do as well. A soft brush or bit of sponge drawn the same way as the buds point will be convenient and safe. On the whole, judging from the appearance of the trees, there seems to be a fair prospect of bloom. *Pears* on the *Quince* when the land is fairly bearing are looking promising, but the *Quince-stock* is not adapted for light, sandy, or calcareous soils. Cuttings of hush fruit may be planted, and *Raspberries* shortened and mulched. *Raspberries* may be very well grown without stakes if cut down to 3 feet.

Vegetable Garden.

Where the *Carrot-fly* has been troublesome in previous years give the ground a good dressing of salt and lime; paraffin-oil has been a very useful remedy mixed with water and the ground moistened with it a week or two before sowing the seeds. I have used a quart of oil to 16 gallons of water. This remedy is cheap enough, and the millions of *Globe Artichokes* are required, the ground should be well manured and got into good condition ready

for planting the end of the month or beginning of April. Plant in rows 4 feet apart each way. Good strong sets are better than small offsets as regards immediate results. Sow *Asparagus* seeds to raise early plants, and plant out the *Seakale* cuttings which were cut from the crowns taken up for forcing; they may be planted with the dibble in rows 15 inches apart and 1 foot apart in the rows. Prepare ground for planting with *Asparagus*. As soon as the young ground starts away, *Lettuce* plants or other vegetables raised in heat, to be hardened off and pricked out in the border or outside rows along the foot of a south wall, will grow rapidly. Keep the *Mushroom* houses steadily at a temperature of 55 degs.; if *Cucumbers* are wanted quick 70 degs. will be best, but I am not in favour of high temperatures when fire-heat is to do the work. On sunny days I would let the thermometer run up to 95 degs. or 100 degs. with plenty of moisture in the atmosphere. Planting out *Cauliflowers* in trenches. We have no lights for them, but the plants are sheltered with borders. There is a good deal of protection in the leather spray of the branches of *Hazel* usually cut for *Pest-sticks*. Sow main crop of *Celery* on a gentle hot-bed. E. HOBDAV.

Work in the Town Garden.

Lose no time in sowing seeds of *Petunias*, *Verbenas*, *Lobelias*, *Mimulus*, and other greenhouse and half-hardy bedding plants. The *Nicotianae* or *Tobacco-plants* grow very fast and strong in rich soil, even in the smokiest places, and even the ordinary kinds (*N. Tatumana* var.) are valuable as affording plenty of fine foliage, if not much else, while the deliciously fragrant *N. alba* is also an excellent town plant, and one that everyone should grow, both indoors and out. Sow now and treat the same as *Petunias*, and the plants will be in full bloom in July and August. A few *Balsams* may also be sown either large plants or early flowers are wanted. These are capital town plants and very easily managed, the chief points in their culture being rich, mellow soil and plenty of light and moisture both at the root and overhead. *Tuberous Begonias* and *Gloxinias* also sown at once in a moderate heat will still bloom before the autumn if kept moving on briskly. These are often recommended to be sown in January or February, and in country places this is right enough; but even if one gets them up so early in the atmosphere of a large town, before they are fully started, it is not likely to impart substance to the growth, the plants are weakly from the first, and even if they do pull round afterwards are little, if any, more forward than those not sown until the end of February or early part of March. Seed of the new *Streptocarpus* hybrids sown now will also produce flowering plants by the month of August. Seed of this plant is very minute—about the smallest I know of, to last—and therefore requires to be sown on a very fine and even surface, and the greatest care must be bestowed on the young plants during the early stages of their growth. A few *Tomatoes* may be sown in the town garden, if so much *Tomatoes* ought to be sown at once. These, again, I have often sown in January and February, in different suburbs of London, but nearly always had the seedlings go off in cold, foggy weather afterwards; whereas, if left until about the present time, they would grow right away from the first, and beat the others hollow. *Pisces* roots of *Dahlias*, from which cuttings are required, in heat, with a little light soil round them, keeping them in a moderate temperature, will be in full bloom by the month of August. *Double Petunias*, *Heliotropes*, *Marguerites*, and others in a gentle hot-bed, and pot them off singly when rooted; *Begonia tuberosa* for bedding, and very small roots should be dibbled out in boxes of light sandy soil to start, but choice kinds had better be potted singly. B. O. R.

THE COMING WEEK'S WORK.

Extracts from a garden diary from March 4th to March 11th.

Removed *Strawberries* just beginning to colour from the hot-house to a cooler house, where more air is given. This will improve the flavour and tend to solidify the texture of the fruit, and they will travel better. Introduced more *Strawberries* into heat to come on in succession. With me there must be no break in the supply, and to accomplish this regular fortnightly introductions will be necessary. Looked over planting and other protecting covers that will shortly be needed, and under such conditions there are no blossoms open, though some of the *Rhodos* on the south wall are just showing colour. Finished training *Peaches* and *Nectarines*. Removed coverings from *Figs* on walls; they will be safe now from frost; though, in the unexpected event of a very sharp night coming, mats would be hung in front of the trees. At present the wood is clean and bright; the pruning will not be done till the end of the month. Beyond a few early *Roses* on the south border, no pruning has yet been done, and, as the growth is later than usual, shall not prune the collection until the end of the month. — Tea a few later, but I should state that some of the longest shoots were shortened a little in the autumn to ease the wind pressure. Disbudded *Peaches* under glass. Watered inside borders. Stopped and tied down *Vines*. Finished thinning *Grapes* in early house; shall go over them again later on and remove small berries, and possibly take a berry or two out where there are any signs of crowding. Planted *Tomatoes* under glass; the plants are strong and showing blossoms. A temperature of 55 degs. to 60 degs. at night will be kept up, and under such conditions the plants will grow fast and set well. Ventilate plants as they are given when the weather is suitable, but I object to cold currents, as being likely to bring on disease. The plants are never syringed but water will be given when required, and it is to this dry, buoyant atmosphere I attribute the absence of disease. Top-dressed *Cucumbers* with turfy loam enriched with a little old manure. Shifted *Melons* into larger pots to grow on until house is ready. Sowed *Chinese Primulas* for early blooming; a later sowing will be made for spring blooming. Gave *Cinerarias* the mid-morning tea. — Tea a few plants in rather smaller pots, and to obtain good heads of bloom they must have extra support. Planted more *French Beans* in pots, also prepared a pit for sowing it with fermenting material for bottom-heat. They will be planted with *French Beans* as soon as ready.

* In cold or northern districts the operation referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.

Sowed tender annuals of various kinds, including Victoria glorioza, Phlox Drummondii, East Lothian Stocks, Victoria Asters for early planting, Zinnias, &c. It is not difficult to make beds in gardens very bright by seedlings alone. Stirred the surface among Pansies, Carnations, and other plants. It would be an advantage, if time permitted, to stir the surface soil every week or ten days, doing the work, of course, when the soil is dry. Such treatment effectually keeps down weeds and increases the vigour of the plants in the beds. Plant more Peas and Beans, Potatoes, &c. Sowed more Horn Carrots, and Radishes, and a few rows of Egyptian Turnip-rooted Beet. Some few of the plants may perhaps bolt, but the other roots will come in useful.

OUTDOOR PLANTS.

3112.—Hardy perennials from seed.—A great quantity of hardy plants may be simply and easily raised from seed, but not many of them will bloom to any extent during the same season. To obtain blooms for this year it would be wiser to rely upon the better hardy and half-hardy annuals, and meanwhile pay attention to securing a good stock of the best perennials ready for planting in their permanent positions next autumn as soon as the annuals have done blooming. The following are some of the fine families of which plants may be raised from seed with no more trouble and cost than is

bloom for cutting you must make up a permanent bed, planting the crowns at a distance of about 3 inches apart, and give the surface a dressing of well-decayed manure. Give ample supplies of water, and a mulch of manure each year will prove beneficial. Such a bed should give good flowers for years, and will not need to be disturbed until the crowns get so crowded that vigorous growth is impossible. If you rear them merely for the garden the chief requisites are moisture and shade.—C. T.

3188.—Culture of Pinks.—These like a good medium loam, and are easily grown; but this is not the season of the year to plant them. Probably they could be obtained in pots now from some florist who makes a speciality of them, and if planted in soil deeply dug and enriched with decayed farmyard-manure, they would flower this year, but the flowers would be of poor quality, and they would be badly laced, or perhaps the lacing would be gone altogether. To obtain good results the bed should be prepared early in the autumn, and the plants should be set out where they are to flower in September or October. This planting out should be done as soon as good, strong plants can be obtained. It is a great point to get

white and other Lilies. These might be arranged in groups, and the soil for each group could be specially fitted for them. Before anyone should decide how to lay out a small garden a decision should be come to as to what the soil will grow best, and the tastes of the proprietor. There is no pleasanter way of laying out a small garden of the size indicated than to run a winding walk through it, with a few choice shrubs at the back, or a fruit tree or two, and the flowers grouped around them. The shrubs and trees need not form a continuous line, but one placed here and there, leaving openings between for groups of such plants as Hollyhocks, Delphiniums, standard Roses, &c.; nearer the walk would come the dwarfier things—Carnations, Tea Roses, Pinks, &c.; in the centre or in some of the recesses between the shrubs and trees would be spaces for Cactus Dahlias, White and other Lilies, Phloxes, German Iris, &c.; in the shady spots would be places for Ferns, Primroses, and, of course, positions would be found for Aconites, Snowdrops, Daffodils, and other bulbs. There is scope for a good deal of thought in the laying out of a small piece of ground if the best is to be made of it.—E. H.

— If I knew what kind of fence surrounds your garden I could help you much better than I can in the absence of such information. I should say a walk 3 feet wide down the centre would be all the walks you require. In that case a bush Apple-tree may be planted on each side at the farthest end—say 8 feet inside your boundary—and 6 feet from the edge of the walk on each side. The best sorts of Apples for your purpose are Echlinville Seedling (early), and Lane's Prince Albert (late). A few Gooseberry and Currant-bushes may also be planted near to the Apple-trees. Next to these a line or two of Raspberries, and then a bed of Strawberries about 6 feet wide on each side. The remaining space you may fill up with a row of Scarlet Runners, Vegetable Marrows, and a few early Potatoes, and such other vegetables as you require. If you devote any part of the ground to flowers, they will, of course, be near the house.—J. C. C.

3151.—Garden-path.—I should say the best thing to do would be to get the ground out 12 inches or 18 inches, and put some rough ashes (hard burnt) in the bottom and the finer ashes on the top. This would make a good path.—T. J.

3130.—Tiles for garden borders.—Why not substitute as an edging some pretty plant, such as the Mossy Saxifrage, Thrift, London Pride, Primroses, Polygonum, &c., a few of which have been mentioned in recent numbers? They are much more interesting than hard tiles, never beautiful at the best. The Thrift makes a charming edging, and is smothered with bloom at the time of flowering. Put in good tufts at once, and if they do not meet the first season, they will next year, making a soft, felt-like edging. Auriculas are very pleasing in the spring, and if you do not care for such things as these, make an edging of Grass or some strong-growing Ivy, as the Irish. I should much prefer a pleasing tufted plant or creeper than the earthenware tiles.—C. T.

3185.—Forget-me-nots.—The variety you have seen is probably *Myosotis dissitiflora*. The cultivation is very simple. Let one plant scatter its seed, and in the following spring you will be able to take up and plant where you require them hundreds of strong young plants. The trouble with *Myosotis* is not to multiply, but how to keep it within bounds.—A. G. BURTON.

— The best blue Forget-me-not is *dissitiflora*, though this sometimes comes with a tinge of red in the flower. It is very neat and compact in habit, and flowers freely. There is also a white variety. *Robusta grandiflora* is also a good kind to grow. *Palustris*, the Marsh Forget-me-not, is a good variety for a shady border. I think anyone possessing these varieties will not require others. All the plants may be raised from seeds sown in a shady border in June. *Dissitiflora* is sometimes increased by division, as the seeds are dearer than the other varieties.—E. H.

— *Dissitiflora* is the best variety to grow where compact plants with plenty of deep blue flowers are required. A packet of seed sown on a warm border at the end of May will give a quantity of plants that should flower really well the following year. When they are large enough to handle they should be pricked out into another bed to gain strength, as if they are allowed to remain in the seed-bed they are sure to be drawn up weakly, and, of course, unfit for good flowering. As early in October



A Primrose (*Primula vulgaris*) in the wild garden.

incurred in raising stocks of annual or tender things: Achilles, Alyssum, Anemone, Aquilegia, Armeria, Aster, Anubria, Campanula, Chelone, Coreopsis, Delphinium, Dianthus, Dracocephalum, Echinops, Erigeron, Eryngium, Gaillardia, Goum, Gypsophila, Helenium, Iris, Lathyrus, Linaria, Lupinus, Lychnis, (E)others, Papaver, Pentstemon, Phlox, Primroses (see illustration), Rudbeckia, Scabiosa, and Veronica. I had great success some years ago by sowing the seed of many of these direct into an open border, but it had fine, friable soil. I much prefer sowing outside in preference to pots and frames, seedlings being favourable, as, if care is exercised to sow thinly, the young plants grow away unchecked, encounter no vicissitudes, such as arise from neglect to attend to them—often accidental, it is true, when in pots—and they make much stronger growth in a given time. May and June are two good months for sowing seeds of perennials in the open air.—A. H.

3119.—Lily of the Valley.—Strong crowns planted now will produce flowers this season. A rich, partially shaded position is best for them. After planting mulch with old leaf-mould or very old manure.—E. H.

Your plants would not do great things this year. The best time to plant in the autumn, as early as possible after the foliage has died down, and this flower enjoys a moist, moderately shady spot. But if you require plenty of

them out in time to become established before bad weather sets in. The sorts I have found to be the best are *Attraction*, *Bertram*, *Boiardi*, *Clara*, *Now Criterion*, *Emerald*, *Godfray*, *Henry Hooper*, *Jessica*, *John Ball*, *Lady Craveu*, *Mrs. Waito*, *Empress of India*, *Reliance*, *Shirley Hibberd*, *William Paul*, *Eurydice*, *Modesty*, *Pandora*, and *Lottie*.—J. D. E.

3197.—A small garden.—There is plenty of room for a couple of Apple-trees in your garden, and if they are standards they might stand back a little in the corners if the garden is square. The walls or fence might also be covered with fruit-trees. Apples, Pears, Cherries, and Plums will grow very well on a close wood fence. As regards the garden generally, the question should be put—what do you want to grow and what are your own tastes? As a rule, in small gardens, not only the outline but the entrance and the paths are arranged beforehand by the builder's men. Where the entrance is in the centre the Apple-trees might stand one on each side, and, if tall, creepers may be trained up the stems. There would not be room for many vegetables in such a garden, though Herbs, Beetroot, Carrots, and Scarlet Runners may be grown, as they possess some decorative value. Among flowers there should be Roses, Carnations, Hollyhocks, Violas, old

as possible the plants should be put out into their permanent quarters, to enable them to make fresh roots before the autumn rains and cold weather come on. Although seedling plants come generally true from seed there are certain to be some few "rogues;" these should be marked and weeded out after flowering in past. The old plants, if dug carefully up after flowering, and laid in thickly on a border, make the best stock for another year with but little attention being required, if the strain is worth perpetuating. The first week in August pull the plants in pieces, dibbling every bit with a root attached to it in rows 8 inches apart, on any open piece of ground, shading them with boughs for a few days, if necessary, to prevent the leaves flagging much. By the time for planting out these slips will have grown into compact, bushy plants of a known strain of colour and form. There is more certainty about plants raised in this way than from seed, hence its advantage.—S. P.

3198.—**Sweet Peas.**—The seed saved last year from good varieties will produce good varieties again this year, but if there were a mixture of several varieties in the same row, pollen of one variety would be carried to another, and hence different varieties would be the result. Some of them might be better than the parents, others not quite so good. If one variety could be kept by itself, so that the pollen of a different sort could not reach it, there would be but little variation from the original. I have frequently saved seed from a row of mixed Sweet Peas, and had good variety and excellent sorts from it. As to the varieties being "reduced to a few indistinct ones," this is not likely to happen, although the stock would not be improved by indiscriminate saving of the seed.—J. D. E.

— There is no reason why the flowers should not be satisfactory next year. I have often saved my own seed, and got excellent results. Of course, you must not keep on growing them in the same place unless the soil is prepared.—C. T.

3199.—**Daffodils.**—It seems any plant to cut the flowers, Daffodils among others.—E. H.

— These plants would be likely to form better roots if the flowers are cut off as soon as they open. As long as they remain and are allowed to form seed-pods they take something out of the bulbs, and the longer the leaves remain green the better. When hot weather sets in the leaves soon take upon themselves the yellow hue of decay; to prevent this, water freely to encourage first the full development, and afterwards the ripening of the bulbs.—J. D. E.

— Undoubtedly the bulbs will do better if the flowers are cut when they are fully expanded; but in a suitable soil there will not be so much difference in their future behaviour as one might imagine. At the same time, if you find the bulbs getting weaker, cut off the flowers by all means. Seeing how the behaviour of Daffodils varies in different soils, I find they do better where the ground is fairly moist below.—J. C. C.

— Your Daffodils, if in proper health, may, of course, be left to flower, but if the bulbs are very weak remove the flower, so as to throw strength into the root. In the culture of the Daffodil, a good well-drained soil is of first importance, and the bulbs detest stagnant ground, this being the reason why growers always raise the beds a little from the level, so as to prevent wet remaining around the bulbs. Perhaps the Daffodils have got into poor condition through want of lifting. It is well to lift the bulbs when they appear to be exhausted and give them fresh soil. Take them up when the foliage has died down, and replant early in the autumn. The Poet's Narcissus should be planted first.—C. T.

3202.—**Culture of Christmas Roses.**—Helleborus niger is not a difficult plant to grow, and there are many beautiful varieties yet. The following are the finest, and may be selected without fear of getting two or three alike. Maximus, also called latifolius, is the finest, and a very popular form. The flowers are large, and of the purest white, except in exposed spots, when they are tinged with rose. Its foliage is very handsome, deep-green and leathery. The bulb variety, caucasicus, very free-blooming, the flowers white, touched with rose; angustifolius, white, with a suspicion of rose on the outer surface of the segments;

Mme. Fourcade, the flowers very large, of the purest white, and of great beauty. If you care for a number of varieties extend the list to W. Brockbank, the flowers broad and pure white; Riverton hybrid, and vernalis. The foliage of the Helleborus is very striking, and I hope you are not foolish to rub it off with the idea of benefiting the plants. If you want to kill them that is a good way to do so. As regards soil, much will depend upon the character of the garden. If you already have a deep rich soil you need not further prepare it, but if poor and sandy, add some good loam and manure. A stagnant situation is hurtful, but a cool, moist, partially shady spot agrees well with them, and in half-wild spots, by the margin of shrubberies, on the rocky, and in other spots likely to agree well with them, the plants will grow and flower well. Once planted they need not be disturbed for some years, as there are few plants that resent interference more at the roots than the Helleborus. There are two ways of propagating them, by division of the roots and by seed, but you will commence with good plants, which is by far the quickest and most satisfactory way of getting home-grown examples. In light soils give a mulch of well-decayed manure in the summer season if the weather is very dry, so this will help the plants to make a satisfactory growth. If you have a greenhouse put up a few plants, as they will bloom when flowers are welcome in the house, and under cover the flowers expand in fullest beauty, not being splashed with soil from heavy rains. A very good plan is to have a reserve bed, and put a handlight over the most promising clumps when the flower-buds appear. The flowers will then open fresh and unspoiled by the weather. In large gardens the clumps are lifted and placed in baskets. A gentle heat brings them on apace, and they produce a quantity of flowers for the table. Those potted up for the greenhouse must not be used the following year. Plant them back in the garden when frosts are over to prevent the leaves being destroyed, as they will be tender. If this is not done the plants will be considerably weakened.—C. T.

2212.—**Daffodils failing to bloom.**—Perhaps you have overdone them with manure. A very rich soil is not necessary to grow Daffodils well, but in an ordinary garden ground, well prepared and not wet, a fine growth results. If you have had the bulbs several years, as appears from your query, possibly they require lifting. It is wise to lift Narcissus once in every two years, but situations must be taken into account. The paucity of bloom may result from a poor soil, and therefore lift the bulbs when the foliage has died down. Choose a new site, or prepare the old one by digging in well-decayed manure. Plant again in early autumn.—C. T.

3196.—**Manure for a garden.**—You may use the pigeons' manure for the plants you mention, and in the way you propose, if you dig it into the ground or mix it up in the soil in which you are planting. You may also use the manure alone as a top-dressing if you water it each other day. It is, however, a powerful stimulant, and must be used with care, or you will get plenty of foliage and but few flowers. One quart of the manure will make 4 gallons of strong liquid, which may be given to plants just coming into bloom.—J. C. C.

3211.—**A wind-swept garden.**—It is usual to recommend the planting of some evergreen trees, such as Spruce Fir, for such a case as yours, but I do not think evergreens of any kind are suitable where the wind sweeps down with so much force as in this case. If it was my case I would plant two rows of English Elm-trees in the border, and as soon as they had reached the required height I would take off their tops. If the trees are planted 6 feet apart each way, and the outer row set in the openings of the other, they will quickly fill up the space and prove a perfect barrier to the wind. For the first few years the trees would not want any pruning; but after that the side branches will require cutting in, so as to form a hedge on an enlarged scale. There is no deciduous tree, not even the Lime, that submits better to this form of growth, and, at the same time, forms a good wind-resisting thicket. Within a short distance of where I write there is a farm premises provided in this way, and it answers admirably.—J. C. C.

ROSES.

3105.—**Pruning Roses.**—I should have been able to answer your query much more direct if you had given particulars of the locality and also the class of Roses you wish to prune. Therefore, I will endeavour to give a general reply, and one which I hope may be of service to many of my readers. The middle of March is quite soon enough for pruning the very earliest kinds of Roses, such as the Banksians, Austrian Briars, Chians, and Hybrid Bourbons, while the end of the month is an excellent time for the Hybrid Perpetuals, Teas, and Noisettes. I would not prune before the first week in April. The times here given are for plants growing in the south and south-western counties, and are also applicable to Ireland. In the midlands it will be well to defer the operation another week or ten days. Much also depends upon the seasons; but, during an average season, I think the above dates the best. Now a word as to the operation itself. If your plants are of extra vigorous growth, such as Marechal Niel, R6ve d'Or, or Gloire de Dijon among the Teas and Noisettes, or Gabrielle Luizet, Ulrich Brunner, &c., in the Hybrid Perpetuals, they will need very little pruning. Should the wood be crowded, you may commence by removing the weakest, and then shorten back the other wood made last summer to about three-fourths of their original length. Do not cut out away more than a third under any consideration. The Banksians, and, in fact, all these known as climbing Roses, need the same treatment. Average growers, like Marie Van Houtte and Anna Olivier among the Teas, or Alfred Colomb and Mrs. John Laing in the Hybrid Perpetuals, need cutting back about half their length. I am assuming you wish for a full crop of bloom, and not for a few of extra merit. If you wish for the latter, you must prune harder. Next we come to the weaker growers, like Souvenir d'Elise Vardon, Etienne, Levet, &c. These should be cut back to the most promising eye lying between 3 inches and 9 inches of the shoulder each growth breaks from. An excellent general rule is to cut the plants harder according to the weakest of their habit. All of the very strong growers flower best from the wood made the previous season, and, if such growth be removed too closely, you only get a further supply of the same wood, and which will not flower until the following season.—P. U.

3108.—**Rose W. A. Richardson.** If your plant is too high it will not be of very much service to cut it down, because it would only produce more growth, and soon reach the same dimensions again. Unless you can tie or fasten the shoots down in some way, and thus secure the blooms from the long growths that are now in your way, I would advise the removal of the plant entirely, and your placing another grower of less rampant habit in its stead. Madame Falcot, Safrano, or Madame Charles would all give you somewhat after the same colour, and would not grow so strongly. If his sort grows too strongly, you can do no good by cutting it down, because, as I have already remarked, the wood would only replace itself.—P. U.

3162.—**Fire-heat for Roses.**—Unless you want the Roses in flower early, you may dispense with fire-heat at night all the time the temperature of the house can be maintained at 50 degs. With regard to syringing Roses at this time of year, I may tell you that my first house of Marechal Niel Roses will be in flower before these lines are in the readers' hands, and I have not syringed them once; yet I have had no insects upon them, and, so far, no mildew. Yet the growth is perfectly healthy, and the flower-buds developing to a good size.—J. C. C.

— The Rose is quite a hardy shrub, and does not suffer from frost; and the temperature might fall to 25 degs. without any injurious effect. But, the roots being much exposed when the Roses are growing in flower-pots, they should not be exposed to a very low temperature. They will start to grow in a temperature of 45 degs., and when some growth has been made it will not do to allow the frost in after that, but the temperature might fall as low as 35 degs. without injuring the young growths. It is not necessary, in fact, at night be injurious—to syringe them at this time of the year if no

artificial heat is applied. When they are forced in a temperature of, say, 55 degs. at night they should be syringed daily; it helps to keep off aphid, which is a troublesome pest when Roses are forced.—J. D. E.

3143.—**Propagating Roses by cuttings.**—The question of fertilizing the prunings of Roses in the spring that would be otherwise wasted has exercised the minds of many cultivators besides "Dulwich," who sends this inquiry. And I regret I cannot give him any great hopes of success if the attempt is made of making the cuttings grow into plants. I do not, however, mean that the attempt will be altogether a failure if the operations are carried out with care, because a certain percentage may be made to grow; and the more care given them, the greater the success will be. As a rule, all spineless Roses grow better from cuttings than the others; even those are not so likely to form roots if given bottom-heat at once as when given cool treatment at this time of year. If you wish to try the effect of bottom-heat you had better put several cuttings into a 5-inch pot and then place them in a cold frame, which should be kept shaded in bright weather and quite closed generally. In a few weeks such cuttings as are likely to grow will have formed a callus. If the pots are then placed in bottom-heat they will form roots and in time develop into plants. The bottom-heat should not exceed 70 degs. and the top temperature 16 degs. less. The cool treatment—and which I have found the best—is much more simple. Secure strong cuttings 6 inches to 8 inches long and bury them three parts their length in sandy soil in a north border, and put a frame or hand-light over them, or the cold wind will quickly dry all the life out of them, and so will the sun if you expose them to its influence. The young plants should be left undisturbed until next spring, except the Teas; these would be better if potted in the autumn, and protected during the winter.—J. C. C.

3214.—**Climbing Roses in a conservatory in the Isle of Wight.**—You seem to have treated your plants correctly, but it would have been better if the long growths had been fastened down in a somewhat horizontal manner, then they would have broken into growth more uniformly. As your *Marechal Niel* has been in the border three years, and has made a considerable amount of growth, and from your present description of its weakly breaking I am inclined to think that it is suffering from canker. You can easily discover if such be the case by removing a little of the soil, and noting if there is any abnormal excretion at the collar of the plant, especially where it was worked upon the stock. If such be the case, take it up and replace with a fresh plant. You cannot successfully cure this disease, and unfortunately this grand Rose is much subject to it. You need have no fear about putting a fresh plant in its place, should my surmise be correct, as canker is not contagious, and very likely the next plant may go on well. It is not too late to bend down the shoots of the other varieties, provided due care be taken not to bruise or break off any of the eyes that may be boring. Up to the present we have not had good weather for Roses under glass, and I trust yours will improve with more sun.—P. U.

3205.—**Marechal Niel Rose.**—No, it is not the draught that prevents the plant growing. I once had a plant in a similar position that remained in the same condition for six years. All that time it did not exceed 4 feet in height, although I done all I could to make it grow. The same thing frequently happens with this Rose, and if the plants do not grow vigorously the second year after planting I over know one to do so after. If you have a good border you cannot do better than put another plant in by the side of it.—J. C. C.

3187.—**Climbing Roses.**—"Hamilton" will find the following list of varieties suitable for his purpose. Climbers: *Gloire de Dijon* (buff and cream), *Reine Marie Henriette* and *Cheshant Hybrid* (red), *Almée Vibert* (small white), *Climbing Perle des Jardins* and *Henriette de Beauveau* (clear yellows), *William Allen Richardson* (orange and apricot), and *Révo d'Or* (pale apricot-yellow). Half-a-dozen varieties suitable for standards: *Mrs. John Laing* (pink), *Boulin de Neige* (white), *Mme. Lambert* (salmon and red), *General Jacque-*

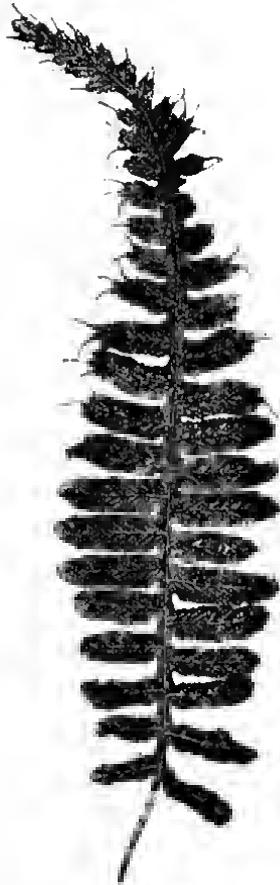
minot (dark-red), *Abel Carrière* or *Fisher Holmes* (velvety-maroon), and *Marie Van Houtte* (yellow). For six dwarf Teas, suitable for outside culture, I can strongly recommend *Anna Ollivier* (buff and peach), *Souvenir de S. A. Prince* (white), *Catherine Mermet* (pink), *Innocente Pirola* (creamy-white), *Mme. Hoste* (yellow), and *Dr. Grill* (coppery-yellow). There are so many Roses suitable for your purpose that it is difficult to choose the six best.—P. U.

—Before planting these paint your wire-netting, or it will certainly cut your Roses back. The following will then do well: *Gloire de Dijon*, *Reine Marie Henriette*, *General Jacquemot*, *W. A. Richardson*, *Fortune's Yellow*, and *Almée Vibert*.—A. G. BRYAN.

FERNS.

CHOICE FILMY FERNS.

THE various forms of this genus are popularly known as Filmy Ferns on account of the membranaceous texture of their fronds. This, com-



Frond of a Filmy Fern (*Trichomanes Sellowianum*).

bined with their colour, which is usually an intense deep sea-green, renders them special favorites. In a state of nature the majority of the species are found in shady mountain ravines, and in some instances in dark and gloomy caves, but in all cases where the atmosphere is well saturated with moisture. The atmosphere of an ordinary Fern-house is thus too arid to allow them to develop their beauties. As the majority of the kinds will thrive in a temperature that does not fall below 50 degs., many of them may be used for the embellishment of the dwelling-house in an artistically-arranged Wardian case. The kinds here enumerated, however, mostly require a slightly warmer atmosphere, and I should prefer the thermometer not to fall below 60 degs. during the winter, whilst the summer temperature should not exceed 85 degs. for any kinds. The creeping-rooted forms thrive best upon peatsoot or pieces of Tree-Fern stems, and those with an upright caudex should be potted in peat, loam, and sharp sand, to which

may be added with advantage some nodules and flakes of sandstone. The froods of these plants require to be always moist. I, however, object to the use of the syringe for this purpose, as unless the water is very clean, some impurities are sure to be deposited upon them to their disfigurement. Those kinds which have their stems and rachises clothed with hairs appear to suffer very much from syringing. The sun should never be suffered to reach them, and yet few require heavy shade. If grown in Wardian cases in the house green glass must not be used, and wherever the Ferns are cultivated the Mosses which spring up must not be allowed to increase and choke them.

T. SELLOWIANUM, of which an illustration is here given from a specimen grown in the famous collection of the Messrs. Backhouse at York, is one of the most handsome of the *T. crispum* group, from which, however, it differs in various ways, the chief distinctions being its tufted habit and larger size. A glance at our figure will give a good idea of the extreme beauty of this plant, which is a native of Brazil. *T. crispum* somewhat resembles the preceding, but yet is quite distinct. The fronds—from 6 inches to 1 foot long, and from 1 inch to 2 inches broad—are produced from a short decumbent or creeping rhizome. They are sub-pinnate, saving a narrow membranaceous wing, which connects them together. The stem and rachis are clothed with short reddish-brown hairs. Native of the West Indies and Tropical America. *T. KAOLIFU* is a magnificent species, and one that would appear to be plentiful in Trinidad, as I have received numerous consignments of it from that island, where it seems to luxuriate in strong loam. The stem and rachis are clothed with long taney hairs, the fronds being from 9 inches to 18 inches high, and about 2½ inches wide; the segments are lanceolate. *T. CRINITUM*: A pretty dwarf-growing plant of tufted habit, with slender hairy stems and bipinnatifid fronds, which are broadly oblong in outline; the colour is pale-green, and the fronds appear of a glaucous hue from the numerous white hairs with which they are covered. It is said to be found in several of the West Indian Islands, but I have only received it from Jamaica. *T. JAVANICUM*: This is a beautiful species from Java and various other islands to the Indian Archipelago; the fronds, produced from a tufted caudex, are from 3 inches to a foot high, pinnate, and of an intense deep sea-green colour. *T. PLUMULA*: This fine form was introduced from Demerara by the Messrs. Low, of Clapton, about the year 1863. I have not seen it in any other fernery, and am not aware if it is still in cultivation. If not, it deserves to be reintroduced as speedily as possible. The fronds are about a foot long and 1½ inches wide. It is considered by some to be a variety of *crispum*, but it is quite distinct from that plant. *T. SINICUM*: This is one of the very prettiest species for draping a piece of rookwork or clothing the stem of a Tree-Fern. The rhizome is slender and wiry, fronds pendant, from 3 inches to 9 inches long, and an inch broad; the texture is almost transparent, bright cheerful green in colour. It is plentiful in Trinidad, and is also found in some other of the West Indian Islands as well as Tropical America. J. J.

3200.—**Greenhouse Ferns.**—To those you already possess you might add *Peris setyrea*, *P. cretica nobilis*, *Lenaria Gibbs*, *Micropolia himalaica*, *Nephrolepis distachya*, *Faraxia*, *Phlebodium aureum*, *Adiantum ornatum elegans*, *A. decorum*, *A. acutum*, *A. thuctum*, *Cyrtium folcatum*.—E. H.

3123.—**Anemone coronaria from seeds.**—If the seeds are sown in March some of the plants will bloom next autumn and winter. Sow thinly in well pulverised soil, covering lightly.—E. H.

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ORCHIDS.

ORCHIS FOLIOSA.

This is a plant which I find many of my readers making sundry inquiries about, and apparently they wish to grow it. Now, there is nothing to prevent them doing so if they only set about it in a rational manner. Some writers affirm that this species is hardy, and that it will live in the open air planted out in a sunny corner. To this I cannot subscribe, although I do not wish to find any fault with the assertion; but I may here state that I have not been successful with it in the neighbourhood of London, although I had lots of our native Orchids in my garden, and these grew and did well. The present plant, however, is a native of the Island of Madeira, and I have had a letter from a friend who is staying there. He writes me that "it is very hot here," and this would lead one to the conclusion our winters are not congenial to it, and I may here remark that at the time I was trying to establish this plant in the open-air garden without success I was very successful with it as a pot-plant under cover, and in this manner I would advise my readers to try it and to grow it, when they will find it thrive and flower most profusely. A cool-frame is the best place to winter it in, but not cold a one; in such a place I have found the temperature fall as low nearly as in the open, and much lower than it does upon any occasion in the island of which this plant is a native, and, therefore I do not think it is well to subject it to greater depths of misery than is necessary. The foliage is ample, and the plant grows up to 2 foot or more in height, and produces dense racemes of its showy flowers towards the end of the month of May and the beginning of June. The usual colour of the bloom is a beautiful rich brownish-purple, with darker spots; but I have had the ground colour of the flower of a soft rosy-lilac with dark spots, and I have even had this plant develop an albino form; but I must say I do not like the pure-white flowers so well as the colour of the typical plant, but this is enough to prove the variability in the colour of this species. This *Orchis foliosa* should not be potted in the manner of the majority of Orchids; but it should be potted in a similar manner to a "Geranium," the pots being well and properly drained, using them of good average size, and for soil use a mixture of good turfy, light, yellow loam and some rich and good leaf-mould. Soon after this article will appear they commence to grow, and during this season it likes a liberal quantity of water; the drainage being in perfect working order, it soon passes away, and if the bulbs are strong enough flowers will be produced in due season; but the plants will require to be kept from the catching spring frosts. After the flowers are over water must be given more sparingly until very little is given; but I do not recommend drying them entirely, and soon after the new year they should be potted and placed in a quiet place until growth starts.

MATT. BRAMBLE.

CYPRIPEDIUMS.

A FRIEND sends me a few flowers for naming, and he has adopted a very good plan—that is, in sending a leaf with each bloom. No. 1 is a very good form of *C. politum*, which was long ago obtained by Mr. R. Warner, of Chelmsford; but it would not appear to have entered the heads of the early raisers of hybrid Orchids the necessity of keeping a record of the parents, but there cannot be a doubt but what it was obtained in some way between *C. venustum* and *C. barbatum*, but I could not venture a remark upon which was the pollen-bearing parent. This is a variety that is well worthy of recognition even at this day when we have such a host of hybrids. It is a good sized flower, and its colours are bright and cheerful, and its foliage, which partakes much of the *venustum* character, is very ornamental. No. 2 appears to be a poor variety of *C. Swianum*, which I should advise you to destroy, and get another form of this variety. There are some *Swianum*s with a large and bold lip, the flower being good and well worth preserving. It is one of the early hybrids, and was raised by my old friend, Van Ouden, when gardener to Mr. Leech, at Manchester. No. 3 is a very bad form of *C. Hookeri*, evidently near *Bollenianum*, a small flower, and is tinged with a slate-green. You will greatly add to the reputation of your collection if the place that knew it once knows it no more for ever, for I would certainly not keep it amongst the other showy kinds. No. 4 is, apparently, *O. euryale*, which is a handsome and good variety obtained between *C. Lawrenceanum* and *O. superbiens*. It has two good parents, and it partakes of both their qualities. No. 5 is *enpencilare*, another excellent hybrid raised between *C. barbatum* and *C. superbiens*. It is a fine, bold flower; another instance of the early hybrids maintaining their position. And No. 6 is *C. javanicum*, having a greenish flower of no beauty, and which I do not advise you to keep for any other reason than its bright, variegated foliage. All these plants will now require to be spotted or resurfaced, so as to have everything neat and tidy when the days of March set in, when we may expect some hot, bright days; so be sure that the plants are got up into position ready to let down over the plants should occasion arise, remembering that saving from scorching in the spring saves the appearance of the entire collection for at least the entire year. More especially is this the case with *Cypripedium*s.

MATT. BRAMBLE.

EPIDENDRUM VITELLINUM
ORGANTEUM.

I AM in receipt of a fine branching spike of this plant from "Leeds," and it is the form which I have seen called giganteum. The writer says "The plant has been growing stronger for these two years, and now is flowering beautifully." Well done! my friend, you have a very magnificent variety, one well deserving every attention, and the fact of its having gone on so well with you speaks well for your treatment being just what it requires. Now, some have asserted that this plant could only be grown well by those living near the sea. Now, Orizaba, which is the district in Mexico where this plant is found, is not near the sea; and I have seen it in a worse state in collections that have been near the sea than I have ever seen it; and although I do prefer these maritime spots for Orchids, because of the purity of the air, it is not this alone that is wanted by Orchids; and this particular species wants to be grown in a well-shaded house, and the moisture in the atmosphere must be well attended to. Leeds cannot lay claim to be influenced by the sea air, and my friend tells me his plants have been grown in the same house I selected for them a few years ago, and his cool-house varieties have been grown from my instructions, and I certainly have to commend him for the excellent spike of bloom he has now sent me up. It is now more than sixty years ago since the typical *Epidendrum vitellinum* was first found in Mexico, and it is over fifty years ago since the plant flowered in England for the first time; but some twenty-three years ago, Roezel sent the variety majus to this country from the neighbourhood of Orizaba, where we are told it grows in a temperature which seldom exceeds 70 degs. of heat at any time, and that during the growing season it receives a constant and daily wetting from the rains that fall, and that during the winter it is enveloped in fogs, and that frosts are frequent during the night for about three months, so that the plant does not appear to live in a state of nature under the most lovely and happy climes, and under cultivation it is a plant that does not require the sunshine upon it, although it should not be excluded from the light, and if the drainage is kept in perfect working order, water should be given it overhead daily with advantage, except through our three winter months, and then the plants should be kept in a nice, moist state, for I consider that dryness is, above all things, the great ruin of the plants, whilst the temperature of the *Odontoglossum*-house suits it admirably.

MATT. BRAMBLE.

COELOGYNE OCELLATA MAXIMA.

I AM in receipt of a fine spike of bloom of this very beautiful variety, by a friend from the neighbourhood of Salisbury, signing "B. T. M." and giving its name and how to manage it. Well, this plant was originally imported by Messrs. B. S. Williams, of Holloway, and

superior form to the typical plant. This species is tolerably plentiful on the Khasis Hills and in Sikkim at considerable elevations; but at what altitude the variety maxima occurs I am not aware, but it is a great beauty, and its raceme of flowers is more full, and the individual blooms are fully double the size of the ordinary form. These are pure white in the sepals and petals, and the lip also is of the purest white on the outside, the side-lobes on the inside being streaked with orange on the inside, and in the centre are several spots of bright yellow, margined with a red border. These flowers yield a delicious perfume, and they may be used either by cutting the spike and using the whole raceme either as a shoulder-spray or a wreath for the hair, or they may be wired singly for purposes of personal adornment. The latter method is the plan usually adopted, because it is the more economical, and, thus treated, the flowers last longer, and the plant will last in bloom the longer, always cutting them from the base of the spike first. With the above comes a spike of *O. flaccida*, which is a plant not to be mentioned in the same chapter with *C. ocellata* for beauty and usefulness, for in the first place the flowers give off an effluvia resembling a stable, which entirely prohibits them being used for adornment; but this is not perceptible when hanging in the Orchid-house. The sepals and petals are creamy-white, the lip the same colour; the lip is white, marked with brown lines in the closed part, having a rich yellow stain on the front. It blooms very freely, but its malodorous properties entirely prohibit its use amongst cut flowers. Both plants may be grown together and treated in a similar manner. They should both be kept in the Cattleya-house, potted in well-drained earthenware pans, and these should be hung up near the glass. The soil these plants like is a mixture of good brown peat-fibre and chopped Sphagnum Moss in about equal proportions, and well mixed. During their growing season they like an abundant supply of water, but not too much, both to their roots and overhead, also from the syringe, and at no time of the year should the drying season be made to last too long, or to cause any amount of shrivelling of the bulbs, or changing of the colour of the leaves, for these plants do certainly show to greater advantage when their flowers are backed with their green leaves; therefore, the plants should be rested for a short time at the warm end of the *Odontoglossum*-house, and kept in a moderately moist condition.

MATT. BRAMBLE.

3058.—The Winter Cherry.—In reply to "L. E.," the seeds germinate best when sown as soon as possible after they are collected, and seedlings raised now will make good plants next year. Sow in the open, and the plants will appear towards the end of March, but autumn sowing is preferable. Prepare the ground in the usual way for seed, and do not get disappointed if it remains dormant for some time. Be careful to watch for mice, which are very fond of the seed. The Winter Cherry is a fine old garden plant, and is a native of Western Europe, also Central Asia, even to Japan. Clumps of it on the border in loamy soil, not too heavy, and an open situation are very attractive during the winter months when the stems are hung with the Chinese-lantern-like fruits, or rather calyxes, as it is these that give beauty to the plant, being inflated, and bright-orange in colour. It is astonishing what a length of time they remain in beauty when out for the house. I have some in vases that have been there for over a year, and they are still bright. In the case of large gardens a good bed of Winter Cherry is useful, and has an attractive aspect through the winter months, whilst the stems may be cut for the house when required. A very easy way to increase stock is by division of the roots, and we may mention that if its stems are much in demand for decorations, a reserve bed would be an advantage.—C. T.

3115.—Coal-ashes on a clayey soil.—Certainly not. Your gardener must have wireworms, or, at least, "maggots," in his brain to imagine such a thing. Pure, fresh coal-ash is the best dressing possible for such land as yours, and the more you can put on and work into it the better.—B. C. R.

3123.—Geraniums bursting.—I expect you grew your plants too strong; but the soil has a great influence in that respect, and some varieties are persistent podurata. It is not good culture to keep the old plants unweeded, but you will probably find the flowers less ready to burst. Do not manure them much.—B. C. R.

FRUIT.

3199.—**Vine in a pot.**—Give a top-dressing, 2 inches thick, three parts of loam and one part of bone-meal, to the surface of the pot. If this be already full of soil place some pieces of turf around the inside edge of the pot, so as to admit of the top-dressing being laid on the surface roots. Pinch out the point of the side shoots two joints beyond the first bunch that forms on these, allowing the leader to extend, if it has not already covered its allotted space. Supply the roots freely with tepid water, never allowing them to become dry for even a short time. When the bunches are in bloom give the stem of each a gentle tap to disperse the pollen, assisting fertilization of the flowers. Directly the berries are the size of small Peas they should be thinned, so as to allow space for each to swell to their fullest size. After thinning abundance of warm liquid-manure will assist the swelling of the berries. This may be given every alternate watering, but not too strong; if from the ordinary farm-tank, about the colour of brown brandy will suffice.—S. P.

—Presuming that this is a fruiting Vine, and that the shoots have made some growth, they should be trained as near as possible to the glass roof of the house, but so as the leaves do not come into contact with the glass. When it is stated that the temperature is from 50 degs. to 60 degs. this must be taken to mean that 50 degs. is the minimum or night temperature, and 60 degs. the maximum or day temperature. The temperature may at once be increased to 55 degs. as a minimum, and in two or three weeks to 60 degs., with proportionate rise by day. When the Grapes are set the minimum temperature may be 65 degs.; but if this is difficult of attainment 60 degs. will be enough. When it is seen that fresh roots are being formed, a surface-dressing of loam and rich manure in equal portions will be beneficial. The roots will push into it freely, and, besides this, weak liquid-manure may be applied twice a week. Some attention is required when the Vines are in blossom. The atmosphere of the house ought to be drier at that time, and the temperature should be at least 65 degs. at night. Gently shake the bunches daily to distribute the pollen, which will fly off in a cloud of golden dust. Thin the berries out about ten days or two weeks after the fruit is set. The Black Hamburgh is a free-setting variety, and the best of all Grapes for pot culture.—J. D. E.

3138.—**Blackberries in an orchard.**—You might grow some of the American Blackberries, such as Wilson Junier or the Cut-leaved Blackberry (*Rubus laciniatus*), which is an excellent variety. It grows strongly, and bears clusters of large, rich, black, finely-flavoured fruit, whilst the leafage is very ornamental, being cut like Parley. A fairly good soil will grow Blackberries well. These are not difficult to succeed with, and in the position mentioned should do well. I have seen the Cut-leaved kind bear a quantity of fruit in apparently very uncongenial spots.—C. T.

3204.—**Pruning an Apple-tree.**—Whatever pruning is needed do it all at once, rather than leave it until next autumn. The kind of tree will determine the extent of pruning required. If it is a standard, pruned a bush, or a tree, provided there is abundant space for its branches to extend, do not shorten these back, except where the young shoots are 18 inches long; then

take off 2 inches of the point to induce the back eyes to break into growth. The main aim in pruning is to allow a free circulation of air and sunlight to the middle of the tree so as to induce the branches and fruit-spurs to mature their current year's growth to admit of their giving a full crop of fruit annually. Remove all shoots that are not needed to fill up a space. In the case of trees growing in a limited space, the points must be shortened back to within a few inches of the old wood as the allotted space fills up, all side growths from the main branches should be cut back to within an eye or so of their base. The salient points to observe in pruning Apple-trees is to fill up the allotted space with the main branches, and afterwards to see that these are not overcrowded by useless growth. Maturity of the branches is the one object to aim at.—S. P.



OUR READERS' ILLUSTRATIONS: A pot Vine for the table. Engraved for GARDENING ILLUSTRATED from a photograph sent by Mr. J. Nash, 1, Chapel-street, Bathampton.

—A tree that bore 5,000 Golden Pippins was well worth looking after, and should not have been neglected. How it should be pruned now it would be difficult to say without seeing the tree. It must be an old tree, and probably make but little young wood. In that case the pruning should consist in thinning out the wood when it becomes too much crowded. It is getting late now to prune, but any pruning absolutely necessary might yet be done. If there is much young wood some ought to be thinned out, and that remaining should be shortened a little.—J. D. E.

3023.—**Mildew on Grapes.**—This parasite is very troublesome sometimes in vinerias, and usually appears when the Vines are in an unhealthy condition, owing to badly drained borders or perhaps unskillful management. If the borders are well drained, and the Vines are otherwise well managed, mildew may be kept out altogether if the rods are well painted

in winter with a sulphur mixture. If mildew appears upon the leaves, paint the hot-water pipes with flowers of sulphur, stirred up in soft soapy water. If the pipes are well heated when the house is shut up, the fumes from the sulphur will destroy the mildew.—J. D. E.

—There is more than one cause for the presence of mildew on Vines. A damp, stagnant atmosphere will produce it as soon as anything. When vinerias are well ventilated without causing cold currents, and steady fires are kept going, there is no mildew. Mildew is not often troublesome in early houses; it is generally in late houses, in which the temperature is low and the atmosphere damp and stagnant. Possibly, also, the roots of the Vines may be in a sluggish state, and, though this of itself may not bring on mildew, yet it does predispose them to the attack. When mildew appears dress the pipes with sulphur and keep up a brisk fire, and, if this does not suffice, attack the mildew with dry sulphur, dusting it on the affected parts and blowing or syringing it off afterwards. It will not be wise to cease the attack until the enemy is quite destroyed. At the end of the season, when the Vines are pruned, wash the canes with a strong solution of Gishurst emponnd, with a handful or two of sulphur thrown in, and limewash the walls, some sulphur being added to the lime.—E. H.

—This may arise from several distinct causes. A stuffy atmosphere, especially if cold and damp at the same time, will cause it, and the presence of a lot of pot plants in the house, particularly if these are not kept perfectly clean and in good health, often give rise to it. Again, a damp, badly-drained border, with heavy soil, will produce mildew in its worst form, and, lastly, admitting rushes of cold air by opening the ventilators on the windward side of the house when the wind is in the north or east, in the spring, often causes mildew by checking the growth of the tender foliage.—B. C. R.

3147.—**An outdoor Vine.**—A Grape-Vine trained over the front of a house is a pleasant object, and in good seasons, if the growth has been properly thinned and stopped, such kinds as Black Cluster and Royal Muscadine will ripen well enough for wine making, and occasionally for dessert. But if profit is the object, an Apricot or a good late Pear will pay better.—E. H.

—There will be no difficulty in growing a Vine on a south aspect in Salop, nor yet in obtaining plenty of fruit; but the trouble is, with such—summer I was going to write, but seasons will be the more correct word—to induce the Grapes to ripen. Years ago we used to get delicious Grapes from Vines on open walls in Surrey, and even in Worcestershire, in the good old days, but it seems impossible now. However, much may be done by careful pruning, stopping and thinning the growths. The main rods may run either horizontally or vertically, but preferring the former, and the lateral growths must be cut back to about three eyes every autumn or early in the spring. Thin out the young shoots to one or two on each spur, and as soon as the branches can be seen stop the growth at one or two joints beyond it. The old Sweet-water, the Royal Muscadine, and the Black Cluster are all good outdoor Grapes.—B. C. R.

—The treatment of a Vine.—I should cut the canes back to 6 feet. You will get as many and probably better Grapes by reducing the length. I am assuming you want Grapes this year. If the permanent welfare of the Vine is considered cut back to the bottom wire, and do not let them fruit.—E. H.

THE KITCHEN GARDEN.

PERPETUAL SPINACH, OR SPINACH-BEET.

This is a most excellent and useful vegetable, which can be had all the year round by making sowings at three different times—one in April, one in July, and another in September—devoting



Fig. 1.—White-leaf or Spinach-Beet.

ground to it according to the demand. The Perpetual Spinach seems to grow luxuriantly on any soil and at all seasons of the year, and being a gross feeder, one can give the plants a good quantity of liquid or other manure. Often, in very hot, dry weather, the round-leaved or summer Spinach is liable to run early to seed; therefore, it produces but few leaves, and those of only second quality. The perpetual sort, on the contrary, grows well in hot weather; and, by feeding the plants freely with artificial manure, one is able to get from the spring (April) sowing alone a good supply during the summer and autumn. The second sowing must be made early in July, in order to give the plants time to get well established before winter, and from these one is able to have a good supply, in proportion to the size of the piece of ground devoted to the crop. The September-sown lot comes in well in early spring. This Spinach is exceedingly hardy, and often, when the ordinary prickly-seeded winter Spinach is killed, it survives the winter unscathed. Ground for this Spinach is either dug deeply or, better still, trenched, working into it, at the same time, plenty of rotten manure for the roots to feed upon. The seed may be sown broadcast upon the beds or in rows, as they afford a better opportunity for keeping the ground free from weeds, and if need be artificial manure can be sown between the rows, hoeing it in deeply with a draw hoe. I find superphosphate of lime, or bone-meal, one of the best manures for Spinach; it seems to invigorate the plants in a very short time after being used. Liquid manure from the farmyard is, however, quite as good, only it requires to be oftener used during the season. I find two good dressings of bone-meal to carry a crop on for six months. The kinds best worth growing are the following—

WHITE-LEAF, OR SPINACH-BEET (Fig. 1).—The leaves of this variety when true are very numerous, broad, slightly undulated, and of a very light or yellowish-green colour. The leaf stalks are somewhat larger than those of the Beet-root, and are of a paler colour than the blade of the leaf. A most excellent kind.

SILVERY SPINACH, OR SEAKALE-BEET (Fig. 2, page 9).—A very fine and good kind, with large broad leaves, which are very much undulated, half-erect, and remarkable for the size of their stalks, often 4 inches broad or more, and mid-ribs. This variety has, when cooked, a very delicate acidulous taste. The blade of the leaf may also be used like the first-named kind.

WHITE CURLED SWISS SPINACH-BEET (Fig. 3).—This is almost as vigorous and productive a variety as the preceding one, with leaves equally white, but crimped and curled in a remarkable manner. The stalks and mid-ribs are not so broad as those of preceding kind, but they are of quite as good quality.

3124.—Cabbages "clubbing."—No amount of ashes will prevent Cabbages "clubbing" on infected ground. This cause of Cabbages, &c., "clubbing," is that they are attacked by one of the parasitic Slime Fungi (Plasmodiophora brassicae), which is very difficult to eradicate. Burn every scrap of the Cabbages you can find, and do not grow any plants of a similar nature on the ground for two years. You may in this way stamp it out.—U. S. S.

3182.—Celery bolting.—Early sowing, standing starving about in pots or pans before pricking off, or checks of any kind will do it; and it may proceed from the seed being saved from a bad strain, or, in other words, there may be a predisposition in the plants to bolt. It is very rare for late Celery to bolt prematurely. This shows that the chief cause of bolting is a check during the early growth under glass, though I have known Celery to bolt from the use of strong forcing manure. The manure for Celery should be thoroughly decayed.—E. H.

The cause of Celery running prematurely to flower is by its experiencing a check, probably in the very early stages of its growth. I have observed that when I sowed the seed in boxes, and caused it to vegetate in a hot-house or a hot-bed, and gradually inured the plants to the open air, I generally had a large number of such plants run to seed; whereas if it was sown in a border out-of-doors, and the plants were carefully pricked out, and were never allowed to get very dry at the roots, I had no plants bolting amongst them. I am sure, therefore, if the seeds are sown out-of-doors, and the plants are grown on well afterwards in good soil, there will be little or no trouble with plants bolting. Celery grows naturally in ditches and marshy places, and must be well watered in summer.—J. D. E.

3195.—Tomatoes for market.—The plants do well in good-sized boxes, and I have both seen and grown some excellent crops in this way; but the simpler, as well as neater, plan is to plant them out. Where the soil is of a suitable character—i. e., a moderately light loam of good quality and fairly well drained, a very common way is simply to plant the Tomatoes out in the floor of the house, the ground having been previously dug over and manured slightly. Otherwise, a bed should be prepared for the plants, and, on the whole, it is better if this can be raised a little. Put a layer of broken bricks or clinkers in the bottom for drainage, then some rough turf, littery manure, or the like, and, lastly, 9 inches to 12 inches of soil, which may consist of any rather light loamy soil (good garden mould will do), mixed with a little (about a sixth-part) of well-decayed manure, some burnt earth, and a dash of soot. In a single row the plants may be 12 inches to 15 inches apart, according to the variety; but if three or more rows are placed together, the plants should be at least 18 inches apart, with 2 feet between the rows; nothing is gained by crowding them in any case. Ventilate freely throughout, and give no shade. Water should be given rather sparingly until there is a fair quantity of fruit set and swelling, then give more and let the plants have some liquid manure as well.—B. C. R.

—Large growers generally plant out in the borders, and when the house is given up to the Tomatoes the plan is economical, and answers well. For very early work, boxes or large pots are very suitable, and are, I think, preferable.—E. H.

3203.—Seed Potatoes.—Stand the sets on their eye-ends upwards in any cool light room. If placed in shallow boxes they are more easily moved about than when laid loose. The sprouts ought to be half-an-inch long at planting-time; if they are an inch long no harm will result providing they are robust, not drawn up weakly. It is a mistake to plant Potatoes with many sprouts on each; two good ones are sufficient, more only crowds the growth, preventing a due development of the stems and leaves which favours small tubers and disease. Two strong shoots are much better than double the number of weakly ones. Four inches deep is quite sufficient covering for them when planted. The best method is to dig the ground and plant at the same time. The soil is left free and loose between the rows, offering no obstruction to the roots, which ramble a long way in search of food. When the haulm is 6 inches high draw the soil on each side up to the stems, not in ridges

fashion, but leaving the soil close to the stems lower than that on each side of the row. If done in a complete ridge, matting close to the haulm, the water from rain runs off into the trench, the plants being thus deprived of the necessary moisture. Early varieties of the Ashtop section need less space than either mid-season or late kinds, 2 feet for the former between the rows, the sets 1 foot apart. The other kinds 2 feet 6 inches from row to row, and 15 inches between the sets. Nothing is gained by crowding them.—S. P.

The best way to "sprout" the sets is to lay them out eye-ends uppermost, in shallow boxes and place those in a light and rather warm place for, say, a month before being planted. The Jersey growers place all their seed Potatoes in flat boxes of which the ends are made rather higher than the sides, with a strip of wood nailed across for a handle. This is done in the autumn, as the crops are lifted, and the boxes are carried indoors and stacked up in tiers for the winter; in this way a certain amount of light and air reaches every set. In the spring the boxes are again carried to the fields, and the sets taken one by one and placed directly in the furrows, with the shoot or "spear" intact and unbroken. 2. The right depth is about 5 inches on heavy land, 6 inches for medium, and 7 inches for very light soils. 3. Earth up slightly when the growth is about 3 inches high, more—as high as you can—when it has grown another 6 inches. 4. Eight or nine inches apart is the proper distance for the early short-haulm kinds, and 12 inches for the late tall growers. The distance between rows should be 2½ feet, and 3 feet to 3½ feet respectively. It is a great mistake to crowd Potatoes in any way.—B. C. R.

3189.—Raising Tomato-seeds.—Make up a slight hot-bed, say about 3 foot high at back and 2½ feet at front, and sow the seeds thinly, broadcast if many are wanted. They come very strongly treated in this way, the lights being taken off to harden the plants. As soon as the plants come up, whenever the weather is mild, they may be sown in pots, and the plants pricked off when large enough, but this plan causes more trouble, and there must be a little warmth to start them. After potting off warm covering will be necessary at night.—E. H.

—If you wait another three weeks before sowing your Tomato-seed, the best part of the summer will be over before the plants begin to produce any ripe fruit. I should advise you not to lose a day in getting the seed in, as with our short summers and cold, wet autumns none but early plants are worth the trouble they entail, certainly for planting out-of-doors. Sow the seed in a pan or box of light, sandy soil, with good drainage, and place it in a frame or house at 60 degs. to 65 degs. A frame over a mild hot-bed is a good place; but the heat must not be too strong, and much steam is injurious.—B. O. R.

3103.—Forcing Rhubarb.—It is not a difficult matter to force Rhubarb, and it may be readily accomplished by packing the roots together under the stage of a warm house. Surround the roots with soil, which must be maintained in a moderately moist condition. You may also force the roots in a deep pit or darkened frame, having a bottom-heat of about 85 degs. to maintain a sufficient heat. This can be gained by having fermenting matter composed of about equal parts stable-litter and leaves. Hawks's Champagne variety, which was recommended recently for general cultivation, is suitable for forcing, so also is the variety Early Red. Rhubarb may also be forced where it grows by covering the crown with a large pot and stable manure or fresh-collected leaves. A market gardener of my acquaintance forces a lot of Rhubarb in an ordinary plant-house where he keeps bedding-plants during the winter, the temperature in severe weather being kept at about 45 degs. In the centre of the house there is a stage, and beneath this is placed the Rhubarb. A succession is kept up by removing the crowns as soon as they have done duty and bringing in a fresh supply. The roots, when forced, are packed away in a sheltered spot, soil thrown amongst them, and covered with a little straw for protection from frost. If you have only a small plant-house you may get early Rhubarb by this plan, as the temperature is not

CHRYSANTHEMUMS.

3210.—**Chrysanthemum culture.**—The only stimulant advisable to syringe over the leaves is scot-water, and I do not know for certain that much benefit is likely to accrue from the practice. There is an idea that scot acts as a corrector of pale coloured foliage. Want of strength in the stems and robustness, coupled with deep-green colouring of the leaves, is owing to some cultural defect at the roots; although in some localities the leaves are always much paler in colour than in others, owing possibly to the constituent parts of the natural soil not being in itself suitable to Chrysanthemum culture. The best remedy for paleness of the leaves is keeping the plants rather on the dry side at the roots; too much moisture is detrimental, as it causes a check to the younger roots, preventing them from fulfilling their proper functions. Although Chrysanthemums are moisture-loving plants, they can have too much under some conditions, and these should be alluded to. Very often in the first stage of growth, some sorts, especially *Boule d'Or* and *E. Molyneux*, will assume a pale tint of colouring of the leaves. If the soil in the pots is kept drier than hitherto, a change will soon be apparent. This is the best test that can be applied. The strength of the stems in any stage of growth depends very much on the state of the cuttings at the time when they were taken and their subsequent treatment. If these are weak at first, rooted in heat and grown on in it afterwards, without a sufficiency of light and fresh air, weakly plants must be expected; no amount of manure or after-treatment will prevent this. Chrysanthemums do not require heat at all, only sufficient to keep out frost. A cool-house is the best place to strike the cuttings in and cold frames afterwards to stand them in until all danger of frost has passed. An open, sunny situation out-of-doors, secure from north and south-west winds, suits them the best until the end of September, when they should be housed. During hot, dry weather, while the plants are outside they will be benefited if the leaves are thoroughly syringed twice a day, early morning and in the evening, but with clear water. A compost of two parts loam, one of leaf-mould or half-decomposed horse-manure, with sufficient sharp silver sand to make the whole porous, is what the plants enjoy during the early stage of growth. For the final potting add one more part of loam, and to every bushel of the compost add 1 lb. Innes' or Thomson's Vine-manure. If the soil is heavy and retentive of moisture, some finely-crushed charcoal or pounded oyster-shells will be an advantage. Pots should not be too large. Those 9 inches in diameter afford sufficient space for the strongest growing sorts. From the cutting-pots the plants should go into those 3½ inches in diameter, then into 5½-inch ones, from these into the flowering-pots. Good drainage is absolutely essential to success. Stimulants are not needed until the pots in which the plants are to flower are full of roots. Liquid-manure from the farmyard tank, diluted to about the colour of brown brandy, given three times a week, is good. Falling this, place some cow or sheep-dung along with a little scot in a tank or tub of water, putting the manure in a bag to prevent its mixing bodily with the water, which would choke the water-passage. Even falling this, use as directed some of the many artificial stimulants, never exceeding the strength recommended.—E. M.

3211.—**Japanese Chrysanthemums.**—The following varieties will be found suitable if the plants are started early and well managed throughout the whole season: *Lady Selborne* (white), *Mme. C. Desgrange* (white), *Mrs. Hawkins* (yellow), *M. W. Holmes* (crimson, bronze tips), *James Saltar* (clear lilac), *L'Affre-caine* (crimson), *Bouquet Fait* (pink), *M. E. Pynaert Van Geert* (yellow, striped red), *Isidore Keral* (rosy-lilac), *Felix Cassagneau* (bright-orange, flamed salmon-red), *E. G. Henderson et Son* (golden-red, crimson reverse), *Bonquet Festival* (deep-rose, reverse of petals silver), *Phœbus* (yellow).—E. M.

3206.—**Sinking a well.**—An artesian well has to be sunk to a great depth, and as special machinery is required for boring it is a very expensive matter, and, moreover, the attempt is not always successful. If there is water at 12 feet or 15 feet below the surface the

better plan will be to employ a man to dig an ordinary well, and see that he goes down till a good spring is struck. As regards pumps, it all depends upon what quantity of water is required; pumps of different powers and makes are to be had at all prices from a few shillings to a hundred pounds or more. I have rather a fancy for the triple pump, worked with a wheel and cranks—at least, where a large and continuous supply is required. Bear in mind that water taken direct from a well is generally unsuitable for all garden purposes, being cold and harsh, so that it would be advisable to have a large shallow tank into which the water can be pumped and lie in the sun for a day or two before being used. If the tank can be raised, and pipes laid from it to the different parts of the garden, the watering will become a very easy matter.—B. C. R.

HOUSE & WINDOW GARDENING.

FERNS AS PLANTS FOR THE DINNER-TABLE.

WITH the large increase in the numbers and varieties in most cases of such plants as *Crotone*, *Dreconas*, *Aralias*, *Palme*, and *Pandanads*, the mere fact of there being many kinds of Ferns which are also well suited for the same purposes seems in a measure to have been lost sight of lately—at least, if the plants usually exhibited at flower-shows are in any measure to be taken as a guide to the most approved selections. Ferns certainly have escaped the notice of those growers who exhibit. My own inference, however, is that the usual run of plants that one meets with in such instances does not by any means embrace either the most comprehensive choice as to variety, or does it include sufficient variation in form and in the size of the plants. Ferns certainly are most convenient plants for dinner-tables when a good selection is made for the purpose. Those sorts are the best which can be grown to a good size in a proportionately small pot. Lightness of growth, both in the character of the fronds and as regards any undue excess of the same, are two points to observe in making a selection. Those plants only should be used which are thoroughly well established in their last shift; if pot-bound, all the better, the frondethus being more enduring so long as sufficient water is given the plants. Plants large enough for all practical purposes can be had in pots that do not exceed 4½ inches or 5 inches diameter inside, the lesser size being most preferable. The varieties that do not assume too dark a green in the fronds will be the most effective, particularly if the plants are rather large. Ferns of the hardier or greenhouse type are very handy for use during cold weather, when exposure of stove plants would involve some amount of risk. A selection of plants should be made for the purpose of table-decoration, the said plants being kept elevated upon pots above the surroundings; in this manner better all-round examples can be grown. Another good plan is to suspend them from the roof, standing the pots in pans to which wires are attached; thus the plants can be removed at pleasure. The following will be found a good selection for cool or temperate-houses: *Adiantum decorum*, *A. cuneatum*, *A. deflexum*, and *A. Capillus-veneris* *Mariosi*, *Asplenium flaccidum*, *A. lorum pumilum*, and *A. dimorphum*, *Lastrea lepida* and *L. potens*, *Leucostegia immersa* (in the summer-time being deciduous), *Pteris argyrea*, *P. cretica nobilis*, *P. cretica Mayl*, *P. serrulata major oristata* (the *Chiswick* variety, one of the best), *P. tremula* (a good old fern), and *P. leptophylla*. For the stove the following should be included: *Adiantum Farleyense*, *A. mundulum*, and *A. Collii*, *Asplenium ciutarium*, *Oymnogrammas* in variety, avoiding those of straggling growth; *G. Altoni*, *G. Lanchensis*, *G. peruviana argyrophylla*, and *G. schizophylla gloriosa* are a good selection; *Onychium auratum*, *Lomaria gibba*, and *Phlebodium aureum*. F.

FOLIAGE PLANTS FOR A PROPAGATOR.

Or late years foliage plants have become almost as popular as flowering ones, and certainly it is a great addition to the attractions of a room, a balcony, or conservatory, where the flowers look far better when cut off by hand-

some semi-tropical groups of foliage plants. But those who have no glass, except a room propagator, may easily contrive to have a goodly collection of these splendid plants, raising them in early spring, and hardening them off carefully in a window until June, when they will grow best out-of-doors, whether in pots or in borders. *Ricinus* (*Gibsoni*), the *Bronze-leaved Castor-oil*, is one of the easiest to cultivate, and at the same time the most handsome, for its broad, richly-tinted dark leaves are a welcome addition to any group of plants. Each seed should be sown separately, in a very small pot, for this is not a plant which is easily moved while very young, although a shift is not difficult when the plants are about 4 inches high, if the soil is not disturbed, but simply placed in a slightly larger pot, with more compost added and thorough drainage. As drainage is most important for the health of all plants—except those in thumb-pots, which require but one crock at the bottom—it may be well to explain the process here. Cover the hole with a piece of crock, with its concave side downwards (it is seldom quite flat, being a bit of broken flower-pot), and over this arrange three or more smaller pieces in such a way as to prevent the soil choking the drainage. These should be covered by a small bit of dry, clean Moss, and over all may be sprinkled a teaspoonful of scot, which has the double duty of nourishing the lower roots and keeping out insects. A little fresh compost laid over the Moss will receive the lower roots of the plant to be shifted, and more compost must be shaken or worked down between the ball of roots and the sides of the pot, leaving from half an inch to an inch of room at the top (after firmly pressing the plant into the new soil and making all neat) for watering purposes, so as to secure a proper supply. *Ricinus* needs rich soil, as it grows large, but not as a seedling; spent soil—i.e., that turned out from potting other plants—and sand will do for the first soil for the seed, gradually adding leaf-mould, with a little scot and sand, and eventually old hot-bed stuff to the compost used at each repotting, till in June the plants are in large pots with rich soil, when they will take plenty of water daily, and can be used as handsome decorators for the drawing-room or balcony. I. L. R.

3194.—**Leaf-mould.**—The best leaves, both for hot-beds and also for mould, are those of the Oak, Spanish Chestnut, and Beech, and the worst are the Walnut. In a general way rake all up and cart them home, and they are all used in mixture with good results; but Oak, Beech, and Elm-leaves predominate.—E. H.

!— I should be afraid to say what leaves are of no use for potting purposes, for in my experi-

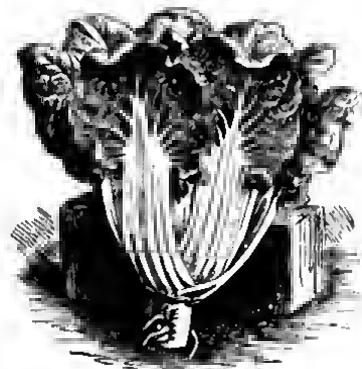


Fig. 2.—Silvery Spinach or Seakale-Beet. (See page 8.)

ence of over forty years I have used the leaves of all sorts of deciduous trees mixed together. The leaves I prefer are those of the Oak, Beech, Elm, Sycamore, and the Common Plane-tree. I have also used the Spanish Chestnut leaves and have found them excellent, but the Horse-Chestnut, although the leaves are all right, are usually mixed with the nuts of the tree, which are productive of fungus. Oak-leaves are the best to mix with manure for a hot-bed, but any other leaves may be used.—J. D. E.

3201.—**Boards by the side of beds.**—Dress the boards with hot tar before putting them, or else paint them well with creosote first, and, if desired, with ordinary green; or other paint afterwards.—B. C. R.

NOTES ON THE CULTURE OF THE
BEGONIA.

The time has again come round for us to begin to think of preparing for our summer feast of these flowers. Those who intend to sow seed to have hubs to flower this next season must as soon as possible make preparation for it. The first thing to do is to get some good leaf-mould, with a little loam sifted very fine, mixing with it some silver sand, having some well-cleaned pots crocked, 6-inch ones being the best, filling them half up with a layer of Moss or sittings at the bottom. Then fill up to within an inch of the top of the pot, not pressing too firmly. Then water this thoroughly with boiling water, given through a fine-rosed pot. This will kill insects or weeds. Then let them drain well, after which sprinkle the seed evenly over the surface; then place a piece of glass over this, darkening the same with paper. This saves covering, and the seed will germinate better, placing the pot in a hot-bed heated to about 75 degs. In ten days' time you will find the seed begin to grow. As soon as it does this remove the paper, but leave on the glass. In about four days the seedlings should be well up. It can then be moved to a warm place near the glass. If the pot becomes dry it must be soaked, just letting the water appear, but be careful for it not to touch the seedlings, or they will damp off. As they grow tilt the glass up a bit with a little stick until they are hardened enough to remove it altogether. Be sure to keep all sun from them. They will soon get large enough to be pricked off. The soil for this operation should be the same as before described, only using shallow boxes or pans, taking out the little plants with a small stick, and put it in the place prepared. They should then have a sprinkle over and be put in a warm, shady place, and they will soon begin to grow away. They must never be let become dry. As soon as they are large enough they can be potted into small pots, using a little more loam and sand with the soil. As soon as ever the plants want a shift, they should have it, only with these shifts a little bone and charcoal should be used. Six-inch pots will be plenty large enough for the plants. The first year some will not require pots quite so large. While flowering, all the best should have special marks allotted and be propagated. This is to be done by means of cuttings. The little shoots should be taken which come up, not cutting too near the bulb, inserting them in Cocoa-nut-fibre or leaf-mould in bottom-heat. As soon as rooted they must be potted in light soil and kept growing so as to get good sized tubers that will keep through the winter. In growing specimen plants for show, it is necessary to select the short habited plants which flower freely. They must be started about February and grow on well, using good rotten loam and manure mixed, some charcoal and bones, having them kept in a shaded house heated to about 55 degs. by night. The plants should be sprinkled with a rose on fine mornings. On no account let them become dry, and when the plants have filled the pots they should have root-water alternately. As soon as the shoots are long enough they should have a neat stick and be tied. There are two classes to see and grow. If you want them for specimen plants select the dwarf, free-flowering ones, good types of which are Livingston, Mistress French, Sir Noel Paton, &c. For cut blooms for show the larger the better—Harold, Triumph de Nancy, Dr. Feltz, &c. G. H. H.

3100.—A rare Grass.—The Sea Reed (*Paspalum arenaria*), known also as *Ammophila arenaria* and *A. arundinacea*, is a common Grass in many parts of Scotland, and also in England, and I cannot conceive why "Robin" should consider it a "rare Grass." It is not of any agricultural value, as no cattle touch it; but it is found very valuable for blinding the drifting sand on the seashore. It also obtains the name of Marrum Grass.—J. JARVIS.

2995.—Cleaning moral.—This is a question quite outside of plant growing; but, having had a good deal to do with this, I have found the very best plan to do it is to suspend it upside down in a copper full of boiling water; the boiling water will remove the dirt from it, which falls to the bottom of the copper. It may require putting into several waters before it becomes quite clean; but it will clean it far before any brushing you can give it.—J. JARVIS.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruits and vegetables for drawing. The drawings so made will appear in the best manner, and will appear in our issue in GARDENING ILLUSTRATED.

TREES AND SHRUBS.

MOCK ORANGE (PHILADELPHUS).

While *P. microphyllus* is the best of the small-growing kinds, this occupies a similar position among those with large blossoms, and it is certainly one of the finest flowering shrubs to be met with in gardens. The individual blooms are a couple of inches in diameter, pure white, and with comparatively little scent. This forms a rounded mass from 6 feet to 12 feet in height, according to the soil and situation in which it is growing. There is a variety of this (*luxus*) less in stature and of a more open style of growth than the type. *P. speciosus* is now regarded as synonymous with *P. grandiflorus*. The planting season not being over yet, the claims of this Mock Orange for a place in any garden should be duly considered. B.

3191.—Hardy evergreen shrubs.—The first three named in this list are flowering shrubs, and grow beyond 5 feet high: *Arbutus Unedo* (Strawberry tree); *Berberis Beali*, flowers to February, blooms very sweet; *Ligustrum japonicum*. The next three grow tall, and are simply evergreen, but of handsome appearance: *Cupressus Lawsoniana*, *Juniperus chinensis*, and *Thuja Lobbii*. The first three of the next list are flowering kinds: *Olearia laevis*, *Laurustinus albus*, *Berberis Aquifolium*; and the remainder are remarkable for the hearty of



A Mock Orange in flower

their foliage, and remain a little over 3 feet for many years: *Aucuba japonica*, *Rotinospora plumosa*, and *Holly Golden Queen*.—S. P.

The Holly, either green or variegated-leaved varieties, may be selected, *Rhododendrons*, *Aucuba*, and not forgetting *A. Mascula*, which bears pollen, to be planted, therefore, to induce a show of berries on the fruit-bearing kinds. *Bambusa Metake*, a beautiful and quite hardy Bamboo, strikingly handsome when well-established; *Berberis Darwini*, *Euonymus* in variety, *Elmagnus japonica variegata* or *macrophyllus*; *Olearia laevis*, which flowers early in the autumn and makes a compact bush; *Veronica Traversi*, a fine bush, the flowers delicate-mauve, and produced freely towards the autumn; *Aralia Sieboldi*, useful for its handsome foliage; *Mahoeia aquifolia*, and *Yuccas*. All are hardy, though perhaps the *Veronica* may get touched in severe weather. The above forms a selection of interesting shrubs, a fair proportion flowering freely.—C. T.

The following are all very hardy:—Back row: *Holly Hodgkiss*, *Holly Golden Queen*, *Lawson's Cypress*, *Berberis stenophylla*, *English Yew*, *Thuja gigantea*. Front row: *Berberis Aquifolium*, *Aucuba japonica*, *Box (Golden)*, *Escallonia macrantha*, *Osmanthus ilicifolius*, *Tree Ivy palmata*. If the soil is suitable for *Rhododendrons* several of these would be beautiful.—E. H.

3111.—Nettles in a shrubbery, &c.—There may be other remedies; but the usual plan is to keep cutting them down as fast as they appear. This gets rid of them in time, if one cannot thoroughly overhaul the soil and dig them out. Perseverently cut them down, and the practice will prove effectual in the end.—C. T.

3110.—*Clematis montana*.—The *Clematis* is a varied family. Some of its members bloom upon the wood of the previous year's

growth, others upon that of the current season. A knowledge of their habits in this respect, therefore, is most essential to prevent mistakes in pruning. *C. montana* flowers upon the wood of the previous year, and therefore anything like severe pruning should be avoided now. My plan has always been to thin and disentangle the shoots at this time, and if the plant is upon a wall leave a fair proportion of them hanging somewhat loosely till flowering is past. The shoots are then wreathed to blossom. Immediately after flowering I give it a good pruning back, not minding the sacrifice of some young shoots, for, with the summer before it, the plant is sure to make enough growth for another season. If the plant in question is strong it may flower a little, but in any case do not prune it, and a vigorous growth should follow this year with abundance of bloom next.—A. H.

TWO GOOD SHRUBS.

There are two good shrubs that ought to be in every garden, as they afford so much enjoyment. The first is the *Wisteria* *Jasmin*, a cheerful, lovely thing, spreading its season of bloom over many weeks—in fact, months, for now again its shoots are wreathed in yellow stars, and an interesting point noticed is its recent recovery from the severe frosts that paralysed it for a time is that when grown in several different aspects it varies in the extent of its injury. Few plants are more easily grown, and happily it is widely known

and appreciated by many; but numbers of little gardens might find one or more nooks for it upon wall or fence where, at present, it is not grown. Although flowering at a time when its shoots are leafless it makes up by the very profusion of its blooms for any slight nakedness in this respect, and its welcome glow of colour is most cheering during the dullest, darkest days of the year. It is hardy, and thrives almost anywhere and in all kinds of soils. This season severe weather came suddenly upon us and caught the shrub in all its beauty of blossoms. Of course the open flowers fared badly, but the unfolded buds remained stationary during a month of frost, and now the mild days have permitted them to open. Not the least of its charms is its value as a cut flower, and shoots full of buds may be cut because they continue to open after the shoots are placed in water. In a cut state the branches are charming mingled with those of the bronzy *Barberry*, or the green branches of the *Ivy*. A pretty permanent effect of this description can be made by planting *Jasmin* and *Ivy* together. Those who want flowers for the house in quantity should make a point of growing this shrub, or need they fear to cut it, as the cutting of the flowering-branches, by judiciously thinning them, would be all the pruning the plants would need. The other shrub is pleasing more by reason of its sweet scent than from the effect it creates. It is the *Allspice* (*Chimonanthus fragrans*), and, like the *Jasmin*, after braving the vicissitudes of the varied weather that makes up our winter season, it responds to the first gleams of sunshine, and

fills the air around it with delicious fragrances. It does not, perhaps, accommodate itself to all sites and soils, but it is far from being fastidious, though flowering in the midst of winter, as it does, by affording it a sunny nook more enjoyment is obtained from it. The usual plan is to train it rather stiffly to the wall; but it should be allowed a little freedom, as by nature it is a self-supporting shrub. The wall is rather for shelter, and if the plant grows outwards, there is a greater abundance of twigs, which bear the flowers. In rich soil, and even when newly planted it is apt to be excessively vigorous. Further excessive pruning promotes strong growth, whereas the best flowering shoots are those of medium strength. Any pruning that the plant requires should be performed after flowering, but here again the need of the operation being anticipated at the flowering-season—the shoots can be cut when in flower, as the flowers last well, and two or three twigs of bloom are sufficient to scent a large room. A. H.

INDOOR PLANTS.

3050.—Plants from seeds.—You might raise annuals in a sunny window, or in a light position in the house, but then comes the trouble of transplanting, as seedlings are invariably sown too thickly, and must be pricked off into other pots. It means turning the house into a little garden. Say what kind of seeds you mean. I advise, however, that you only select such things that may be sown in the open as hardy annuals. The "game is not worth the candle," troubling about such matters in a dwelling-house.—C. T.

2998.—Heating a greenhouse.—You will require 30 feet of 3-inch pipe to heat the house according to the orthodox rule, but I do not place implicit faith in these calculations, as so much depends upon the position of the boiler and the arrangement of the pipes, as well as the position of the house, which, if much exposed, requires more piping than one that is well sheltered. In practice it is always easier to increase the length of piping a little. The equivalent of 4 inches for your space would be about 24 feet, according to the above rule.—J. C. C.

3069.—Tuberous Begonias from seed.—These Begonias can very well be raised from seed sown in a frame. If it can be safely protected from frost, sow the seed at once in sandy soil, but lightly covering it. If the soil is moist, as it should be, water will not be required for several weeks, providing the pan is covered with a square of glass, over which is laid some Moss to exclude the sun. Should, however, the soil become dry, water must be supplied. This is best done by placing the pan in tepid water, allowing it to gradually soak up through the drainage at the bottom. When the seedlings appear above the soil, remove the Moss to give the plants light to encourage them to grow strongly. When they are large enough to handle prick them out into other pans, pots, or boxes, in a mixture of half loam, leaf-soil, and sand, giving plenty of drainage. Keep the frame rather close at first and shade from bright sun. Keep the soil moist, always using tepid water. When the plants meet, they may be potted, if required for use in that way; if for planting in the beds, move them to other boxes and give abundance of air after the roots commence to run in the fresh soil.—S. P.

3036.—Treatment of Cyclamens.—Your Cyclamens should not be out of flower yet. When they are, do not dry off in the old style, but keep the plants growing steadily. They will not require so much water, and may be placed in a cool greenhouse until June, after which it is best to stand them in a pit, and give exposure day and night except during very hot weather, when they may have a gentle syringe, and partial shade during mid-day. You will then find the bulbs flower well another season. September is a good month to repot, and they may then be removed to the greenhouse again. Ericas, however, are very seldom grown well by an amateur, and as they require special and careful treatment I would not advise your attempting to grow it for bloom a second season.—P. U.

3051 and 3068.—Unsatisfactory Hyacinths.—Ever since I have had anything to do

with Hyacinths, and it is a good many years ago since I began my gardening career. Hyacinth bulbs have failed in the way this correspondent complains, and I expect they will continue to do so, for I know of no remedy to prevent it, as I have known them to do so under the most skilful management, and without any apparent reason. It is pretty clear, however, that it is badly matured bulbs that are the worst behaved in this respect, and which I believe is caused by arrested growth, or in other words the bulbs are lifted and harvested before they are ready.—J. C. C.

3026.—Violets in pots.—Much the best way to grow these is to cultivate the crowns or roots in the ordinary manner, and then to put them up during September. In most cases amateurs afford the potted plants too much heat—in fact, they try to force them, and Violets will not be forced, and give a satisfactory crop. You must keep the young plants, from the time they are started in April and May, free from runners. This will conserve all of the strength and conduce to good crowns, well set with flowers in embryo. Unless you secure this you cannot have such a quantity of bloom as you require.—P. U.

3027.—Manure for Begonias.—Almost any manure will do for these; but if of a natural class, it must be thoroughly decayed. For out-of-door beds, I prefer natural manures, but for pot work, guano, Stander's Manure, With's Plant Food, and other artificial compositions are rather better. Although the Begonia likes a free soil, it should not be composed of manure that during the process of decay leaves the soil too hoar or loose. Bone-meal is a good manure for mixing with the potting-soil. Other manures can be given in a liquid state, and preferably while the plants are in full growth. It is much best to use it weak and often than to concentrate the same amount of stimulants in two or three applications.—P. U.

3072.—White Azalea and Genista.—The Azaleas and Genistas will do admirably in a house from which frost is just excluded, and it would be better to allow the plants to open the first few flowers in the greenhouse. Such plants cannot thrive in the window of a dwelling-house. If the plants were put into the room windows before the flowers were near the point of expanding, perhaps they would open badly or not at all. As the plants look healthy they will most likely flower well. The Genista fragrans ought to be coming into bloom now. The flower-buds of the Azalea should be very prominent now.—J. D. E.

3121.—Sowing Calceolaria seed.—The seed sown now would not do much good to bloom this year. July is the best month in which to sow the seed, and good strong plants will be formed to flower the following season. Those not accustomed to sow Calceolaria seed must be very careful, as it is put up in very small packets, and the seed being so very small, a man with clumsy fingers may scatter it inadvertently. Sow on a level surface of finely-sifted soil, and sprinkle a little fine sand over the seed, scarcely covering it. Place a square of glass over, and shade from the sun.—J. D. E.

3150.—Management of a propagator.—There is generally this difficulty of an excess of moisture until one gets thoroughly initiated into the working of a propagator. There would be less moisture if you had only 1 inch in thickness of Cocoa-nut-fibre instead of 3 inches, and you would require less heat, and at the same time secure a more even temperature between the top and bottom—a difference of 20 degs., which you have now, is too much, and as I have already said, it is a waste of heat to have to warm a depth of 3 inches when a less thickness will answer the same purpose. There is really no difficulty in managing a propagator after you have overcome the trouble about the excess of moisture. I, however, advise you to reduce the quantity of fibre, and then take all the water out of the tank for a day or two until the covering of Cocoa-fibre gets pretty dry; you may then partly fill the tank with water, say about one quarter full, and when that has all evaporated you can add more according to the state of the fibre, whether it is very wet or dry; the more water it contains the longer the tank should be kept without water. If this advice does not help you out of the trouble kindly write again.

as I regard a well-managed propagator as being invaluable to amateurs for raising seedlings. In your case—as you have no greenhouse—the beginning of April will be soon enough for you to start sowing seeds. Meanwhile, you may experiment in the direction I have indicated with a few pans of common seeds—Mustard and Cress, for instance—so that you may learn how to regulate the moisture for choicer subjects.—J. C. C.

3152.—Forcing Malmaison Carnations and Gladioli.—Both these are forced in thousands and tens of thousands annually. They have been treated rightly so far, and might have been placed in heat earlier, but it can be done at once. It is always best in forcing any hardy, or comparatively hardy, plants to put them in rather early, and do not give them very much more heat than they had previously been growing in, increasing it gradually until the temperature reaches a minimum of 55 degs. to 60 degs. I would rather incline to the 55 degs. early in the season.—J. D. E.

3130.—Oleander not flowering.—This very pretty and sweet-scented plant is not a suitable subject for window culture; I am afraid you will seldom flower it in such a situation. Nerium Oleander makes growth freely during the summer, and produces bloom-buds in abundance; but unless you can afford a much higher and moister temperature than a window during winter and early spring I doubt if you will ever succeed in flowering it satisfactorily. The buds will drop off annually as you describe in your query. Get a friend to place it in a warm greenhouse if you cannot afford it such treatment yourself. It is a pity to lose the buds in this manner. Allowing the plant to get dry at the roots will also cause this.—P. U.

3151.—India rubber plant.—I should think that the plant requires repotting, or the soil has got in a bad condition. Either of these things would produce the appearance of the leaves you speak of. Give the plant first a good dressing of insecticide, sponging the leaves with the preparation carefully. Then, if the drainage in the pot has got disarranged, set it right, and, if necessary, repot the plant entirely, using a good loamy soil, in which a moderate quantity of peat has been incorporated. Make the whole fairly porous with sharp silver-sand. Place it in a warm-house, if possible, for a time until it has got established.—C. T.

3190.—Marguerite Carnations.—The seed should be sown at once, so as to allow time for the plants to attain a good size and develop plenty of flower-buds before the winter sets in. Sow rather thinly in a well-dimmed box of sandy loam and leaf-mould, making the surface moderately fine and pressing it together rather firmly. If you have only a small packet of seed a 6-inch pot will do. Lay a sheet of glass over the box or pot to check evaporation, and, unless the soil becomes really dry, give no water until the seedlings appear. Then remove the glass by degrees, and when large enough to be removed, transfer the seedlings singly to thumb-pots, or if they stand thickly and are too small for this, prick them out first into other boxes, and afterwards pot them, at first into 3-inch pots and then into 5-inch or 6-inch sizes in which to bloom. Some may be planted out-of-doors in June, and they will bloom freely in August and September. I like to grow at least part of the plants in pots, as these will continue to flower in the greenhouse up to Christmas, when the blossoms are very acceptable. They will, however, require the aid of a little occasional stimulant in the form of liquid-manure of some kind, and should also be kept near the glass in a temperature ranging between 45 degs. and 60 degs., with air on all favourable opportunities. Good sandy loam, with a fourth of decayed manure, grows these plants well, and it should be pressed firmly together.—B. C. R.

3180.—Making a hot-bed.—To make a useful hot-bed from stable-manure stone will require time, especially if the manure is peat. As it must undergo a regular process of fermentation for ten days or so before it is safe to put in a bed to raise seedlings, it will require at least two loads of manure to make a bed to raise seedlings, &c. When the manure arrives shake it all over, so as to separate it, and throw it into a conical-shaped heap. In three or four days it will be getting warm, and as soon as the steam begins to rise from it turn it over and

throw the outides of the heap into the middle, so that all may undergo the same purifying process. If there are any dry spots damp with water, or mix the damp manure from the outside of the heap with it. Probably this second turning and intermixing may be sufficient, but for safety's sake I have sometimes given the manure a third turn before making up the bed. In making the bed, first measure out the space as to have it 1 foot wider than the frame all round, and drive down a stake in each corner. The bed should be built in layers of about 1 foot thick, treading it down moderately firm after each layer has been placed on, until the requisite height has been reached. If the bed is likely to get very hot place a few barrowful of older manure on the top to be a check upon the fresher material below. The bed should be about 4 feet in height at the back, and from 3 feet to 3½ feet at the front. The fresher the manure the more pressure should be given. Build the sides up perpendicularly, or nearly so. When all is completed place on the frame, and place a thermometer in the bed, the bulb being sunk 6 inches in the manure, and as soon as the heat becomes steady at 90 degs. or a little higher put in 6 inches of Cocoa-nut-fibre or sawdust to plunge the pots in, and sow seeds, or put in cuttings.—E. H.

— If you refer to quite recent numbers of GARDENING you will find full information as how to make a hot-bed for seedlings. You must set to work at once, as the season is advancing.—C. T.

3126.—Repotting plants.—It is seldom wise to shake every particle of soil from about the roots of a plant, and even then when it is necessary to do so through its unsatisfactory behaviour. I presume you have fairly well-established examples, and if so, pot them on without disturbing the ball of soil more than necessary, just removing a little of the rougher particles. When the plants are entirely shaken out the roots are often much damaged, and thus progress is considerably impeded. Amateurs or beginners frequently come to grief over this matter. A reduction of the old ball of soil does not signify removal of every bit of soil.—C. T.

3132.—Worms in a Passion-flower pot.—I use lime-water and other things. The best course is to repot the plant, as you say the pot is crowded with worms. Turn it out carefully, and give an entirely fresh compost. I should think it is poor stuff that the plant is growing in, and be careful what soil you use; not leaf-soil, which is sometimes full of worms. The plant would do better planted out.—C. T.

3184.—Culture of Cyperus altifolius.—Sow the seeds in pots or pans of light soil now, or in batches any time when seeds can be obtained. I always save my own seeds from these and similar plants, and they come up as thick as Grass in the field. Place the pots or pans in the hot-bed till the seeds germinate, or they will do in the greenhouse. Prick off as soon as large enough to handle, either into boxes or pots. I generally start my plants in thumb-pots, and when they want more room shift into larger pots. There is nothing easier to grow.—E. H.

3104.—Eucharis eaten off.—It is not easy to say what has eaten off the roots. It may be the Eucharis-mite (Rhizoglyphus schinopus), but I could have advised better if specimens of the roots had been sent. A plan recommended by a correspondent in the Garden is to sink the roots in a mixture of 1½ lb. of soft-soap, and the extract from 1½ lb. of Quassia-chips to 25 gallons of water for three days, and then raising the temperature of the mixture to 115 degs. Fahr. for half an hour. It is proper to note that during the past three or four years the remedies suggested have been very numerous. The great point is to keep the plants in vigorous health, full of growth, and thoroughly robust. The same correspondent also advises the removal of all loose scales from the bulbs, and diseased parts cut out with a sharp knife, brushing them with the following mixture: Quarter of a pound of sulphide of potassium dissolved in three gallons of water, and then soak them in the same mixture heated to 120 degs. Fahr. for at least ten minutes. There are also advertised remedies, which will prove more or less efficacious.—C. T.

— Your Eucharis are no doubt suffering from the Eucharis-mite. There is no other known. The mites work their way into the roots where

no insecticides can touch them. The safest way is to burn the plants and the earth they grow in. The mites are very small, but may easily be distinguished with an ordinary pocket lens. They look like small rounded grains of sand with brown hind-legs.—G. S. S.

3116.—Propagating Echeveria retusa.—This is a charming Echeveria, bushy in habit, compact, and attractive when the plant is well grown. It adds beauty to many a plant-house in spring, and the wonder is one does not see more of it in gardens. Take off the side shoots, cutting just below where the wood has got rather hard, when the plants have finished blooming. They will soon strike if given some warmth, and a light soil used. Take care not to overwater the cuttings.—C. T.

3212.—Greenhouse fine.—I cannot see any objection to the proposed plan. If the new fine is longer than the old one make the chimney proportionately higher, and do not have more elbows as corners than can be helped.—B. C. R.

3107.—Culture of Chinese Primulas.—You may sow the seed in April, and if proper treatment is afterwards given the plants will bloom at the time required. By sowing at different times it is possible to maintain quite a succession. April, or even May, is early enough in the South of England, and March for the more northern districts. This is a general rule; but you may reckon about six months from the time of sowing until the plants bloom. A good way is to sow in late May for November flowering, and August for blooming in the following January. I saw last year excellent plants in October, full of flower, from seed sown the previous June. Sow the seeds in a shallow pan filled with a light compost, such as one composed of loam, one part, leaf-mould, thoroughly well decayed, two parts, mixed with sufficient sharp silver sand to make the whole porous. Cover the seed with a mere sprinkling of fine soil, and place the pan in a house or pit where a temperature of from 50 degs. to 60 degs. is maintained. After the seedlings appear prick them off into other pans, or boxes will do, using a compost similar to that commended above. Remove them to some house, but when commencing to make free growth remove them to cooler quarters, as a steaming heat is not necessary for their culture. When the seedlings are of sufficient size to handle pot them off separately into 3-inch pots, and at this potting a heavier soil is required, which is gained by adding more loam to the previous compost. A cold frame will suffice now, and during strong hursts of sunshine shade them. Always keep the plants near the glass to prevent the growth getting drawn. When the 3-inch pots become pot-bound shift them on into 5-inch ones, and a good compost is made up of turfy loam, three parts, and one-part of well-decayed manure and leaf-mould, with sufficient sharp silver sand to keep it open. Keep them close for a time after potting, but then ventilate freely, and when there is likelihood of frost remove them to the plant-house. Occasional supplies of weak liquid-manure will be beneficial at this stage. If you are a beginner I advise you to commence first with the single varieties.—C. T.

3180.—Bryophyllum calycinum.—There is no difficulty in getting this to grow; the only objection is that it is nothing to look at when you have grown it, as it then somewhat resembles the white-flowering "Winter" Begonia, only without the flowers. Any leaf of Bryophyllum, if struck edgewise near the rim of a flower-pot, filled with potting-soil and sparingly watered, will soon shoot out vigorously on one or both sides, just where the leaf enters the earth. The same trouble expended upon the White Begonia would give a far more satisfactory result; therefore, it is a pity to waste time and space on this tropical weed.—A. O. BUTLER.

3198.—Slugs in a greenhouse.—Turn two or three loads into your greenhouse, and they will soon reduce the number of your slugs for you.—A. O. BUTLER.

— Any application that might be applied to kill the slugs might also do injury to the Ferns. I should certainly catch them and kill them. Place slices of Carrots or Potatoes near the haunts of the slugs, and look over them two hours or so with a light after it is dark at night. Dip oxamine the Carrots every morning. In a week or ten days every slug might be captured.—J. D. E.

3128.—Alocasia zebrina.—This is a fine evergreen species from the Philippine Islands and requires an abundance of heat and moisture all through the season. You cannot dry this plant in the least without doing it an injury.—J. JAVIN.

3146.—The Ice-plant.—Mesembryanthemum crystallinum not so useful for carpeting, especially of Tuberos Begonia, as M. cordifolium variegatum, as there are few better subjects than this for the purpose. It all depends upon the size of the tubers. If large, from a foot to 18 inches apart would do, but less if small.—C. T.

3127.—Crassula lycopodioides.—This Crassula should be in flower now. Two blossoms are in the axils of the upper leaves generally in great profusion, but so minute that they are best seen with a magnifying-glass. Probably "W. C. L.'s" plant has flowered, but not been noticed on account of the size. Plants easily managed. Keep drier in winter.—O. D. B.

RULES FOR CORRESPONDENTS.

Questions.—**Quere** and **answers** are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the EDITOR of GARDENING, 37, Southampton-street, Covent-garden, London. Letters on business should be sent to the PUBLISHER. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and seasons vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appeared.

3120.—Clematis Jackmanii.—Is it too late to cut down this plant? The shoots have already started to grow.—T. J.

3221.—Plantains on a lawn.—Will someone please tell me the best means for getting rid of Plantains on a Grass lawn?—SPAINA.

3222.—Hot-bed.—In making up a hot-bed, if leaves are not to be had, may straw be used instead for mixing with the manure?—E. L.

3223.—Tomatoes and Cucumbers.—Can Tomatoes and Cucumbers be grown in the same greenhouse, size 27 feet by 15 feet?—R. MASON.

3224.—Primulas for spring.—What sort of Primula seed should I buy, and when should it be sown to bloom early next spring?—R. MASON.

3225.—Grafting Rhododendrons.—Will someone kindly tell me how and when to graft Rhododendrons, and on what stocks they should be grafted?—A. B.

3226.—Auriculae and bottom-heat.—When should I sow this? I have a greenhouse and bottom-heat. If it is required. A few hints on their culture would oblige.—T. J.

3227.—Agaves.—I am desirous to form a collection of the best Agaves. Will someone please oblige me with the names and description of the very best varieties?—AGAVE.

3228.—Pruning Rose-trees.—Will someone kindly inform me if I should cut back Rose-trees to the third bud that were budded last year, or let them bloom first?—O. W.

3229.—Canna from seed.—Will someone kindly tell me if Canna-seeds sown now in heat will produce effective plants this year? How are they propagated?—FYMATH.

3230.—Canflower and Broccoli.—Will someone tell me if it is possible to have a succession of these the whole year; if so, what are the best sorts, and when to plant?—PRINCE.

3231.—Large-flowered Cereantheum.—Will someone kindly give me a list of about two dozen large-flowered varieties that do not grow higher than about 6 feet?—G. I. P.

3232.—Trapa bicornis.—I should be glad to know if the outer-burred shell of the bulb Trapa bicornis is part of the root, or whether it is moulded and the bulb put inside?—MRS. R.

3233.—Primulas for seed.—Will seeds of Primula blooming now be ripe in time to sow again this season? I suppose they do not require fertilising like Begonias, do they?—FYMATH.

324.—Pear "Louis Bonne of Jersey."—I wish to know if Louise Bonne ne Jersey Pear is a good bearer and will do well in the north of Yorkshire? Will strong or light land suit it best?—BONO B.

3235.—Clematis corulea.—Is the Clematis corulea blue, as its name suggests, and to what use does it grow? Having a bed of it planted this year, do not know what to arrange to grow with it?—PAT-DE-GALLIS.

3236.—Carrotion cuttings.—I have had a number of Carrotion cuttings sent me from Riviera, and I should be glad to know if they are likely to bloom this year, provided the cuttings strike.—FYMATH.

3237.—Gasterias and Haworthias.—Will one of your correspondents kindly furnish me with the names and descriptions of the best varieties of the above, as I am desirous to form a collection.—GASTARIA.

3238.—Heliotrope on a wall.—I have a large plant of Heliotrope which I want to cover a wall in an unheated conservatory. Would it be best to fresh pot it? If so, what is the best soil for that purpose?—FRANK'S SONS.

3230.—Euphorbias.—I shall feel much obliged if one of your readers will furnish me with the names and descriptions of about twelve of the best Euphorbias suitable for growing with *Cacti* in a greenhouse?—E. THOMAS.

3240.—Clematis and Roses.—Will someone kindly tell me if it is practicable to grow *Roses* in a bed of *Clematis*? If so, the best kinds of each for affording a continuity of bloom throughout the season?—CLEMATH.

3211.—Paradise Apple-stocks, &c.—Will anyone kindly tell whether the *Paradise Apple-stocks* are raised from seed or cuttings, and where I could get them? Also if stocks on the *Crab* are raised the same way?—F. H. B.

3242.—*Shorthia galacifolia*, &c.—Will someone kindly tell me the soil and aspect most suitable for *Shorthia galacifolia* and *Heuchera sanguinea*, and are both really quite hardy? Locality, South Wales, near the sea.—W. H. J.

3243.—Cattle-fish and plants.—I have collected pieces of cattle-fish, washed up on the forebords, which, when dried, can be made into powder. Will anyone kindly inform me if cuttle is use for pot plants in a cold greenhouse and outdoor vine border? Is it equal to bio-dust?—SEARON.

3244.—Making Asparagus bed.—I want to make an Asparagus bed. Which is the quickest method, and how long will it be before good crops can be expected, and which are the best sorts to put in, and what time? I also like to put in *Strawberries* to fruit this year well? Which are the best sorts for *Carmarthenshire*?—FAY-DE-GALL.

3245.—Classes of *Chrysanthemums*.—Would someone kindly tell me of what classes the following *Chrysanthemums* are, noting which are for summer flowering outside? I cannot find them in any catalogue I have. *La Poite de Chrysanthemum*, *Mme. Dufoese*, *Mme. de Dubor*, *Mme. E. Lefort*, *Strathmeath*, *Lady Fitzmaurice*.—FIRA.

3246.—An *Asclepias* shedding its buds.—Should be glad of information as to the reason why an *Asclepias* sheds its buds—a ten-year-old plant that bloomed splendidly until three years ago, and although I have purchased proper soil from nurserymen, and started it in a greenhouse that keeps "Germanium" alive, &c., but not a flower?—FIRA.

3247.—Water Lilies from seed.—Are *Water Lilies* (White), easy to grow from seed; do they bloom same or following year; at what depth shall they be planted; and how and when? Which is the best season to put in plants, and be should they be managed? Must the water be run off for the purpose, and must the ground be prepared in any way?—FAY-DE-GALL.

3248.—Seeds of hardy perennials.—Which is the best plan for sowing seeds of hardy perennials, &c., or of 31-don't? Will certain kinds be prevented by sowing and displacement by watering? I have a large variety to sow this year, many for moist and shady situations, and neutralizing, and am anxious for success. In the *Garden*, page 24, sandstone grit is recommended, but that I have not got.—FAY-DE-GALL.

3249.—Grubs and Ferns.—Would anyone kindly tell me what a white grub, with small brown head, something like an enlarged maggot let? On repeating my *Maidou-hair Ferns*, I found a dozen or more in several of the pots. I destroyed all I could see, and repeated, but there may be germs left in the crowns of the Ferns. Could I destroy these? And is there anything I could use with the potting-soil to kill possible existing grubs?—F. M. II.

3250.—Growing *Roses* in pots.—Would someone give a beginner a few hints as to the treatment required for growing *Roses* in pots in an unheated greenhouse? I have just received six *Roses* from the growers; they are all in 3-inch pots and are apparently quite young plants. May flowers be looked for this year? If they require pruning or manuring or much water? Must they be put out-of-doors in the summer, and if so, are they to be turned out of their pots?—IGNORAMUS.

3251.—A town back-yard.—A few hints on the best means of improving a town back-yard with high wall will be appreciated. The main wall is available for cultivation facing the north, and is about 10 feet in height. I have tried *Tea-plant* with very moderate success, probably on account of the absence of sunshine and hot bottom. What are the most likely plants or flowers to thrive, either climbers or otherwise? Would Ivy grow well without sun? If I made a rockery along the foot, would *White Rock* prove a satisfactory permanent grower?—H. B. R.

3252.—Growing Ferns.—Will someone kindly oblige me with a few details as to the management of a house devoted to the growth of Ferns? The house in question is about 8 feet square, glazed with rolled plate glass, carefully prepared. I will certainly be very particular in maintaining a temperature of 70 degs. Fahr., if necessary, and precaution is also taken to provide a damp atmosphere by means of troughs placed upon the heating pipes. Yet certainly something is wanted, as the new fronds on developing gradually become discoloured. In destroying snails and other vermin, of what strength may a decoction of *Quassia-chips* be used? For instance, what quantity should be boiled, say with one gallon of water?—A. LOVIN OF FRANK.

3253.—*Roses* under glass.—Would "F. U." or anyone else, kindly advise me as to the treatment of the following *Roses* I have wanted out to the border of a cold house? *Kinds* are *Obsessant Hybrid* and *Gloire de Dijon*. The *Gloire* were taken from the open; the *Obsessant Hybrid* were bought in pots and turned out. All were planted last November. The shoots of the bushes are just long enough to be an inch or two above the staging. What I want to know is must I train the shoots straight up or bend them sideways, and try to get them to break at a strong eye? If I bend them sideways they will be below the level of the stage, and, of course, cannot get very much light, and, in consequence, might break very fresh. I would like to see now what you think the present wood will never amount to much.—KOW.

3254.—*Carnations* for market.—I am thinking of erecting a cheap house to grow *Bourbon de la Malmaison Carnations* for market. I have a practical knowledge as a private grower, but I want some good growers' advice how to produce them in quantities for market. What is the best shape and size of house for growing out blooms? What aspect? What heat required? Which is the best way and best time to start? Would it be best to buy the best plants in July and layer them, or purchase young stock now? What are the best sota pots to grow them in, and the periods of potting?—CARBATIO.

3255.—Forcing *Rhubarb* and *Seakale*.—I had twelve stools of each, and in November I prepared and got a lot of ashes and covered them about 1 inches deep, and I covered the *Rhubarb* with stable-manure, and mixed it with leaves. I cut three dozen December 22nd last, and it was exquisite in flavour and size. The *Rhubarb* I covered with 25-lb pots and covered it with stable-manure, and the first lot was December 15th, and it was 16 inches by 1 inch. I have taken off 300 dozen up to date. Could I obtain it sooner than the date mentioned? If so, any information will be thankfully received.—GARDENER.

3256.—Plants on the back wall of a viney.—I should be glad of a few hints as to the plants most suitable for covering the back wall of a lean-to viney, 30 feet by 12 feet, facing S.W. The roof has a sharp pitch, the eaves are 4 feet high. 4 to 5 vines (*Black Hamburg*) are three years old and 6 vines number, started naturally, and the house is quite cold in winter, but well heated in summer. There is a good border, 2 feet wide by 18 inches deep, beside back wall. I had thought of planting a *Marshall Niel Rose* at south end, and a *Lapageria* or *Faeson-flower* at north end, with a few strong *Fuchsias* between these. Would these be suitable, or will someone please suggest something better?—HUNSMAN-FIELD.

3257.—Water plants.—I shall be glad to know names and culture of hardy plants for edge of water to make a show of colour and plants which will grow in shady places or under trees, as I have much shady grass in my garden and under high trees, where I about 12 pinks (*Black Hamburg*) are in pots of my garden where at some time rubbish has been thrown, and which is now covered with *Grass* and *Nettles*—*Snowdrops* coming up in profusion at this time of year. The *Nettles* and other coarse-growing weeds are allowed to remain, as they make cover for the pheasants, but I think something might be done to improve so unightly a place, as it is near the house. I should be most grateful for assistance in these matters, wishing to beautify a garden as quickly as possible, which has hardly anything in it. Buying plants on a large scale is very expensive, though I have already put in a quantity of hardy herbaceous plants to get flowers this year.—FAY-DE-GALL, Carmarthenshire.

3258.—Growing *Chrysanthemums*.—I wish to grow the following *Chrysanthemums*, so that none shall be more than 2 feet 6 inches high. Which plants shall I cut down in May, and which varieties, if allowed to grow without cutting down, do not reach or exceed the given height? I only want three or four blooms to each plant. Will the blooms from out-down plants be so fit for show as those from plants not so treated, but allowed to grow without cutting down? Is there much difference in the size of the blooms from out-down plants and those not out-down? My varieties are: *Etoile de Lyon*, *Bartier Reudatter*, *Source d'Or*, *L'Adorable*, *Florence Porey*, *Edouard Audiguer*, *Staudes White*, *Sunflower*, *Charming*, *Mora Bernard*, *M. de Jacon*, *Comte de Germain*, *Mora Bernard*, *Jeanne Deleau*, *Bunet*, *Louis Bahmer*, *Avalanche*, *Vivand Rose*, *Lord Alcester*, *Empress India*, *W. H. Lincoln*, *Violet Rose*, *Mme. C. Audiguer*, *Belle Paris*, *Edwin Molyneux*, *Mrs. J. Wright*, *Lady Selborne*, *Mr. G. Orchard*, *Alpheus Hardy*.—ANTHONY.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

3259.—*Odontoglossum Rosei majus* (J. R. Loxley).—Your plant coming into flower now is quite seasonable, and it will last in flower a long time if you do not give it liquid-manure. You, growing *Orchids* in a window, should by no means think of using liquid-manure.—M. B.

3260.—*Begonia*'s roots eaten (*Momera*).—The roots are badly infested with the grub of a weevil. These should be carefully destroyed, in order to prevent further mischief. The leaf-mould may have contained something that was infested with them previously, and have thus caused the mischief to become intensified. You should carefully search for these pests and kill them; that is the only way to get clear of them.—J. JARVIS.

3261.—*Adiantums* dying off.—H. C. asks if this is necessary. A friend has told her that it is so, and that all the fronds should be cut away at this time. No; you treat this advice with indifference. Many people do dry off the *A. onesetense*, and get a batch of new fronds every year; but to treat all the family so is a very great mistake. Yes, get them and cut away any old fronds or pees; this is the best time to do so, when the young fronds are partly grown. You must name the kinds of *Adiantums* you have before I can offer you advice as to temperature.—J. JARVIS.

3262.—*Cypripedium obovatum* (H. C. Amateur).—This seems to be the species to which the leaf sent belongs, but it is not a very fine one to judge by. The plant comes from warm parts of Burmah, growing upon limestone rocks. To grow it well under cultivation is a feat which has never yet been accomplished; but when I have seen it doing best it has been potted in a mixture of light, turfy loam and leaf-mould, with the addition of some pieces of limestone in the soil, and with the drainage material entirely composed of the last named substance; give it plenty of heat and moisture, and let me know how you succeed.—M. B.

3263.—*Dendrobium Leochlanium*.—C. Harbrook is a fine specimen to me. I received this plant in a pot, and who got it from Burmah two years ago. What treatment does it require? Now, I do not think it

possible that your friend could have so received this plant, unless it had been taken out to that country in the first place, because it is a form which was raised by hybridization in this country some years ago, and not likely to occur there. It must be a plant that had got put amongst some that your friend had received from that land, or he has given you this one in, or something must have happened in a similar manner. It is not possible to impart this English garden hybrid.—M. B.

3264.—Ferns in bad condition.—H. T. says: "I have just taken to a place, in which there are two fornicies, but the inmates are in a wretched condition." To this I would say, now is just the time to take to it, and if you treat the plants properly you have a splendid opportunity to distinguish yourself by showing an improvement. You may get ready for repeating, and do it whenever you like. The sooner the better; but in doing this be sure you drain the pots well. Good drainage enables one to give water more freely, and without incurring any risk. This is just the time I should like to take to a place that had been neglected.—J. J.

Names of Plants and Fruits.

Any communications respecting plants or fruit sent to name should always accompany the parcel, which should be addressed to the Editor of Gardening Illustrated, 37, Southampton-street, Strand, London, W.C.

Names of Plants.—Sydney.—1, *Cypripedium barbatum*; 2, *O. villosum*; 3, *O. Boxall* (all very good varieties); 4, *Lycaste Mesosealium*. The *Ocology* bulb is not of much value, and we do not know how to advise you without seeing the plants.—C. Earl.—1, *Adiantum acuminatum*; 2, *Asplenium Hookerianum*.—B. F., Bristol.—1, *Adiantum acuminatum*; 2, *Look like an Escutcheonum*; 3, *Scoroppy*; 4, *Dendrobium*, cannot name; 5, *Dendrobium Falconeri*; 6, *Too scorpy*; 7, a form of No. 1, should like to see it again. —Onward.—1, *Neprolepis pectinata*; 2, *Pteris aristata*; 3, *Pteris cretica albo-lineata*; 4, *Adiantum onesetense*; 5, *Asparagus plumosus*; 6, *Selaginella pubescens*; 7, *Adiantum macrophyllum*; 8, *Pteris acrostichata cristata*. —Overture.—1, *Dicksonia fibrosa*; 2, *Cyathea dealbata*; 3, *Pteris argyrea*; 4, *Coprosma Hameriana variegata*; 5, *Selaginella dichotoma*; 6, *Selaginella pubescens*. —T. H.—1, *Acacia grandis*; 2, *Apparently A. divaricata*. Probably pruning would be the best plan.—A. V.—*Skimmia japonica*.

Catalogues received.—*Florist's Flowers*. Mr. John Forbes, Hawick, Scotland.—*General Catalogue*. Messrs. Ellwanger & Barry, Mount Hope Nurseries, Rochester, New York.—*Farm Seeds*, de. Messrs. Little & Ballantyne, Carlisle.—*Show and other Pelargoniums*. Messrs. J. R. Pearson & Sons, Chiswell Nurseries, Nottingham.—*Bone and Special Manures*, de. Messrs. Proctor & Rylands, Carr-lano, Birmingham.—*Farm Seeds*. Messrs. Little & Ballantyne, Carlisle.

BEEES.

SEASONABLE NOTES.

COLONIES being in possession of a fair supply of food usually begin to rear broods as early in the season as the latter part of January or early in February. A small patch of brood at first appears in the centre of the cluster of Bees, this patch is enlarged and small circles of brood appear on the next adjoining combs, and spread gradually as the season advances, according to the strength of the hive, until it fills the cells not occupied by honey and pollen. The chief point to be kept in view in order to make Bee-keeping a success is to have stocks always strong; this is accomplished by means of stimulative feeding and spreading the brood at the right time.

FEEDING.—The time for commencing feeding depends much upon the state of the weather, but on a fine mild day at the end of February or the beginning of March the hive should be examined in order to ascertain its condition in respect to stores on hand and what amount of brood rearing is going on. By uncapping some of the honey cells the Bees will thereby be stimulated to continue brood-raising with greater vigour. Should the hive be found short of stores at this examination Barley-sugar may be supplied, and syrup later on, for when the weather is cold and the Bees not flying, they will take Barley-sugar or candy in preference to syrup. Pea-flour is used largely in the rearing of the brood if supplied to the hive, either in the form of Pea-cake or by sprinkling it on shavings or anything of the kind, placed in a box, pan, or skep near the hive, from which the Bees will eagerly gather it on bright, warm days. Much water is used by the Bees in the spring in preparing food for the young grubs. A pan of water, having floats of Cork or small pieces of wood in it for the Bees to alight upon, placed near the hive will be of great service, and save much Bee life in rough, windy weather, as in the breeding season Bees will venture out long distances in search of water. By careful feeding and spreading of the brood the apianian is enabled to get the hive full of Bees to take full advantage of the honey harvest when it arrives. In those places where the main crop of honey is from fruit-blossoms, it is, of course, necessary to be earlier in stimulative

feeding than in those districts where White Clover, Limes, or Heather are the chief sources of supply.

BROOD-SPREADING.—Except in the hands of experienced Bee-keepers, brood-spreading is a somewhat risky operation, for should the nights prove cold when there is brood on the outside combs and there are not great numbers of Bees in the hive, those on the outside combs will crowd to the centre for warmth, leaving the brood uncovered, which will, in consequence, become chilled, trouble, loss, and failure being the result.

FOOD.—Syrup is made by dissolving white lump cane sugar in the proportion of 10 lb. to 7 pints of water, with the addition of 1 oz. of salt and 1 oz. of vinegar, and boiling for a few minutes. There are many kinds of feeders for supplying the syrup to the hive, one of the simplest being a wide-mouthed bottle, which after being filled with syrup is inserted over a vulcanite stopper, which is so perforated that the bottle covers one or more holes, allowing the bees to take the syrup slowly or quickly.

BIRDS.

3305.—Macaw pulling its feathers.—My Macaw is pulling out her feathers badly. She is suffering, I think, from Christmas excesses, but is generally fed plainly on grain and water.—SOSBER.

3304.—Treatment of a Parrot.—I should feel very grateful to "Doubting" or "A. G. Buntice" if they could give me advice on the following query: I have a very valuable Parrot, and since the 15th of this month she has hardly been able to put her right claw to the perch. On the 16th she had a bath. I suppose she hurt it in some way or other than, as it was all right before that. She is very tame, and I can do anything I choose with her. The claw is in no way swollen, but she turns it in under her wing as if in great pain. Should the nails be cut the same as a Canary? I might state the Parrot is quite well in every other respect, and seems just as talkative and cheerful as ever.

3303.—Sudden death of Canaries.—What is the probable cause of the sudden death of my Canaries? A male which was kept in a sitting-room was found dead the other day. His food was Canary and Rape-seed, but he a fortnight it had had about a dozen Hemp-seeds per day, partly because it had had a slight cold, and partly to teach it tricks. It had quite recovered from the cold apparently, flung in the window, and was removed at night to talio. Was allowed to fly about the room. No gas was burnt in the room. This is the second bird that has died in the same way.—W. GOSWICK.

3302.—Bullfinch losing its feathers.—I have a Bullfinch, whose head has been quite bare for about two months. It is kept in a large cage with other British Finches, two of which have lost some of the feathers from their necks, and do not appear to be growing any more. I give a mixture of Canary and Rape-seed, with a little Hemp, Millet, and Ings. I should be very much obliged if somebody would tell me what this is caused by and how to cure it.—BURNHAM.

3299.—Java Sparrow.—Will anyone kindly tell me what to do for my Java Sparrow? His head is quite bald, but the rest of his feathers are all right.—BURNHAM.

POULTRY & RABBITS.

3270.—A poultry-house.—Will someone kindly advise me as to the best description of poultry-house? I have 20 fowls, and keep chickens for the use of our own table (about 25). Of what dimensions should poultry-houses be, also the run? Are movable ones made of wood to be recommended? Must they not be cold and difficult to keep wholesome and clean?—A BRUNING.

3101.—Fowls losing their feathers.—The fowls are like many others which are kept in confinement, addicted to the habit of feather-eating. It is not possible to recommend a cure which shall prove effectual in all cases, but a simple one is to cut the edge of the upper beak of the fowl. This prevents it taking a firm hold of the feather, and so it gives up the habit in disgust. There is no difficulty in cutting the beak. All that is necessary is to use a sharp pocket-knife, and cut away the hard edge. Do not cut into the quick, and it is not necessary to cut the lower half of the beak. This does not interfere in the least with the fowl's eating, nor is it easy to distinguish at the first glance a fowl which has been thus treated. I mention this to show that a bird is not made unightly by the cutting as many may suppose, nor does it undergo any discomfort by the mutilation. I know of no other cure. I believe the habit to be taken up through lack of occupation; it may also arise through the non-supply of green food and water. Fowls at liberty rarely, if ever, take to the habit, and generally discontinue the practice on being liberated from a confined run.—DOULTING.

3140.—Insects in potting-soil.—The insects you find in your potting-soil are, I expect from your description, which, however, is a very meagre, one of the many species of Springtails (Tribus amblyopoda). This species, however, has no springing apparatus. You cannot do better than bake the soil, unless you could place it where the small birds could pick it over.—G. S. S.

HOOPER'S Grand Strain of PANSIES.—Awarded upward of 50 medals. Seed saved from 1,000 choice exhibition named varieties, 1s. and 2s. 6d. per packet, 10s. for each.—F. HOOPER, Fancy Grower, Bath.

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GARDENING ILLUSTRATED.

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Founded by W. Robinson, Author of "The English Flower Garden."

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CHRYSANTHEMUMS.

SEASONABLE NOTES ON CHRYSANTHEMUM CULTURE.

FROM a somewhat wide acquaintance with amateur cultivators of Chrysanthemums, I find there is a growing tendency toward a wish to cultivate the plants mainly for the production of large blooms, in many cases more especially for exhibition. So many of this class of cultivators appear to want to emulate their professional brethren (gardeners) in this respect, and I am pleased to find during an extended tour of the shows in the autumn that many whom I term purely amateurs do not only compete in the open classes, but are very successful too. As the time has now arrived when it is necessary to determine the method by which the plants are to be grown to give the best results, I propose giving a few plain hints as to the various ways practised, and endeavour to instruct those for whom I mainly write—beginners. At the outset it is well to determine the number of blooms each plant is intended to produce. Some persons think that to obtain these fine exhibition blooms one only is allowed upon each plant. I know that this idea strongly prevails, as I was a listener in a railway carriage last November to a conversation, in which an enthusiastic amateur was describing the manner in which the blooms were grown—one to each plant. This is decidedly an error; it is a sheer waste of time to cultivate the plants to give but one bloom. Others, again, think that four or six on each plant are not too many. From a long experience, and a close observation of other people's ways, I have long since come to the conclusion that three blooms on each plant are sufficient to have them of the best quality. I therefore advise that three be the maximum number. If the plants are managed to carry one bloom only, and an accident occurred to this when the bud was forming, the whole season's trouble would be, as it were, thrown away. Some readers advise that the plants be topped to hurry on the formation of the crown-bud, or retard it, as the case may be, but, with the experience of such changeable weather from year to year during the summer months, this plan entails too many risks to be generally followed. Some, again, think that by following the "cutting-down" method the plants can be made to grow dwarf and also give exhibition blooms. This is an erroneous idea. Good blooms are undoubtedly obtained from plants treated in this manner, but they are much below what is required for exhibition purposes. I do not mean to say that not one single bloom that is fit to include in an exhibition stand cannot be obtained by following this plan, but the exception certainly is the rule. The method that I practise and advise is to allow the plants to assume somewhat of a natural growth—that is, confine them to one single stem until it naturally breaks into additional growths by the formation of a flower-bud in the point of a single stem. This phase takes place at various times, being regulated by the

varieties; the time the cuttings were inserted, and also the manner in which the plants have been grown since roots were formed. In a general way, if the cuttings are inserted any time in December, the plants grown steadily in an open-house or frame, the first break takes place from the first week in April until the same time in June, ranging over two months, so strikingly different are the various kinds in their manner of growth. While some varieties will make their first break at 1 foot high from the tops of the pot, others will grow 3 feet, and many 4 foot, before the flower-bud forms in the point of the shoot. Some writers say that this first bud does not form early enough to give the best results; but where this occurs the fault is traceable to the time the cuttings were inserted, or the manner in which the plants have been managed since. When the plants are allowed to assume somewhat a natural manner of growth, all the wants are met at the proper time; the wood becomes gradually matured, and without proper maturation it is not possible to obtain blooms of high-class quality. Plants immature in their growth will produce blooms large enough in diameter, but they lack those essential points of quality so desirable in the incurved section especially, depth and solidity. Plants that have green, soft, sappy stems cannot give blooms perfect; the wood should be hard and the bark ought to be brown and very much cracked and rugged. These, then, are the points to aim at to attain the greatest success. I fear that many collections of plants are spoilt for the want of a little knowledge in the manipulation of the shoots at the time when the first break is made. I stated previously this was caused through the formation of the flower-bud at the apex of growth, which causes a check to the plant. Nature, to right itself, ceases other growths to be pushed from the nodes immediately below the bud, generally those nearest the apex are the strongest; if this is as, three of the most promising should be selected as soon as it is possible to see that they are perfect in growth. Remove the flower-bud and all the shoots from the plant except those selected. Directly they can be handled the plants should be relieved of this superfluous load. By this means the whole energy of the plant is concentrated in the three selected shoots, which from this stage grow away rapidly. In time each one of these will produce a bud; in many instances it is this bud that gives the desired bloom. However, I do not intend to deal with that part of the subject just now, but rather return to the cause of failure in this phase of the culture. Many persons neglect to reduce the number of shoots until they have extended 4 inches or 6 inches. These only tend to rob the plant of that strength that ought to be reserved for the after-growth. In consequence the plant is weakened and never regains its necessary vigour. Another mistake commonly made is that of allowing the shoots to reach the length named, and then to remove all at one time, which cannot fail to give a check that would be better avoided. At no stage of their existence do the plants grow so fast as they do directly after the formation of the first break. A neat stake ought to be

placed alongside, to which the shoots should be loosely yet securely fastened, as, being so brittle when in gross growth, they are liable to be broken by various causes. As the pots gradually fill with roots they will require abundance of water to maintain the plants in vigour. At no time ought the soil to become dust-dry; such treatment ends in the loss of the lower leaves. It may not be perceptible at the time, but sooner or later is sure to follow. Regularity in supplying the plants with water at the roots is most important. E. M.

3231.—Large-flowered Chrysanthemums.—Presuming that "G. J. P." is in want of varieties that exceed beet on what is termed the large-flower plan of growing the plants, I have chosen them with that aim, including Japanese, Incurved, Anemone, and Reflexed, to make the collection thoroughly representative. If I have named too many sorts the selection can be made as required, commencing always from the top of each list as I have placed them somewhat in the order of their merit:—Japanese: Avalanche (white), Vivand Morel (deep mauve, lighter shaded), Sunflower (golden-yellow), Mile. Marie Heete (white, shaded bluish), Edwin Molyneux (crimson and gold), Stunstead White, Mrs. Falconer Jameson (chestnut-brown, tinted and striped yellow), Mons. Bereard (deep rosy-amaranth), Val d'Andorre (red, shaded orange), Col. W. B. Smith (old gold-yellow, tinged with terracotta), Boule d'Or (yellow, tipped bronze, long drooping florets), W. H. Lincoln (pure golden-yellow). Incurved: Generally the "Queen" family, which comprises the best of the incurved section, grows 6 feet high, but if not overreign, they sometimes do not go beyond 5 feet; Empress of India (white), Lord Alcester (primrose), Queen of England (bluish), Alfred Salter (deep rosy-pink), Golden Empress (golden-yellow), Princess Teck (bluish-white), Hero of Stoke Newington (rose), Mrs. Norman Davis (orange-yellow), Lady Dorothy (cinnamon-huff). Reflexed: Cullingford (brilliant-crimson), Cloth of Gold (golden-yellow), Dr. Sharpe (magenta-crimson), Mrs. Forsythe (creamy-white), Pink Christine (pink), King of Crimsons (rich, dark-crimson, anemone), Mrs. Judge Benedict (light-blush, changing to pure-white, lemon centre) Thorpe Junior (pure golden-yellow), Fleur de Marie (white), Delaware (creamy-white). Anemone-flowered Japanese: Scur Dorothee Sonille (bluish-white, deeper when developing), Nelson (rosy-crimson), Jeanne Marty (bluish-white, lilac centre), M. C. Leboeuz (citrone-yellow).—E. MOLYNEUX.

3232.—Growing Chrysanthemums.—It is impossible to grow some of the varieties, such as Mme. C. Andiguiet, Bertier Renaudier, Belle Paule, and Mrs. J. Wright, as as to have large blooms and still keep the plants under 4 feet 6 inches high. If "Antelope" especially desires to retain those named I should advise him to treat them as "bushes"; they would under that method of culture give a quantity of flower which would no doubt be found useful. If this is decided upon the plants must be "topped" when 4 inches high, to induce side shoots to

grow to form the future "hush." When those have again extended 5 inches, top them a second time; afterwards allow them to grow uninterruptedly, not even deheading the blooms at all, but allowing all to develop. The list contains the names of a few others that are useful nowadays as large blooms, especially if exhibiting is thought of. These would also make good bushes, or they might be substituted for others more suitable for giving large blooms, of which there are plenty, and of dwarf growth too. Sources d'Or, Florence Percy, Edouard Audiguier, Ada Spelding, Sunset, and Lady Selborne, are those to be added to the list for "hushes." With the exception of Mrs. Falconer Jameson, none of the others give blooms from out down plants equal to those of the same kinds grown without cutting down or topping. Very good blooms are produced on out-down plants, most suitable for grouping, but where they lack is in the depth, which is much short of what it is in blooms produced from plants not interfered with at all, but allowed to grow away uninterruptedly. The varieties that will give large blooms and not exceed the height named, grown naturally, are L'Adorable, Val d'Andorré, Mrs. E. Jameson, M. Bernard, Lonie Boehmer, Avalanche, Viviani Morel, E. Molyneux, W. H. Lincoln, and Mrs. Alphonse Hardy. Of course, "Antelope" must understand that in giving the list of names said not to exceed the height mentioned, I am assuming that the plants have been growing and will continue so to grow under favorable conditions in a cool temperature with abundance of light and air, as so much depends upon this in determining the height of any variety. If the plants are huddled together in a warm house the growth is sure to be weakened and the height increased correspondingly. By omitting the remainder of names, "Antelope" will know which sorts require cutting down in May to ensure their being of the height required.—E. M.

3245.—Classes of Chrysanthemums.
—Lady Fitzmaurice is yellow in colour, and belongs to the reflexed section, very free flowering, and early out-of-doors. Strathmeath is an early-flowering Pompon, rosy-pink in colour, very distinct, and free. La Poite des Chrysanthemums, Japanese, colour, rose-violet and white. Mme. Dufosse is an October-flowering variety; colour, crimson-red, tipped golden-yellow, centre old gold. Mme. de Duber, also an early-flowering kind, having bread petals, creamy-white, striped rose, and of large size. Mme. E. Lefort, early-flowering Pompon, dark golden-yellow, shading to red in the centre, of capital quality. "Fife" will see that all are good for early-flowering outside.—E. M.
— La Poite des Chrysanthemums, Mme. Dufosse, Mme. de Duber, and Strathmeath are early-flowering Japanese varieties, the first three being of French origin, and the last from America. Mme. E. Lefort is an early-flowering Pompon (French). The season of blooming of all is about October. Lady Fitzmaurice is a reflexed variety.—B. C. B.

3251.—A town back garden.—You will not achieve much under such conditions. I should certainly try Ivy, as it is not averse to shade or moisture—in fact, grows best when thus placed. The variety Emerald Gem would prove an excellent kind, as it is very vigorous in growth, and makes rapid progress if good plants are put in, or you could select the ordinary Irish Ivy, the large-leaved Regeneriana, but don't attempt to grow the small variegated kinds. You might try also Vestch's Virginian Creeper, and at the base of the wall you could grow Ferns; but I should not make a rockery, as without sun, and enclosed in such a prison, practically nothing would grow except Ferns, as to get flowers sun and air are essential.—C. T.

I should recommend you to confine yourself to the large variegated and the small wood Ivies for the wall, and if you make a bed with rock-work at the bottom plant it with Ferns and Stonecrop. It is of little use to expect flowers to bloom under such unfavourable conditions.—A. G. Evans.

MILD.—Leaf-mould.—The best leaves for making leaf-mould are, generally speaking, Beech, Ash, and Lime, also, though cut at ways to be had in plenty, Hazel and Briars. Sycamore and Oak are not generally so useful, as they are rather longer in decomposing, nor are Holly or Laurel.—PARRY.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruits and vegetables for drawing. The drawings so made will be sent you in the best manner, and will appear in due course in GARDENING ILLUSTRATED.

GARDEN WORK.

Conservatory.

There are plenty of cuttings now on Tree-Carnations, and if more stock is required, cuttings will root very readily soil on a stem-heat. I have seen them rooted very successfully in sand and water in flower-pot saucers placed on a fluo or hot-water pipe, water being added as it evaporated, the cuttings potted up as soon as roots were formed without waiting for them to heal. The first batch of Obrysanthemums will now be established in single pots, and will soon be ready for shifting into 5-inch pots. Where a few very fine flowers are required there will be no stopping, and therefore it is necessary that the plants be grown cool to keep them sturdy and dwarf, or, at least, not to run them up unmanageably tall. My plants are at present in a cool, light house, where the frost is only just kept out, and as room as it is safe to do so they will be moved into a cold frame, and ultimately be placed in an open situation in the open air. Cuttings may yet be taken for conservatory decoration and to supply out-bloom. Pot or prick off early-sown Cyclamens, and set a few of the best plants on one side to ripen seed. This is quite a necessary thing to do in the case of all florist flowers, such as Primulas, Cinerarias, Calceolarias, &c. Once set a good strain, and then begin a regular system of selection, and there will be no need to be dissatisfied. Hereafter to grow a lot of rubbish for the sake of the few good flowers which each packet may contain. The new large-flowered Canas are charming things for the conservatory and to move to the house. Seeds of Gray's new hybrids may be purchased at a reasonable price, and if soaked in warm water for 24 hours to soften the skins of the seeds they will quickly germinate to bottom-heat. When the seedlings go out of bloom, move the plants to a shade in a light, sunny position, and supply them with water till the growth begins to ripen, and then gradually dry off and leave them to get the bulbs thoroughly ripened. Cuttings of Double Patinias rooted now will make nice blooming plants during the coming summer. I once received a packet of seed which contained some very beautiful varieties, and seedlings make good plants for growing on in pots the following season. Another packet was obtained from the same firm, but there was no comparison with the first lot. Give liquid manure to Pelargoniums, and also to specimen plants. To do Pelargoniums well they must have a light position, with a moderate, but free, circulation of air. Ivy-leaved Pelargoniums make very useful specimens for the conservatory; baskets filled with strong plants now will be a charming feature during summer and autumn.

Stove.

Cuttings of winter-flowering soft-wooded plants will now be ready for potting off. The usefulness of this class of plants depends entirely upon being struck early and grown on rapidly during the spring and early summer months, the necessary ripening to be given in cold pits in August and September. During the growing season all strong shoots should have the points nipped out, and the plants should be shifted into larger pots as more root-space is required. To make up large specimens of such things as Begonias, Jussieias, Eranthis, &c., several plants may be placed in one pot, and the soil kept given see that a good stock of Benwardia is worth up; young shoots strike freely in brick bottom-heat. Purify the new white, is a good thing for the houseplant. Rearrange the plants frequently. As a rule, stove plants, at this season, are too much crowded, and a frequent change of position will be useful. Climbers will require frequent attention. Pergularia odoratissima is a very old thing, but it is worth growing in a good-sized house for the sake of the delightful perfume. Thin out and train or crowded growth everywhere. This is a good season to plant out in boxes, or otherwise, such plants as Euphorbia jasquiniflora, Polioctis pulcherrima, Gardenias, &c., to cover exposed bare walls to view, as there are plenty of suitable plants for furnishing bare spaces.

Unheated Greenhouse.

Canterbury Bells are very pretty ornaments in pots, and should be lifted and potted in autumn, and kept in cool-house all winter. Some of the Saxifrage, especially S. longifolia var. and S. pyramidalis, are as effective as most of the tender things grown. There there is the tuberous-rooted species, S. palmata fl.-pl., the white flowers of which are so charming in early spring. S. sermentosa also is a nice basket or vase-plant. Sedum carneum var. album is very useful for draping trellises, or a potting bench, and there along the stage is the striking effect; cuttings of them will strike freely now in heat. Very pretty too is the creeping Toed Flax (Lycaria cymbellaria) in a vase or basket, or to creep over rockwork, or to plant round the edges of tubs which contain Palms or other specimen plants.

Forcing-house.

Asalacs, both Indian and others, are still helped on in heat to keep up a succession of flowering plants. Roses will do better now in a lower temperature. The best place to bring up Rosee now is a stove or deep pit, filled with leaves, in which the pots are plunged, or the blooms, when they are developed, are cut, and the plants, as they root, are kept at the other Roses are past the flowering season, pruned so much young wood so can be spared, and set up into suitable lengths for cuttings; in bottom-heat scarcely one cutting will fall. Wherever it is possible a bit of old wood at the base will be an advantage to the future plant.

Cold Pits

will be valuable now. No one has too much pit room at this or any other season. The possession of cold pits which can be sheltered by mats or other coverings will enable us to find room for all used-up plants for the sake of servatory to rear-cut; it will also give an outlet to thin out the plants in the fruit and other houses by a gradual removal of the hardiest subjects that will bear the lower temperature. As soon as the bulbs, &c., which have flowered are properly hardened they may be planted out, and their place in the pits taken by other plants on their way to the open air.

Window Gardening.

In the outside boxes shrubs will now be more or less bushy in foliage, and should be removed and the boxes filled with spring flowers from the borders; the plants, being lifted with balls, will scarcely feel any check. Primroses, Alpine Auriculas, Wallflowers, Daisies, &c., will be effective and form a pleasant change till the season comes round for planting in the conservatory. Indorethers are plenty of bloomers, the most effective of which are bulbs, and among these Daffodils, single and double, are very conspicuous. These bulbs, after flowering, must be taken care of; the best thing to do is to plant them out in the border, and they may be lifted again on some future occasion. Dentula grandis is a very pretty white-flowered shrub at this season, but it would not be in flower thus early without some help; but it forces easily. All plants in pots will require more water now.

Outdoor Garden.

Hardy plants that were brought in last autumn to small pots, and which have been plunged in frames, may soon go out. All small, delicate things will be better if placed in the reserve bed for a year or two to get strong. The value of a reserve bed consists chiefly in the keeping new or delicate plants in some place where an eye can be kept on them. Very frequently, when small plants, which are generally small, are placed in the borders among old-established plants they have a habit of disappearing through being overgrown by plants of stronger habit. There are some hardy plants which are the better for annual transplanting. Most of the Perennial Sunflowers, Obrysanthemum maximum, Pyrethrum uliginosum, and other strong-growing things which flower towards the end of summer and autumn, if transplanted annually, will be better plants yet to be pulled to pieces and transplanted; but the work must not be delayed any longer if a full bloom is required. Laced Pinks should be planted in autumn; but I have often repented border Pinks, including Mrs. Sinkins, later than this. The roots are lifted and pulled to pieces, and the pieces planted deep enough to cover all naked stems, and the soil pressed very firmly round them. All the Dianthus family do best in firm soil. Carnations and Pansies which have been wintered under glass, will be better plants to root in now, and in a suitable condition. Dress the beds with soot, and give the last forking over at once. Poplars, Sunflowers, and other hardy annuals may be sown.

Fruit Garden.

The change in the weather will tend to keep fruit blossoms back, and be to their advantage. Precocious buds very often suffer from frost. Pruning and training, even of Peaches, should now be finished, as the buds are showing colour. In pruning Peaches guard against overcrowding, and when the bottom branches show signs of wasting out, open the other branches, and when the wood, near the bottom of the tree, is well furnished. If there may be a furnished wall anywhere, have it in the centre of the tree, as there it can be speedily covered. No two shoots should be trained nearer than 6 inches; if this rule was always observed there would be no naked space on the walls, the trees would be healthier, and there would be less trouble with insects, and there would be finer fruit, and the crop would be more in bulk and weight if not in number. Frost-proofing under glass, and holding in readiness now. If it is decided to use heavy coverings, they should be taken off every fine day. I have seen good results attend the use of a double thickness of old fishing-nets, when stretched out upon poles, and I should not be disposed to adopt anything of a more elaborate nature; but a temporary coping, if the coping on the wall does not protect far enough to throw off the wet, is very desirable. This may take the shape of a 9-inch board and may be fixed under the coping on the wall and supported by brackets. There is a great saving of labour in the use of fishing-nets for covering blossoms of fruit-trees, when put on they need not be removed for some time. They break the force of the cold winds without altogether stopping the circulation. Stop the young shoots of Figs under glass at the fifth leaf, and then cut where crowded.

Vegetable Garden.

Take advantage of every opportunity for getting in the crops when the land and the weather are suitable. Better a few days delay than committing the ground to the latter without any preparation. Potatoes may be planted from this to the middle of April, or later in some districts; change of seed occasionally has a beneficial effect upon the crop. As a rule, it is useless to plant the American varieties on wet, cold land—in point of fact, Potatoes will not prove a paying crop upon such land, no matter what sorts are planted; still, some kinds will do better than others. Two of the best Potatoes for strong, heavy yield are, I think, Myatt's Prolific and Imperator. Plant Jerusalem Artichokes in rows 3 feet apart, and 18 inches apart in the rows. In rather heavy land I have had the best results from laying the sets in rather shallow drills and drawing the earth over them from each side, so as to form a ridge. Those who care to try the Chinese Artichoke (Stachys tuberosa) may plant now in rows 2 feet apart, and 1 foot between the sets; cover about 4 inches deep. The tubers are not expensive. Cover all the remaining Beekete crops with blanching material; for blanching, or, if many of the sets are covered by covering 15 inches deep with O.K. leaves with a sprinkling of long litter on top to prevent the leaves blowing away. Nothing should be used for blanching that would be likely to impart an unpleasant flavour to the Kale. Sow main-crop of Celery, if not already done. A gentle hot-bed is the best place if many plants are required. If only a few plants are wanted a box of each kind may be sufficient. Sow Basil and Marjoram in heat, and bring in more roots of Mint for forcing. E. HOGAN.

Work in the Town Garden.

By the month of March the sun has gained so much power that even in the heart of the smokiest cities vegetation, and particularly such as is protected by covering of glass, begins to palpably respond to its influence and to breathe a new life. With few exceptions there is as yet plenty of time for sowing or planting in the open air; but in both these respects April is an unusually busy month, so that preparation should be pushed forward as

In cold or northern districts the operations referred to in "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equally good results.

rapidly as possible in the meantime. A few of the hardiest annuals, such as Cornflowers, annual *Oxyanthemums*, *Mignone*, &c., may be sown on a warm border; but the bulk had better be left until next month. Finish preparing the beds for *Cerations*, and get the plants set out as soon as the work can be performed properly. Borders or beds in which to plant out the perennials *Phloxes* (which succeed admirably in small towns and suburban districts, if not in the very noisiest places), *Pyrethrum* of the *P. roseum* variety, *Michaelmas Daisy*, *Oxyanthemum*, *Perennial Sunflowers*, and many other herbaceous subjects ought also to be prepared this month. Christmas roses, again, when increase is desired, should be divided and replanted in April, and for these also the beds should be got ready very shortly. Violets, unfortunately, never do much good in an even slightly smoky atmosphere, but where they succeed at all April is the right month to plant out the rooted runners of these also. Indoors this is a capital season for a general repotting in the greenhouse. Ferns of nearly all kinds are better repotted, or if necessary divided and replanted, when just starting into fresh growth than at any other time, and *Fuchsias*, "*Geraniums*" and indeed almost all other greenhouse subjects ought also to be partly shaken out and supplied with fresh soil and clean pots at about the present time. Finish potting off singly all the autumn struck "*Geraniums*" and others, and shift on a good batch of those now standing singly in 3-inch or 3½-inch pots into the 5-inch and 5½-inch sizes for early summer blooming. Give *Carnations* to be grown in pots their last shift. The 6-inch size will grow a moderate sized plant well, but the strongest should have 7-inch pots, or two may be grown in the 8-inch, or three plants in the 9-inch size. Let a

away. These plants, having filled their allotted space, have to be shortened back every year after blooming. I usually prune in April, and then pick off all late blooms. Large plants bear a very large number of flowers—of course, many are thinned in the bud state. Several old plants of *Luculia gratissima* have also been pruned rather hard back. I find this the best way of treating them, as they soon break and grow very freely. The faded and dead blooms of *Arum Lilies* are removed and the stem twisted out as soon as the flowers fade or the flowers out. If these old flower stems are not removed the new flowers beneath are longer in coming. Made up another Mushroom-bed in house and took in a fresh batch of *Seakale* roots. Potted more roots of *Chicory* for forcing and placed in Mushroom-house. Mushroom-beds in being have been watered with liquid-manure, and in addition a tablespoonful of salt has been dissolved in each large pot (2 gallons) of water. Sowed seeds of *Stocks*, *Asters*, *Zinnias*, and *Phlox Drummond*. Not much heat will be given, as they will come stronger without it, and will be quite early enough for planting out in May. Sowing main crop of *Celery*, the sorts being *Major Clarke* (red), and *Sulham Prize* (pink). The last named grows to a large size and keeps well through the winter. Flaced protection over *Apple* and *Peach* trees on walls. I have used nothing for some time beyond a few *Yew* branches thrust in among the blossoms, covered with fishing-nets, kept from the wall by poles fixed in the ground 3 feet from the wall at the bottom and secured beneath the coping at the top. Where *Yew* branches are not employed a double thickness of netting is used. I should not presume to lay down any hard-and-fast lines for others to follow, but I know that a good deal of money has in some cases been

TREES AND SHRUBS.

BEST SHRUBS FOR FORCING.

DOUBLE-FLOWERED CHINESE PLUM.

A BEAUTIFUL shrub is the Chinese Plum, the common *Prunus sinensis*, though the double variety of it (flora-pleno, here figured) is the most ornamental and the most generally grown. It is an early-flowering shrub, of slender growth, the flowers being small and white, and in the double sorts are like small rosettes, wreathing every twig with white. It is now often, and should be far more grown as a pot-plant for greenhouses in early spring, but being perfectly hardy it may also be planted in the open shrubbery with excellent effect. B.

FORCING LILACS.

Few deciduous shrubs respond to the quickening influence of heat more readily than the Lilac, and few are more beautiful or more generally appreciated. A great deal of the Lilac one sees in Covent-garden-market comes from France, where a speciality is made of forcing it, and although it is called white Lilac, it is in reality the purple variety forced in strong heat, and kept dark, either by forcing in dark sheds or cellars, or else in glass pits heavily shaded. I need hardly say that this sort of forcing spoils the bushes, at least, for some time, and I think that the great majority of people would prefer it forced in a more natural manner, so as to get the foliage of a healthy green. The principal thing to be said in favour of such unnatural flowers as these is that they sell, and fetch a good price. The kind of Lilac that will be found most serviceable to ordinary cultivators is to have healthy young bushes, planted out on a sunny border, where the young wood will get well ripened. As soon as the leaves drop in autumn the bushes should be carefully lifted, getting up all the roots possible. Set them into pots and fill with finely-sifted soil; water freely to settle the soil, and cover the pots with dry leaves until Christmas, when they should be placed under glass in the warmest house at command. Syringe the tops every day until the leaves expand and the bunches of bloom are visible, then keep dry, but water freely at the root, and both foliage and flowers will be fully equal to that on outdoor bushes in June, and the plants will do good service for several years. J. C., *Hants*.

3220.—*Clematis Jackmani*.—It is not too late to cut down a plant of this variety; indeed, those of the Jackmani type are really herbaceous—i.e., they die down to the base each season. If you have this *Clematis* true to name the young growth you mention will be breaking from near the bottom, and the wood above it will be found to be dead. The *Clematises* of this type grow very strongly, and flower upon wood made during the current season. When the growth has reached full length a flower-bud forms at the point, more forming and breaking out laterally from under every leaf throughout the whole length of such shoots.—P. U.

—The *Clematis* may be cut back to where a strong shoot is coming away. If there is a good shoot near the base cut there and make that the leader.—E. H.

3225.—*Grafting Rhododendrons*.—In a private garden, the best way is to put up seedlings of the common *R. ponticum* in the autumn or winter. The stems should be not less than ½ inch in diameter. Graft them in March, and place them in a garden-frame over a hot-bed; but the heat should be well-nigh spent, as a steaming heat would injure the plants. The grafts should be put on much the same as *Apple* and *Pear*-trees are whip-grafted.—J. D. E.

—This is hardly the work for anyone to undertake who has to ask for advice how to do it. I may, however, tell you that the better forms of *Rhododendrons* are grafted on the common variety named *potium*. In many nurseries the grafts are put on those stocks in the spring, they are then planted in deep boxes and placed in a warm, close house, where they remain until the season is suited to the stock, and the former has made some growth. The boxes are then taken to a partially shady place in the open, and in the following spring they are planted out.—J. C. C.



Double-flowered Chinese Plum (*Prunus sinensis* f. pl.).

batch of the best shrubby *Calceolarias* also have flowering-pots at once; prepare the ground for such as are to be planted out, digging it deeply and manuring well. These plants never do so well, especially in a light dry soil, as when planted out some time in April. *Auratum* and other *Lilies* in pots should be brought to the light when the young growth appears, and the stems be gradually earthed up with rich loam in a rather rough state as they advance. E. C. H.

THE COMING WEEK'S WORK.

Extracts from a garden diary from March 11th to March 18th.

Tied down and stopped Vines in the second house and thinned the shoots where too numerous. It is a mistake to leave on too many shoots; have them at least 12 inches apart on each side, and they should be at regular distances apart. When the growth is crowded, the leaves must be small, and everything depends upon having good foliage. *Muscats* should be fertilized with *Hamburg* pollen, and it is sometimes necessary to gather this and save it for future use, as in our case the *Muscats* are not yet in bloom. Sub-solent is gathered for the *Muscats* house by holding a sheet of paper under each bunch of *Hamburgs* when the pollen is ready for dispersion, and giving the bunch a good shake by tapping the wire; the paper is then held under the next bunch, and so on. I don't know how long pollen will keep in condition, but a considerable quantity long enough at any rate to fertilize blossoms during the coming season if kept quite dry. *Large Camellias* in the conservatory, planted in border, are still full of blossoms and buds. At the same time the young growth is breaking

spent in providing covers for blossoms on walls &c., with no better result than has been obtained by the fishing-nets and feathery *Yew* branches. Planted more *Peas*, also sowed *Veitch's Cauliflower*, and *Self-protecting Autumn Broccoli*, *Brussels Sprouts*, *Curled Kala*, &c. Planted out *Lettuces* raised under glass. Sowed more *Radishes* on warm border. Planted another pot with *Dwarf French Beans*. Put to cuttings of a large number of soft-wooded bedding plants and others. Potted off cuttings and pricked off seedlings of various things. Stirred soil among flowering plants in beds and borders. Sowed seeds of *Dracopa lodivica* and *Cyperus alternifolius* in heat.

3232.—*Trapa bicornis*.—This is not a bulb in any way; it is a seed. How do you imagine it could be "moulded and the bulb put inside?" The "outer horned shell" you speak of is as much a natural part of the seed as the shell of a nut. Recently there has been a good deal of fraud practised with this peculiar seed or nut. I saw a whole barrow-load hawked on the King's-road at Brighton, and described as the Chinese Lily Bulb; also as a grand climber, producing magnificent blooms of blue, red, yellow, and pink colours. The vendor claimed that it grew 6 feet long in a glass of ordinary water, and that each bloom produced two more buds, all within six weeks! The flower is really a very insignificant affair, and white. P. U.

ROSES.

SEASONABLE NOTES.

OUTDOOR ROSES.—This is a very busy month among outdoor, as well as among indoor Roses. The manure I advised their being mulched with may now be turned in. Care must be used in this operation. Roses are often dug between too deeply, and many of their more fibrous and feeding roots get injured. Those of the Hybrid Perpetual, China, Benksian, and Bourbon classes should be pruned this month. The Teas and Noisettes will be better left until the early part of April. In pruning, use a sharp knife in preference to a secateur, and always cut back to a healthy eye, and if possible, one having an outward tendency. For the purpose of these notes, I propose dividing Roses into three classes, according to their strength or habit of growth. There are the extra vigorous growers, like Gloire de Dijon, Maréchal Niel, and Mdlla. G. Lutzet. These need the long growths of last year to have their points cut out only; while the wood that flowered, and also any weakly or lateral growths, may be cut away entirely. If these long shoots can be trained or pegged in a somewhat horizontal position, they will break into growth and bloom more uniformly. Next we will take the varieties described as strong growers, but not extra vigorous: General Jacqueminot, John Hopper, Madame Lambert, and Anna Olivier may be taken as examples. These need cutting back to within 6 inches or 9 inches of the shoulder all good growths break from. Here, also, the weak lateral wood may be removed entirely; so, too, may some of the centre wood, especially if they be rather thick. Lastly must come the weak or moderate growers; some of these are very beautiful: Lady Mary Fitzwilliam, Etienne Levet, Horace Vernet, Comtesse de Nadailac, and Souvenir d'Elise Vardon, may be given as examples of this latter class. Prune these by cutting away the very weak growth first; then shorten back the remainder halfway. There is no longer any need for protecting material, so that the prunings and this can be removed together, and the whole left tidy.

INDOOR ROSES.—March should see many blooms upon plants that were started about Christmas. Up to the present we have not had a particularly good time for Roses under glass. They need much more sun than we have been favoured with; even light days, without sunshine, have not been plentiful. Consequently, the foliage does not attain that healthy colour and stoutness of structure so much appreciated. A few hours of sunshine after so much dull weather will soon cause young growth to droop. This need cause no alarm. Sun, at this period of the year, is frequently accompanied by harsh winds, and upon no account should air be admitted if the least draught is likely to be created. There is no more prevalent cause of mildew, and this disease is so much easier kept at bay than battled with when once it has gained a footing. You may temper the atmosphere, and aid the drooping shoots very much by giving a sprinkle of clear, soft water, at a temperature of 70 degs. A little water scattered over the walks and walls will also assist them, and render the sudden increase of light beneficial instead of distressing. Increase their water supply, and afford them liquid manure about three times a fortnight. A little manure-water scattered about now and again will help them wonderfully. As a rule, amateurs do not bear in mind sufficiently the great benefits accruing from a little ammonia in the atmosphere. The syringing, so recommended last month, must still be carried on regularly: it keeps the foliage clean and healthy, and also guards against the attacks of insects in the most effectual manner. Young plants that were grafted as per instructions in these pages will now need a second shift on into 5-inch or 6-inch pots. This should be their final shift during the present season. Make a point of having them securely fastened to a neat little stick, taking the precaution of tying them to it around the part where graft and stock unite. By potting them a trifle deeper this time, the junction of stock and Rose may be entirely covered. There is great advantage in this, as the union is rendered more complete by both being able to grow more uniformly when buried in the moist soil. Besides this, they are more

apt to go off upon their own roots, and thus form an additional means of support, while any dormant eyes upon the graft will be much more likely to throw up in the form of stout and useful suckers. P. U.

3614.—Climbing Rosess in a conservatory in the Isle of Wight.—There is nothing unusual in the behaviour of that part of the Rose growths that are trained to the wall. As I recently stated in GARDENING, Roses do not do so well under glass when the growth is nailed to walls as when it is trained under the roof, and your case proves that I am right. It is pretty clear to me that the shoots on the wall do not get ripened, which is the cause of the buds not starting into growth regularly. With regard to the Maréchal Niel, there is just a suspicion that "canker" has set in on some part of the stem, probably just under the surface soil. From the information you send it is evident that the growth of the Roses was not sufficiently ripened for such early forcing. The temperature during the day was, I expect, too high at first, so there is none of the Roses you mention, except Fortune's Yellow, but what can be had in flower early if they are properly prepared for it. If you want Roses so early you had better grow them in pots, or else be content with them six weeks later.—J. C. C.

3250.—Growing Rosess in pots.—When a beginner asks for instructions as to how to grow Roses in pots in a greenhouse, and is so ignorant of the details of their culture as "Ignoramus" appears to be, it is necessary to give very minute details, for on these success or failure hinges. For instance, one grower might succeed and another fail simply by the choice of position. If the plants were crowded on a stage at a considerable distance from the glass, they would not get enough air and light to make healthy growth. They should be placed somewhere near the roof-glass, well exposed to light and air. They should be pruned now, by cutting them well back, and when they have started to grow repeat them. Use for potting soil three-parts of good loam, one of leaf-mould, and one of decayed manure with some coarse sand. The plants in 5-inch pots should be planted in flower-pots 7 inches in diameter. After repotting they will grow with greater vigour, and will certainly flower this year. Tea Roses are all the better for a little fibrous brown post-soil mixed with the loam. If they are to be grown altogether as pot-Roses they must not be turned out of the pots at all, but after flowering should be placed in a sheltered position out-of-doors; but it is better not to turn them out before the middle of May. Tea-scented Roses are better to be kept under glass all the year round, but they must be kept in light airy houses, well ventilated. At all times keep the leaves free from green-fly and mildew. They do not require a very great supply of water.—J. D. E.

—The pots are rather small at present, but they are large enough if the plants have only recently been potted. If they are full of roots now they should be repotted very carefully into others two sizes larger. If they have long shoots you may reduce them one half in length, and the soil must be kept regularly moist. It is always best for inexperienced people to place their Roses growing in pots in the open air early in July. In no case should they be turned out of the pots, but they should be plunged to their rims in soil or coal-ashes.—J. C. C.

—It would have much simplified matters if you had given the names of the six Rosess. I could then have said what style of pruning they required. At present I do not know if they be climbers or not. Climbers should need no pruning at this time of year, being small plants just received from the grower. Other varieties may be pruned fairly hard, cutting back to a healthy-looking and prominent eye. You should certainly get blooms this season. As far as water goes, keep them uniformly moist throughout the whole ball of soil without making them saturated and sour. You ask a question which would need rather a long reply, so pray allow me to suggest that you watch the instructions given from time to time in GARDENING. At present I would not apply manure. You had much better wait until growth is active and give it then in a liquid state. Watch carefully

for insect pests, avoid draughts and sudden changes in the temperature, and for the next month do not hurry your plants in any way.—P. U.

3229.—Pruning Ross-trees.—I can only understand the query by supposing you mean that the stocks budded last year made a short maiden growth the same season. If such be the case, cut them back to the third or fourth eye. All stocks that were budded last year should be pruned back to the bud now. Take care to afford sufficient support to the young growths, to make sure that they get well connected with the stock, and steadied against wind and rain.—P. U.

—If your Rose-trees budded last year have made growth more than 6 inches long, they had better be cut back at once as you suggest, but if the shoots are only 2 inches or 3 inches long, and weak as well, they had better remain as they are.—J. C. C.

—Roses that were budded last year and made some growth should be cut hard back to within two or three buds at least.—E. H.

3253.—Rosess under glass.—You are quite correct in your surmise that the present wood upon your recently transplanted Roses will be of little service. I should prune them down rather hard, and endeavour to keep other plants from shading the young growths until they have advanced enough to over-top the staking you speak of; after which the growth would be getting sufficient light. It would only be the foregoing of the room that a few plants might occupy for a short time.—P. U.

3240.—Rosess and Clematis.—Yes, it is quite practicable to grow these two grand flowers together, and I do not know of a more satisfactory combination. The following is a good method to adopt. Use Clematises of the Jackmani type, and Roses that grow strong enough to be suitable for pegging down. You would not do much in trying to have both Clematis and Roses in full flower throughout the whole season, but they may be had in perfection alternately and with a few blooms of each between times. It is not too late to commence this season, but you would only succeed in getting the Clematis good during the coming summer. Plant strong growing Roses and Clematises alternately. I will suppose that your beds have been planted one season, so as to have the Roses established, and will not describe the routine of operations which I have found very simple and satisfactory. At the present time I shall prune my Roses, having already placed a good mulching of thoroughly rotten manure around them, pegging the Roses down in the usual manner, so often described in these pages. While the Roses are producing their main crop of flowers the Clematises are throwing up the long summer shoots that are a characteristic of the Jackmani type. These will commence blooming as soon as the Roses go off, and as they will have grown all among the Rose-wood that was pegged down, and which is now comparatively useless, a grand display of odour will follow upon that made by the Roses. In the meantime there will be many strong shoots growing from the base of your Rose plants, and this wood will be of service for flowering the following season. These two plants can be worked so nicely together. Late in the autumn, when both Rose and Clematis growth is dormant, the wood of the former, which has flowered, may be removed entirely. So, too, may that of the Clematises, neither being of any further service. The ground may be cleared, dug up, and manured. Both of them enjoy a rich soil, and the manure first applied may be dug in just previous to pruning and pegging down in the spring, afterwards adding another slight dressing. The class of Clematis I have recommended is very free flowering, and also dies down, more or less, to its base each season. As they produce suckers like growths annually, and these flower the best, it is very simple to grow these two grand subjects in one bed.—P. U.

3229.—Cannas from seeds.—If the seeds are soaked for twenty-four hours in warm water, and then sown in warm soil, and plunged in the hot-bed they will germinate quickly, and get large enough for planting out or potting on this season. If the seeds are sown without the warm-water treatment to soften the outer covering of the seeds, they will be a long time in germinating, and will not make very large plants, unless rushed in a strong heat.—E. H.

FERNS.

A BEAUTIFUL FERNERY.

This illustration appearing herewith represents a view in a fernery belonging to Mr. J. Halliwell, Lathrum House, Bury, Lancashire. On passing through the doorway of this fernery a scene presents itself which at once in imagination transfers the beholder to a lovely tropical district, such as is sometimes described by travellers who have seen Ferns revelling in their native homes. Entering the fernery, one looks upon a mass of sandstone rising tier above tier. From interstices and also from capacious pockets hang in graceful profusion lovely fronds of innumerable species and varieties of varied form and colour. The pathway winds in and out, gradually sinking lower and lower, while the rockwork rising on each side gives the appearance of the path having been hewn out of solid stone; here a mass projecting, there receding, and forming large receptacles in which the Ferns grow in wonderful health and vigour. Passing along this rocky foot-

number of young plants, others finely divided and cut; the noble Tree-Fern (*Alsophila excelsa*), *Microlepia platyphylla*, a rare species, but a splendid object; Gold and Silver Ferns, the lovely *Gymnogramma schizophylla gloriosa*, with its gracefully curved, finely-cut fronds, a picture of beauty; the Stag's-horn Ferns, the lace-like *Chellanthoe elegans*, with others of this genus; and *Pteris* without number. Every step that is taken brings to view species and varieties rare and beautiful, and seldom seen in private collections. One exceedingly beautiful Fern will be noticed in the illustration hanging gracefully over the rock—viz., *Adiantum concinnum*. This is indeed a lovely plant, such as is seldom seen. There is an absence here of the arches which so often appear in various fantastic designs in ferneries, and which very frequently spoil the effect, producing an unnatural appearance. In this fernery, while there is not the slightest trace of formality, the rockwork is so arranged that the Ferns and other plants growing at the bottom on the level of the footpath get an abundance of light. When the light is obscured by arches or the overhanging rocks



View in a fernery.

path, at the extreme end a very attractive feature is a stream of water, which, after running along a rocky channel for a short distance, comes tumbling and dashing over the rocks obstructing its course. Three parts of the way down a miniature lake is formed, from which the water again escapes and falls into a deeper and larger receptacle, which, judging by appearance, the water might have made by its incessant fall and flow during past ages; going a little further, the stream disappears, like some mysterious underground river, to appear in a different place and be put to further use. Turning and looking towards the now invisible entrance, completely blocked from view by a large projecting Fern-clad rock, the prospect is very beautiful. One very striking thing is the perfectly natural appearance presented by the luxuriant growth of the various Ferns, Selaginellas, and other plants; *Adiantums*, large and small-leaved, growing in masses in the large pockets, and peeping out of crannies and crevices; *Davallias* creeping here and there over and up the rocks, showing their peculiar brown and white foot; *Aspleniums* in abundance, some large and spreading, bearing

injudiciously placed, the plants below them, which ought to be as healthy and in as good condition, or better than anywhere else, because more in view, are weak and drawn, and detract from instead of add to the appearance of the fernery. The requirements of plants in the matter of light should always be provided for, and in Mr. Halliwell's Fern paradise they show a healthy vigorous condition, as a result of this and other natural surroundings and provisions.

In addition to the Ferns there are many Selaginellas planted, some upright in growth, others forming tiny carpets of green, golden, or silver verdure. *S. caesia arborea*, with its rambling stems and branches and beautiful metallic blue foliage, might be in some tropical forest, it is so thoroughly at home. *Ficus repens* and *F. minima* creep up the stones, hang over the rocks, and spread in all directions. *Tradescantias* and a few other suitable plants give additional variety in form and colour, and altogether serve to make up a scene of beauty.

This fernery was constructed and planted by Messrs. J. C. C. and J. Birkenhead, of the Fern Nursery, Sale.

HARDY FERNS

The beautiful illustration (see p. 671, Vol. XIV.) of the Oak Fern ought to remove any doubts as to the value of hardy Ferns for decorative purposes; but, unfortunately, the term "hardy" seems to often imply a very inferior kind of plant, and hardy Ferns are no exception to the rule, and this feeling prevailed up to a very recent date, of giving to any hardy plant very scant attention, and lavishing all the good things on the tender kind. Happily a change has at last come over the scene, and now we find hardy subjects much enquired after; and not only is the hardy plant department better looked after than ever, but there are genuine hardy plant nurseries devoted solely to the culture of such things springing up in all directions. Hardy Ferns are especially valuable plants for supplying foliage for mixing with cut flowers, the various *Polypodiums* mentioned on page 671 being exceedingly handsome; then there are many evergreen hardy Ferns, such as the Black Splice-wort, that are far more lasting than Maiden-hair, and are also excellent as pot plants for decoration. Many of the hardy evergreen Ferns, when grown in pots and sheltered in cold frames, are invaluable during winter for decoration, when it would be unsafe to venture the tender kinds. Large masses of Hart's-tongue when well grown are especially effective; but because they are hardy plants they should not be fully exposed to gales of wind and severe frosts, or they will be useless for decoration, as it must be remembered that Ferns in their native glens get much more shelter than pot plants get out in the ordinary frame ground do, and in pots the roots are especially liable to suffer from frost. J. G. H.

3249.—Grubs and Ferns.—It is utterly impossible for anybody to name a grub from so vague a description as "white with a small brown head;" it might be the larva of a beetle or a moth. If you have destroyed all you could find there are probably no more to be found, for caterpillars and maggots are not developed from germs, but from eggs; all the eggs producing your grubs were probably deposited at one sitting and hatched almost simultaneously. —A. G. BUTLER.

3252.—Growing Ferns.—I am inclined to think that your present trouble is imaginary. I can see nothing in the description of the house which you send to account for the discoloration of the fronds; and without seeing the plants I should say the discoloration is nothing more than what is natural to them, as the young fronds of many of the *Adiantums* and *Davallias* wear a bronzy colour when they first appear, assuming a greener shade as they get older. —J. C. C.

—The great thing is to maintain a constantly moist and sweet atmosphere and moderately warm temperature; 60 degs. to 70 degs. is a good range for most of the descriptions of Ferns mentioned. The browning of the young fronds may arise from an overdry atmosphere, but too much steam direct from the troughs on very hot water-pipes would also cause it by scalding. Put a good handful of the Brussels-chips into a gallon of water. —H. C. B.

3209.—Barbed wire fence.—No; you cannot compel your neighbour to remove his fence. If you cannot make some agreement with him the only thing you can do is to claim damages against him, in the event of your suffering damage. Your neighbour has every right to put up any fence he wishes, but if damages are caused thereby you can make him change it. However, I doubt your being able to claim any damages, as you have no animals to get lacerated in a market garden; in a field it would be different. I'm afraid you must "grin and bear it." —PADDY.

3201.—Boards by the side of beds.—These always have an artificial appearance, unless some edging can be planted which will in time hide the wood. I have tried various preparations to preserve wood in the ground; it always decays sooner where the wood is in contact with the surface. The best I have used is a mixture of pitch and tar in equal portions. Apply it boiling hot. Two coats are necessary; the first soaks into the wood, and the next applied, not very hot, forms a coat of glaze on the surface. —J. D. E.

—Original from a good dressing of tar would do, and I have always found the boards last as long with this material as with any other. —F. ILLINOIS AT URBANA-CHAMPAIGN

ORCHIDS.

DENDROBIUM FINDLAYANUM.

This is a fine plant, and one that seeds freely, I should imagine, in its native home, and it must be acknowledged to be the parent of some of the prettiest hybrids which have originated in our gardens at home. However, the flowers lack the odour of *Too Roses*, which is the prevailing characteristic in those which have originated from *D. heterocarpum*, another plant which would appear to seed freely at home as well as *D. Findlayanum*, which I infer it does from the great number of variations in the flowers of both species. Especially is this the case with the one now under consideration. This *Dendrobie* comes from the mountains between Burmah and Siam, but within the first-named country, and is another of the many species of the *Dendrobium* family which the land of Burmah has contributed for the decoration of our plant-houses. It is now about thirty-six years ago since this plant was first discovered, and about ten years later its flowers were first seen in a fresh state in this country. The many beautiful forms of it which have been seen since cause it to take a first place amongst the many fine species which bloom with us during the early spring months. It is a very distinct and well-marked plant in its habit of growth, the stems being much swollen at the joints, producing a singular appearance, and the somewhat ample leaves remain on the stems with the flowers, but they fall away afterwards. The blossoms are freely produced, mostly in pairs, and measure each some 3 inches across; the sepals and petals are white, tipped with rosy-purple. In some forms, however, the ground colour is of a light rosy-lilac, the large lip being yellow at the base. Outside this is a complete zone of white, and the lip is rosy-purple, the same as the ends of the sepals and petals. These remain a very long time in full beauty. This plant requires an abundance of light, air, and moisture, and thrives best when suspended from the roof in an open *hook-wood* basket. The East Indian house is the best place for it. The basket must be well drained, using for this purpose lumps of charcoal, because they are so much lighter than potsherds, and it may be understood that, in speaking of the drainage of hanging-baskets, I always mean this material. To avoid the asperity strain upon the roof, for soil, use the fibre of good brown peat and chopped *Sphagnum Moss* in about equal parts. During the growing season give an abundant supply of water, both to its roots and overhead from the syringe; but after growth is finished, it may be kept somewhat dry and cool. Treated thus, *Dendrobium Findlayanum* will be a great joy for the grower.

MATT. BRAMBLE.

ONCIDIUM PHALENOPSIS.

This is a lovely Orchid, flowers of which I sent me by "John Marshall," who says: "This epike is from a plant sold a few years ago as *O. oucullatum*, but its colour is as very different." Yes, that may be so, but still colour is not a thing that one can make any specific distinction from; but here I do see a distinction. Although many class this as a variety of *O. oucullatum*, I must incline to the side of Prof. Reichenbach, who made a distinct species of it, for I observe that the narrow part of the lip is very different in the true *O. Phalenopsis*, and the shape of the front lobe is also very different to that of *O. oucullatum*. Moreover, I am inclined to think that the majority of the plants in English collections bearing the name of *O. Phalenopsis* are really and truly the *O. nubigenum* of Lindley, which I also consider to be a distinct species; but the flowers sent by "J. M." are the true form of *O. Phalenopsis* introduced by M. Linden, of Brussels, about twenty-five years ago, and it is at once a marvellous beauty, and one that grows well in a very cool temperature. What elevation this particular plant comes from I cannot say, but the typical plant does not appear to grow lower than about 8,000 feet altitude, thriving up to 11,000 feet or even more. When at the extremes it becomes quite alpine in its habit and appearance. The spike of bloom of this plant bears some five to seven flowers, more frequently less; the sepals and petals which are nearly equal in size have a ground colour of creamy white,

transversely marked with somewhat spotted bars with rich purple or crimson; the lip is large, two-lobed in front, white, the base spotted with numerous large dots of purplish-crimson, and a crest of rich yellow. The flowers last so long in perfection that they are very apt to weaken the plant if they are not removed. These plants I like best to grow upon a block of wood, putting a very small piece of *Sphagnum Moss* with them, because as the plants of this species grow naturally on trees and rock, they have nothing to encumber or lie about their roots. I prefer these plants to be kept in the *Odontoglossum-house*, although some growers do go in for greater warmth, and put them at the cool end of the *Cattleya-house*; but though they may do well for a year or two they soon die off. The plants should have exposure to the light, but carefully preserved from the sunshine, and in addition they like to be always moist, no drying season being necessary for them.

MATT. BRAMBLE.

SACCOLABIUM GIGANTEUM.

THIS is a beautiful species which I am asked to write a few words about by "Hugh McLaren." I am glad at any time to hear any one of my readers asking for some hints as to the cultivation of these much neglected warm-house plants, which were quite upset, upon home growers waking up to the knowledge that *Odontoglossum*, and other things from South America and Mexico, could be grown at home without the application of fire-heat for at least six months in year. People then went fairly mad, got rid of their collections of East Indian Orchids, and went in for cool-house plants from the Western Hemisphere, quite ignoring the fact that there are plenty of plants in the East that no mountain residents, and that an elevation of several thousand feet in the East has as much an effect in reducing the temperature as it has in the West, and that there are many temperate plants natives of the East Indies, and these can be grown cheek by jowl with the Western ones; but the present plant is a warm-house one. I first saw the plant in flower at Furham Castle some thirty years ago, and since then I have seen many fine specimens in the various collections through the three kingdoms, Mr. Turner's, at Fendlebury, being one, Dr. Ainsworth's, at Lower Broughton, Mr. Turner, of Leicester, Mr. Dawson, of Meadow Bank, and Mr. Day, of Tottenham, all being conspicuous for the very fine specimens of this and many other species of the genus *Saccolabium*. *S. giganteum* is a plant that usually flowers in the autumn and through the winter months, and last week only I had a fine truss which was brought in by a friend, its delicious fragrance pervading the whole room. It is an erect growing plant, but never attains much height under cultivation, or perhaps we have never kept it growing long enough to prove what it would be. Its leaves are broadly strap-shaped, sheathing at the base, thick and fleshy in texture, about 1 foot long, and rich-green in colour, having streaks of lighter green running from base to the point. The spike varies from 9 inches to a foot or more in length, the flowers being thickly set, small but numerous, waxy-white, much spotted with violet-mauve, the lip being rich-purple, and terminating in a short spur, and being deliciously fragrant. A pure-white form I have before me now at the present time, which, although very beautiful, is not so fascinating to the amateur as the typical plant, whilst we have in the variety *ilustrate*, discovered by Mr. Linden, a plant more richly coloured than the typical plant. This species thrives best in a hanging-basket in the East Indian-house, where the thermometer never falls below 60 degs. or 65 degs. The basket should be well drained, and for soil use living *Sphagnum Moss* entirely. Give the plants full exposure to light, and shade from the burning rays of the sun, keeping them well supplied with moisture in the air and water to the roots.

MATT. BRAMBLE.

3222.—Hot bed.—Long litter which has been used for bedding will do for mixing with short manure, but dry straw which has not been used is not of much value for hot-bed making. Manure just as it comes from the stable, where straw has been used for litter, is best, and if quite fresh it must be fermented before

being used to make a hot-bed. The proper treatment has often been given in *GARDENING* and consists in chinking it to pieces and throwing it up in a heap, leaving it for a few days to get warm; then turn it over and intermix by throwing the outside of the hoop into the centre and bringing the manure from the centre to the outside, thus exposing all to the purifying influence of heat. This turning and intermixing may have to be repeated if the manure is very fresh. When loaves can be obtained to mix with the manure, once turning will be sufficient, but there is no substitute for leaves that will carry on a lasting heat; but stable-manure, properly fermented, will do very well, and many people have nothing else to make the hot-beds with.—E. H.

HOUSE & WINDOW GARDENING.

TUBEROUS BEGONIAS FOR A WINDOW.

THE time is now at hand that these charming plants may be started, and as they are excellent window-plants, no time should be lost in procuring the tubers. For window work it is very desirable to have plants of a neat, dwarf habit—i.e., such as do not grow tall and lanky, but bring plenty of blossoms on short, branched stems. The more ordinary kinds of *Tuberous Begonias* grow nearly 18 inches in height before the blooms appear, while the best varieties are a mass of bloom before they are a foot high. Tastes differ as to whether double or single-flowered *Begonias* are most to be admired; a few of each kind may be chosen from the lists of a good *Begonia* grower, and also a few of the semi-double varieties, which are specially adapted for window-boxes or hanging-baskets. Having selected the tubers, they should be potted in thumb-pots, allowing half of the tuber to appear above the soil, which must be light and sandy. The only danger the tubers are in at this stage, if kept free from frost, is from damp, and they should not be constantly watered, the soil being only kept just moist, but not wet. Before long small sprouts, not unlike those which are seen on Potatoes, will appear, and when these have grown sufficiently to have roots, the tubers may be given their first shift into the next sized pots, with slightly richer compost. A bag of special *Begonia* compost can be obtained by post with the tubers, which saves the amateur much trouble and difficulty; but in the earlier stages spent soil or sand should be added to the compost, which may be given stronger at each potting. A sunny window, where draughts are not allowed, will grow *Begonias* well, if they are never allowed to become pot-bound and given a shift before the pot is full of roots, with plenty of water daily, though not in a saucer. In some cases they give trouble by dropping their buds just before they open; this is usually to be traced to some sudden draught of cold air—perhaps given in the morning when the room is swept—or to the fact that they have been allowed to become too dry, and then have been soaked with water. Care in these little matters will be well rewarded, and *Begonias* will accommodate themselves to more positions if well treated. They should be carefully hardened to the open air if intended for borders, window-boxes, or balcony work, and may be placed out-of-doors entirely after the end of May, when they will become very strong and vigorous. They prefer slight shade, however, after this date to a very hot situation, and need a good mulch of *Coccoa-nut-fibre* or *Moss* to protect the surface-roots, on which their well-doing largely depends, if placed in the full summer sunshine. I. L. R.

3207.—Manure for *Begonias*.—You need not indulge in fertilisers in the case of the ordinary bedding *Begonias*. The great point is to get the soil well worked, and, if heavy, made light by incorporating with it a fair proportion of leaf-soil, or old *Mushroom-bed* manure, if you cannot readily get the leaf-mould. It is a good plan to cover the surface of the base with *Coccoa-nut-fibre* refuse, and during the summer keep the soil moderately moist. *Begonias* like moisture. A soil in which there is some amount of peat is very beneficial. As you appear from your signature to be quite a beginner in the culture of the *Begonia*, look through recent numbers of *GARDENING*; several notes have appeared upon the subject.—C. T.

WHITE BELL-FLOWERS (CAMPANULA).

BELL-FLOWERS of all kinds and colours are always most welcome in the garden, and the white ones especially so, being valuable for cutting or growing in pots. Of late years the White Bell-flowers have become very and deservedly popular as market plants, the single flowers being "mounted" and used in many ways in bouquets, sprays, and button-holes, &c. The accompanying illustration shows a good type of White Bell-flower.

3247.—Water Lilies from seed.—These are not difficult to raise from seed, but in their young state they need care and much attention. It is quite possible to flower them the same year if the plants are raised early. I have flowered the charming little Siberian species, *N. pygmaea*, within six months of its germination. I should say sow them as soon as you can get them. Treat them as regards preparation of soil and sowing as you would ordinary seed, but afterwards immerse the pot in some receptacle that holds water, having just sufficient to cover the top of the pot to the depth of about 1 inch. If the seed is gathered and sown in late autumn the young plants will not appear till early the following year. It can be kept, however, if convenient, and sown in spring, as I believe it retains its vitality for a considerable time. At any rate, I had a very successful lot of young plants that were raised from seed gathered in Africa, and it was some months old before it was given to me. After the young plants have made two or three leaves they should be potted off singly in small pots and again immersed, slightly increasing the depth of water, and continuing to do so as they grow in vigour. As regards planting them—I assume the quietest means in the open, in pond or lake—there is no season better than the month of May, as then the plants have the year before them, and if they are fairly strong they will soon make progress and flower. In the latter part of the month of May, 1891, I planted nearly forty plants of all the best kinds. I did not expect to see many flowers that year, but the first opened on July 4th, and every kind proceeded some before that month was out, and they continued on till late in autumn; also ripening seed which was sown when gathered, and germinated the following spring. As to how planting must be managed one has to be guided by the conditions. If the pond was a natural one, and had a rich deposit of mud, the plants might be planted in open wicker baskets and sunk where they were required to grow. Old baskets would do, as they would the more readily permit of the roots finding their way through and rooting into the mud. On the other hand, if the pond has no natural deposit, and it is so arranged that the water can be drained off, it should be done, and then a mound of soil could be made for each plant. In my case the pond was an artificial one, made first with asphalt, and then, owing to leakage, puddled with clay, whilst, worse still, the clay was full of Sedges and Typha, two weeds that Water Lilies can hardly hold their own against, and the problem was how to give the Lilies good soil, yet isolate them from devouring weeds. We overcame the difficulty by making for each plant a concrete box 4 feet square and 18 inches deep. It was a great expense, but the necessities of the case demanded it. I hope "Pay de Galie" will have no such great difficulty. In conclusion, I might add that Water Lilies are now most delightful and varied, some of the newer varieties having flowers 5 inches to 7 inches across, and of most lovely tints in white, flesh, pink, and yellow. I am sure many readers of GARDENING would like to grow them, and as doubtless many have the means, whilst the best planting season will soon be here, I will shortly contribute an article upon them describing the best. I should add for that about a foot of water stood over the crown of the plants. Summer's evaporation reduced it once to less than half that amount,

but the plants kept flowering, and I believe it is a fact that some of the newer hybrids do not require nearly such a depth of water as some of the old species.—A. H.

—They can be grown from seed, and if the seed could be sown early in the year the plants produced therefrom would flower the same season. It is not usual to raise them from seed. They are planted from divided clumps. Plant them now just before they begin to grow. The way I do is to fill a large round basket with loam and decayed manure. Plant in this, and sink the basket in the water, the crowns of the plants should be a foot under the water. If the water is run off they may be planted in the soil at the same depth.—J. D. E.

3109.—A rare Grass.—The Grass, *Pennisetum arenaria*, is not rare, as it is distributed on European shores, even to North Africa, growing in the dunes and sand-hills by the sea. The flowers are produced in July, and the root-stock is creeping, like Couch, thus binding the sand, for which purpose it is planted. In Carpenter's "Vegetable Physiology," it is mentioned this creeping atom, so troublesome to the Couch Grass, is of great service to man in the Grass called the Sand Reed, *Pennisetum arenaria* (bot, I

used for the conservatory. There is also a variety called *medio-picta*, which is distinct from *A. variegata*, the centre of the leaf being of a golden yellow colour, and the margin green. *A. celaniana*, *A. pilifera*, *A. Shawii*, and one called *A. Victoris Regina* may be also recommended. The last mentioned is very distinct and compact, the leaves striped with white. It is by no means uninteresting or devoid of colour.—C. T.

3163.—Carnations bursting.—The trouble you speak of arises, unfortunately, not from the weather, but is characteristic of the varieties. They are what is known as "pod hursters." Bot *Cermania*, as far as I have seen and grown it, is not so bad as the others. Exhibitors have a little india-rubber ring to place round the calyx of those flowers that are likely to burst, or a piece of thin bass answers the same purpose. It is usually in the wet seasons that the flowers burst badly. Raisers of Carnations are ever striving to get varieties that keep the flowers intact, not bursting at all. A good garden Carnation should not split its flowers, but hold them well up on sturdy stems. There is no reason why the plants should not bloom well in the coming season, but on no account overdose with liquid-manure. It is not needful. Beautiful beds of Carnations I have seen without any of this kind of treatment.—C. T.

3254.—Carnations for market.—These are largely grown by a friend of mine, whose work and results I have many opportunities of seeing. His plants are grown in a house with a three-quarter span, and many of his plants are so large that it takes two men to carry them from the house to the open air. The best plan will be to buy plants at once, and as they do better in large pots than small ones, I would put three in a 10-inch pot, and pick off all the flower buds this year. The plants should be grown in the open air until the end of September, when they should be taken to the greenhouse for the winter. My friend takes his plants from the house about the middle of July and stands them on a gravel walk exposed to all the sun, where they only get just water enough to keep them alive. Any repotting is done when they are taken under glass in the autumn. A temperature of 50 degs. by fire-heat is as much as they can bear up to the middle of March, and then they must have plenty of air in suitable weather. During the months of April and May the house is closed early of an afternoon when the sun is bright, the thermometer often running up to 85 degs.—J. C. C.

—The form of house does not signify a great deal, but if a choice can be made I would choose the span-roofed form, running north and south. The only way to produce them in quantities for the market is to grow the plants well. It would be cheaper to purchase young stock now, and grow the plants on until they were ready for layering. The size of flower-pots must be determined by the size of the plants. Large specimens producing many flowers I have seen growing in 10-inch and 11-inch pots. Young plants a year old might be grown and flowered in 8-inch and 9-inch pots, while 7-inch would be quite large enough for last year's layers. As to the time for repotting Carnations or any other plants, an experienced cultivator can tell by the state of the roots. He waits until the flower-pots in which the plants are growing are inefficiently filled with roots, but not so much as to be what gardeners term pot-bound. My Malmesdon Carnation layers are potted early, sometimes before the middle of September. I plant a single layer in a large sixty-sized flower-pot, and they are ready to repot into 7-inch early in February. The same plants will need a 9-inch or 10-inch flower-pot next year; small ones may take an 8-inch only, but if all the layers are taken off the old stool will not be worth keeping.—J. D. E.

3133.—Violets for autumn and winter.—I wish "Constant Reader" to try the *Bine Neapolitan Violet* again. I suppose his plants are in the frame, planted out. Take the young-growth in April, with root, too, and plant 1 foot apart, and in leaf-mould 1 foot to



OUR READERS' ILLUSTRATIONS: A White Bell-flower (Campanula). Engraved for GARDENING ILLUSTRATED from a photograph sent by Mr. R. A. Bradley, Alderley Edge, Cheshire.

may remark, that it is also known as Warren Grass), which can vegetate amidst dry and drifting sand, and hence is employed to give firmness to embankments. Such Grasses do not increase so much by seeds as by the multiplication of buds; cattle will not eat them, and hence they are providentially adapted to escape that mode of destruction, but when they have been uprooted through thoughtlessness or ignorance the most serious evils have arisen. It is interesting to note that large tracts of nice fertile country have been rendered barren by the encroachment of sand hills, and this encroachment resulted from the destruction of such mat Grasses as the Sand Reed, which were pulled up by the country people for fuel to such an extent that an Act of Parliament was passed about 100 years ago, rendering it punishable to do so.—C. T.

3227.—Agaves.—The so-called American Aloe (*Agave americana*), is one of the best, and also the variegated variety, especially when small. I saw lately a quantity of it in a nursery, the plants in smallish pots, and noticed their usefulness and brightness. Both are excellent to adorn the garden terraces especially, and for this purpose are grown in large pots in which they may be plunged in the ground. They may be taken in during the winter and

2 feet deep under a south wall, or where it is shaded, and water when dry, and when they have made young crowns, peg them down, five or six of them, and take off all runners after that time, and take them up in September and pot them in 32-sized pots; put the old crown in centre, and the young ones round side; use all leaf-mould riddle for potting, and put them in a frame where they will get all the sun in winter, and close to glass when lights are on, and protecting from the frost with whatever you have got—coll put at the side will do—and you will have plenty of Violets.—W. R.

INDOOR PLANTS.

ARISTOLOCHIAS.

I AM asked to name some family of plants that will grow well in a rather large stove, plants that will grow and flower freely, and have a distinct and tropical effect? Now I do not know a genus that has a more quaint and majestic appearance than the present one now under consideration; but they require a warm tropical temperature to grow them successfully, for they do not develop their charms in anything like such a marked degree in a cool stove. These charms are, however, somewhat handicapped by the strong and unpleasant odour emitted by the flowers of most of the species, but which is not perceptible when the plants are upon the roof of what my correspondent calls a rather large stove; of course, the stove is not to be covered with these plants entirely, for there are plenty of such things as *Bignonia*, *Bougainvilleas*, *Clerodendrons*, *Dipladenias*, *Passifloras*, and many others which will do equally well and flower profusely if used alternately with them; but now I am about to recommend some of the numerous family of the *Aristolochias* or Birth-worts as they are called. One species appears to be a native of Britain; although modern authors say it is not indigenous, yet the older writers make no doubt about its being a native plant. This is the *A. Clematites*, which is an upright growing shrub, growing about 3 feet high, having dark-green heart-shaped leaves some 3 or 4 inches across. The flowers are crowded, but they are not showy; still, it is a nice plant to have in the border; whilst *A. Sipho*, a large-leaved American species, is frequently to be found in gardens, where it is useful and ornamental as a deciduous climber. However, we must now turn to the stove climbers of strong growth. Amongst these I would recommend *A. ornithocphala*, which is a sturdy plant which will be found specially suitable to my enquirer, and it makes an invaluable plant for covering a pillar or rafter, the leaves being large, measuring some 8 inches or 9 inches across, heart-shaped, and deep-green. The flowers are curiously shaped, the tube being white or creamy-white, streaked and veined with deep purplish-brown; beside this, it has a large two-lobed appendage, something resembling a wattle, which is white, beautifully veined with reddish-purple. *A. labiosa* is another plant, with more uniform leaves, and with a similar but smaller flower; whilst *A. gigas*, by some called *grandiflora*, has long heart-shaped leaves, has large flowers having a ground colour of creamy-yellow, mottled, and blotched with deep-purple; it has a long toil in front. I will say nothing of the gigantic-flowered kind from Western Africa called *Goldiana*, which has a tri-lobed bloom which measures 2 feet or more across, but will here confine my remarks to a few of the smaller-flowered kinds, which may be grown by anyone having a small stove, in which they form very beautiful ornaments, and I really do not think a prettier plant could be found than *A. elegans*. This is a plant that was introduced to our gardens some few years ago by Mr. Bull, of Chelsea; it is a slender climbing plant, having ovate or heart-shaped leaves, which are slightly glaucous beneath, pale-green above, the flowers borne upon a long, slender stalk; the tube is suddenly bent upwards, and forms a cup-shaped limb some 2 inches across; the ground colour is creamy-white, having a rich, golden-yellow eye, round which is a rich, dark, velvety zone, and beyond this is much-branched markings of dark purplish-brown. These flowers are quite destitute of the strong odour usually found more or less in all the *Aristolochias*. *A. Duchartrei* is a somewhat similar flower, but the plant is very different; it is a climber, but the flowers are pro-

duced upon the old wood, having the usual bent tube and spreading cup-shaped limb, with a creamy-white eye, which is the ground colour of the flower, beautifully and regularly modelled with velvety blackish-purple. This plant is better named *Ruiziana*. I am told it was introduced by M. Linden from the Amazon. *A. tricaudata* is not a climber, and it has oblong leaves of a deep-green; it produces single flowers from the lower joints; those have the bent tube so peculiar to this genus, which develops into a wide limb, which is of a very deep-red or dark-purple. It is trilobed, these lobes being some 4 inches long; it also is quite destitute of any odour. There are many other of the small-flowered kinds exceedingly interesting and beautiful; but I think I will draw this to a close by noticing just one more species, and that is the farical plant called *A. ridicula*, which has a head and pair of ears which stand up and correspond with the head of a mule in its various phases of temper; it has creamy-white and purple markings. For the strong-growing climber it is much the best system to have them planted out, confining the roots somewhat by a bricked-up partition. Drain this well, and the soil best suited to them is a mixture of good turfy loam and brown peat in about equal proportions, the whole to be made fairly sady. The latter and small growing kinds may be grown in good sized pots, and they will flower freely, and after a time a surfacing of loam mixed with sheep's-manure will be found a great restorer. Nothing more is necessary, saving an abundant supply of water from the syringe to keep down red-spider and thrips, and also to their roots during the growing season. During winter they may be kept rather short of moisture with advantage. J. J.

3212.—Greenhouse flue.—Yes, you can do as you propose and heat the pit at the same time as the hooc if you use a damper in the way you propose; but the flue in the pit must be on the same level as the old one, and the chimney nearly, if not quite, the same height. With having the flue on the same level and the new chimney the same height as the old one, you may possibly be able to heat both the house and pit at the same time without using the damper; but I cannot say if the heat would divide itself in this way. I should be glad if you would try and kindly let me know the result. I know that the heat will return on nearly the same level, and even dip down under a doorway if the chimney is high enough; but to provide the possibility for the heat to divide at a certain point is an idea quite new to me.—J. C. C.

2356.—Plants on the back wall of a vinery.—You say that the house is cold in winter. If by that you mean it is not heated in frosty weather you must not plant anything that is tender, and although the *Lapageria* is nearly hardy it is doubtful if it would live through a severe winter in such a position. All the other plants you mention will answer your purpose, and if the house is not heated in frosty weather I advise you to plant the *Passion-flower* *Constance Elliott* in the place of the *Lapageria*.—J. C. C.

—The house being quite cold in winter will limit the selection, but *Marchal Niel* and other *Roses* will do well. *Passiflora Constance Elliott* and the *Lapageria* might do, though it is just possible the house might be too hot in summer for the *Lapageria*. *Fuchsias* would probably get out down with frost in winter, but if the roots were protected, they would break strongly from the bottom. *Camellias* would succeed.—E. H.

—For such a position there are no plants to equal *Camellias*, *Oranges*, *Lemons*, and others of the *Citrus* family. The shade of the vines overhead does not suit *Roses*, and the heat in summer will be too great for *Lapagerias*. *Laquila grandiflora* would do well if it could have heat in the winter, but under the circumstances I should plant *Camellias* almost exclusively.—B. O. R.

3184.—Culture of *Cyperus alternifolius*.—This plant is very easily managed, the chief points being a well drained porous soil, plenty of moisture both at the root and in the atmosphere, and a generally warm temperature. Seedlings grow well in a mixture of peat, loam, leaf-mould, and sand, sifted rather fine on the surface and well drained. If they come up thickly, prick them off 1½ inches apart, in boxes; but if tolerably strong, they may be transferred directly to thumb-pots. Shift them on subsequently as required. Shade from bright sunshine must be given at all times.—B. O. R.

—This plant is easily grown either from seeds or by division of the plants. There is a

variety with variegated leaves; the stems and leaves are streaked with white. They are excellent window plants, and are grown in thousands by the market gardeners. The green-leaved variety is generally raised from seed, sown in pans of good potting-soil, sandy loam, and leaf-mould. The seed vegetates in a little heat, and the plants certainly do best when grown on in a moderate hot-house. Prick the young plants out into pans, and ultimately pot them off singly into flower-pots.—J. D. E.

3238.—Carnation cuttings.—Plant out the cuttings if well established in a properly prepared bed, made up of good loamy soil mixed with a little wood-ashes, or similar material. Take care of wireworms, and it is not wise to plant, for instance, on quite fresh ground, as we have seen splendid stocks of Carnations succumb to this insidious pest. Wireworms seem to have a special liking for the fragrant flower. You cannot expect great things from the plants this year, but if all goes well they will be healthy examples next season. From what, however, I can judge, the cuttings have still to be struck. Get them in at once, inserting round the sides of 5-inch pots, plant with a light soil and well crooked, give them a gentle bottom-heat, and when rooted pot off.—C. T.

—It is late now for these, unless they are of the tree varieties, when they will come in nicely for flowering next winter, and cuttings rooted now could not be expected to bloom this year to any extent, if at all.—B. O. R.

3224.—Primulas for spring.—A good strain of the Chinese *Primulas* (*Primula sinensis*) sown towards the end of April will bloom in spring (for winter blooming sown now). *Primula obconica* sown now will commence blooming in autumn, and flower all winter and spring in a warm greenhouse. The plant has a bad reputation, though I have never met with it, and imagine it is not common.—E. H.

—I presume you mean Chinese *Primula*, and you may sow seed in the early autumn, say August, reckoning about six months with proper treatment from the time of sowing the seed until the plants bloom. You will find information upon the treatment of the plants after sowing in *GARDENING*, Feb. 25, p. 741, and March 4, p. 112.—C. T.

3246.—An Azalea shedding its buds.—It is not so usual for *Azaleas* to shed their buds as it is for *Camellias*; but *Azaleas* will do it if they receive a very serious check to their development. Some persons keep their plants far too dry at the roots in winter, and as the compost in which they are grown usually consists of sandy peat, over-dryness is more injurious, owing to the difficulty to thoroughly wet such soil; and the fine and very numerous hair-like roots of the plants are killed. Water applied too freely thereafter does more harm than good, causing a check which will often cause the flower-buds to drop off. The Indian *Azalea* is even more hardy than "*Geraniums*," as far as injury from frost is concerned; but exposure to a continuous cold draught of air would injure the *Azalea* first, and cause both buds and leaves to drop off. I would put down the cause either to sudden checks from the plants being exposed in cold draughts, or from careless watering.—J. D. E.

3233.—Primulas from seed.—If you can get the seed ripe by the beginning of next August, and it is sown at that time, the plants should flower in the following spring; but in a general way the seeds do not get ripe early enough to produce flowering plants the same year. By fertilizing the flowers of *Primulas* a greater number of seed is produced. You may, however, get a few seeds if you place the plants at once on a light, airy shelf in the greenhouse. I have known the plants ripen seed without being fertilised in a sunny window, and I have seen hundreds of plants at the Lanport nurseries placed out-of-doors in the month of May, with only a canvas awning suspended over them, with a good number of seed-pods on each plant. In this case the insects did the fertilising part of the business gratis.—J. C. C.

—The seed seldom ripens before July, and then, even if sown immediately, the plants are too backward for anything but late spring flowering. By pushing the seedlings on briskly I have had good plants in time to save seed from again the following spring, but as a rule the seed sown in this summer, is kept over until the following spring. *Primulas* do not set well before March at the earliest, so that for this

purpose it is no use to have them too forward. The flowers must be fertilized on all bright days with a camel-hair brush, or there will be little or no seed, especially on the choicer varieties, and the plants ought to stand on a shelf near the glass in a sunny and moderately warm structure.—B. C. R.

— Seeds of *Primula* in blossom now will be ripe in time for sowing to bloom next spring. I have plants in bloom now the seeds of which were taken from plants in blossom later than this last year. You will get more seed if you fertilize with the camel's-hair pencil. Do it about midday, when the pollen is dry.—E. H.

— The seed of the *Primula sinensis*, (the Chinese *Primula*), saved this year, will be ready in time to sow and produce flowering plants for next season. The seed is produced sometimes without any attempt at fertilization artificially, but if the flowers are artificially fertilized the amount of seed obtained will be largely increased. Sow the seed as soon as it is ripe.—J. D. E.

GREENHOUSE RHODODENDRONS.

The kinds of *Rhododendron* that will thrive under greenhouse treatment are now numerous. Among them are several species, such as the magnificent *R. Nuttalli* from Booten, which attains a height of 20 feet or 30 feet, *R. Gibsoni*, a compact bushy-habited sort from Khosaea, *R. arboreum*, from Nepal, *R. Dalhousianaum*, from the Himalaya, *R. jasmini-*

plants altogether under glass for two years, giving ordinary greenhouse treatment, after the grafts have got a good start in the warmth already advised; this is requisite to get them on in size. Afterwards they will be better out-of-doors in the summer. They do best in good turfy peat, to which add some sand. Large-growing kinds like *R. Nuttalli*, as they get big enough to require it, must have large boxes or tubs to grow in, or better still, be planted out.

INSECTS.—*Rhododendrons* are not much subject to the attacks of insects, but, grown under glass, they frequently get affected with scale or mealy-bug, for which syringe freely with water and sponge with soap and water.

The undermentioned are desirable sorts: *R. Countess of Haddington* (blush-white), *R. Countess of Sefton* (white and rose), *R. Dennisoni* (white and lemon, very fragrant), *R. Duchess of Edinburgh* (bright orange-scarlet), *R. Duchess of Sutherland* (white, flowers fringed), *R. Duchess of Teak* (yellow, tinted with scarlet and rose), *R. Lady Skelmersdale* (pure-white), *R. Maiden's Blush* (blush-white), *R. Pink Beauty* (white and pink), *R. Princess Alexandra* (pure waxy-white), *R. Princess Alice* (white, tinged with pink, fragrant), *R. Princess Royal* (rose colour), *R. Prince of Wales* (orange-red), *R. Purity* (pure white, very fragrant), *R.*

is dry, water before sowing the seed, then cover each pot with a square of glass large enough to keep the seeds quite close, and set in a sunny window every morning. Reverse the glass so as to bring the damp side to dry. Whenever water is required, dip the pot up nearly to the rim in a pail of tepid water, and as soon as the plants appear ventilate only a little at first, increasing the size of the opening almost daily till the plants can bear full exposure. If the plants are to be grown in pots, prick off very large enough to handle. If to be planted in the borders, harden off gradually till the weather is suitable, and then prick out in beds.—E. H.

3036.—Treatment of Cyclamens.—When *Cyclamens* pass out of bloom, they should be placed on a shelf near the roof-glass of a greenhouse until the weather is mild enough for them to stand in garden-frames. They should be kept moderately dry at the roots during summer, and when it is time for them to start into growth in the autumn, they should be repotted and may be kept in the garden-frames until the end of September, when it will be time to place them in the greenhouse again. The *Erica*, which has just passed out of bloom, is probably one of the herbaceous section, *E. hymalis*, and it should be cut down, and when it has started to grow repeat it. This also will flower well next season.—J. D. E.

3130. — Oleander not flowering.—Your plant probably requires repotting, as this will account for the flowers dying away, or the room is not suitable. The best place to grow *Oleanders* in is a greenhouse. We should advise you to look to the roots, and if a shift into a larger size is desired do this in the spring, using a soil composed of three parts good loam, peat one part, and a part of well-decayed manure. Mix with this preparation sufficient sharp silver-sand to make it moderately light.—C. T.

3180. — Bryophylla calycinum.—This is really a stove plant, but it does not need a very high temperature to grow it. I cultivated plants of it for several years as a curiosity, but after this was gratified I turned them out. The plants spring from the notches of the leaves, and these being succulent, they do not shrivel when broken off from the plant. If the leaves are laid on the surface of the soil the plants will soon appear, and at each notch on the edges of the leaves a tiny plant will form, which in time will root into the soil. Well-drained pots of sandy loam suite it very well, and the leaves being succulent, water should not be applied too freely.—J. D. E.

3198.—Slugs in a greenhouse.—Water with lime-water, or visit the house at night with a light, when they are feeding, and capture them. Perseverance in this way will soon clear them off.—E. H.

— I am afraid there is no other remedy but catching the slugs in such a case as yours, and the only way to do this is to search for them at night by lamp-light. In the day lay down two or three Cabbage or Lettuce-leaves and examine them at night, repeating your visits until you find there are no more of your enemies. I am suffering just now from a plague of woodlice amongst my Ferns, and to get rid of them I search for the insects every night and kill them. I know of no other means of getting rid of them.—J. C. C.

3151.—India-rubber plant.—This is a very common complaint, but it is difficult to assign an exact cause with any degree of certainty. Errors in watering frequently result in an affection of this kind; if either too much is given, especially in cold weather, the soil becomes sour, and then the health of the plant suffers; while occasionally the soil may become excessively dry, and then the fine feeding fibres perish. It may be only the natural decay of the lower leaves, as after the stem of any plant, however healthy, attains a certain length the lower leaves are certain to fade and fall. Nothing can save the leaves that are already affected, but if the soil should be found to be sodden and unwholesome, the plant had better be carefully repotted, and kept in a close, warm house for a time. Even this will probably have the effect of bringing off a few more leaves.—B. C. R.



A greenhouse Rhododendron.

florum, from Malacca, and *R. javanicum*, a Java species, from which have sprung the large number of beautiful hybrids, now coming so largely into use for conservatory decoration. The free-growing habit of these hybrids, and their equally free disposition to flower—often two or three times in the year—combined with the beauty of their flowers, go to rank them with the most desirable plants for the decoration of cool-houses. The hybrid varieties possess a much better habit than *R. javanicum*, which is a determined spare erect grower, not disposed to branch out. The mode of propagation best suited to the hybrid sorts is grafting on such of the seedling varieties as possess a free, vigorous constitution. The stocks require to be raised from shoot cuttings in the ordinary way, and grown on in 6-inch or 8-inch pots until large enough for grafting, when they may be headed down to within 5 inches or 6 inches of the pots, and the grafts, which should consist of pieces of the preceding year's shoots, inserted. The work ought to be done in the winter, and after grafting the plants should be placed in sufficient warmth to start them into growth. When some progress has been made the points of the shoots must be pinched out to induce the lower eyes to break so as to furnish the plants with side-branches. After this the treatment is simple, merely giving pot-room as required. These *Rhododendrons* do not want so much pot-space as many things. It will be well to keep the

Rosy Gem (white, pink, and rose), *R. Taylor* (pink), *R. Thomsoni* (scarlet), *R. Vestchianom* (yellow and white). The following species are fine kinds: *R. arboreum* (scarlet, Nepal), *R. argenteum* (white, with black spots, Himalaya), *R. Aucklandi* (white, Himalaya), *R. Dalhousianaum* (white, Himalaya), *R. Falconeri* (red and white, Himalaya), *R. Fortunei* (white, China), *R. Gibsoni* (white, Khosaea), *R. jasmiflorum* (white, Malacca), *R. javanicum* (yellow, Java), *R. Nuttalli* (white and yellow, Bootan). B.

3050. — Plants from seed.—It is quite possible for a beginner to raise healthy plants from seeds in a house without greenhouse or frames. There are some things that might fail; but a fair amount of success would be obtained if he went the right way to work. Do not start too early; end of February or beginning of March will be better than earlier. The pots or pans must be well drained with broken bricks or charcoal, or something equally porous. Three inches of such materials in the bottom of 6-inch pots will not be too much. In the drainage place some of the rough soil which has been sifted from that intended to sow the seeds on. Fill the pots moderately firm to within an inch of the top. Sow the seeds thinly, and cover about an eighth of an inch—not more. Very small seeds will not require quite so much covering. If the soil

is to be sown on a wall.—The *Hellebore* will do no good in an unheated house. The winter will

OUTDOOR PLANTS.

ROMNEYA CULTRERI.

I AM asked by a resident near Exeter what chance he has with this plant if he plants it outdoors near a west wall? It is the very place I should choose for it above any other. Whilst being so well in the West, you should have an excellent chance of its becoming a beautiful feature in your garden. Plant it if you can in a well-drained spot, using for soil sandy peat, with a small portion of light loam. I have not had much experience with this plant, but should like to see it become more frequent in our gardens. The flowers are very thin, and they do not lose the peculiar crumpled appearance, like a newly opened bloom, yet they last well for several days; they also are very ornamental when cut. They are soft creamy-white in colour, the centre is composed of clear yellow stamens, and it yields a delicious perfume. I certainly strongly advise the plant to be put into the position named. J. J.

3197.—**A small garden.**—You certainly will not be able to get many crops in your little garden if you wish to have flowers. Your query is not very plain. If you need flowers you may grow many kinds. The first thing is not to cut up the ground with two-hood walks, as the fashion is—walks that are utterly useless, as one would suffice quite as well. Keep the walk on the outside, so as not to break up the garden, and let it be as narrow as possible. A good gravel path is as satisfactory as anything, and you could lay down the centre of the garden with Grass-turf, making one or two small beds for the growth of Roses or hardy plants. Run a border round against the fence or wall, or you can dispense with the central beds and plant instead the two Apple-trees that you wish to have—Cox's Grange Pippin and Lane's Prince Albert being good kinds, the former for dessert, the latter a kitchen kind. They would look pretty when in bloom in the spring, and leafy throughout the summer. If you adopt this plan, keep the hardy plants, Roses, annuals, &c., to the border at the side. It is too late to plant bulbs now, but in the autumn you can put in good clumps of the best *Daffodils* (as *Horsfieldi*, the *Poet's Narcissus*, and *Emperor*), *Tulips*, *Ilycinths*, *Chionodoxa* or *Glory of the Snow*, *Scillas*, *Winter Aconites* (very pretty, peeping up through the ground in February, the flowers yellow), *Crocuses* (both spring-flowering and the beautiful autumn-blooming *C. speciosus*), *Fritillarias*, *Crown Imperials* in particular, *Snowdrops*, *Spanish and English Irises*, *Lilies*, and *Grape Hyacinths*. Then you can have good masses of such spring or early summer-flowering hardy plants as the *Adonis vernalis*, *Rock Madwort*, *Alyssum saxatile*, *Arahis albidæ*, *Thrift*, *Doronicum caucasicum*, *Helleborus guttata* and *H. orientalis*, *Iberis* or perennial *Candytuft*, *Spring Snowflakes*, *Leucocjum vernum*, *Forget-me-Not*, *Renunculus*, *Saxifrage*, and *Pensies*; whilst for autumn there are the beautiful perennial *Sunflowers*, *Achilles*, *The Pearl*, *Alatrorium aurea* (a vigorous growing plant), *Anemone japonica* and its white variety, the beautiful Japanese *Windflower*, *Michaelmas Daisies* of sorts, *Early Chrysanthemums* as *Mme. Desgranges*, a few good hardy kinds, several of which were named in GARDENING, Feb. 18th, page 723, *Funkias*, *Helenium autumnale*, *Evening Primrose*, *Sedum spectabile*, and *Herbaceous Plovers*. You must not forget *Primroses*, *Polyanthuses*, *Sweet Williams*, *Antirrhinums*, *Stocks*, and other homely flowers—at any rate, the above will make a good commencement, and at this season you can sow annuals, not sowing the seed too thickly, as the practice is with amateurs. Lists of the best annuals have been recently given. If you are not situated in the middle of a smoky town grow a few *Roses*, and cover the wall with good climbers, such as *Clematis Jackmanii*, *Veitch's Virginian Creeper*, the *Pyracantha*, *Honeysuckles*, a good *Ivy*, as *Emerald Gem*, *Jasminum nudiflorum*, and *Wistaria*. You will not have space for many shrubs and trees, but I will name six of value—the *Rose Acacia* (*Robinia hispida*), *Weigela* (a beautiful, free-growing and flowering shrub), *Fuchsia Riccartoni*, *Guelder Rose*, *Lilac*, and *Philadelphus microphyllus*. You can add anything, as you will see many charming things in ger-

dens if you observe that may be noted to get for your own little place. I may remark that it is essential to have good soil. Builders' refuse will not grow plants.—C. T.

3185.—**Forget-me-not.**—The best Forget-me-not for garden culture is *Myosotis disitiflora*; the flowers are a deep sky blue colour, and are abundantly produced in May. There is a variety with white flowers, but the blue one is the original colour and the best. It is best to propagate it from seeds, but seeds sown now would not produce plants to flower this year in May, but they would do so abundantly next year. I have thousands of plants of it left to run wild in a border that is never dug, and they seed and increase abundantly of their own accord. The seed may be sown now or later. I would sow it in May and look for a grand display of bloom next year. The white form is very pretty and should also be grown. There is also a form with variegated leaves, which was introduced under the name of *Myosotis distiflora elegantissima*; the leaves have a distinct white margin.—J. D. E.

3242.—**Shortia galacifolia.**—It is rather early yet to write of this plant, and those plants I have seen at shows have not been grown throughout the year in the open air. It is a delightful flower, net unlike an enlarged bloom of the *Soldanella*, of the purest white, with a suspicion of rose in it, and carried on stems about 6 inches in height. Then one gets a fine feature in the bronzy-red leaves that change to quite a crimson colour. It is almost worth growing for the sake of its crimson foliage in the winter months, and this is intensified when the plant is grown away from shade. It will succeed either in light loam or peat, but the former is better if the best colored leaves are derived. I have heard of plants dying, but in the neighbourhood of London it has lived out over a year. It is unquestionably one of the most beautiful things we have received from North America. The *Heuchera sanguinea*, as far as our experience goes, will live through ordinary winters. It likes a sunny well-drained border, the soil not too heavy, and then makes a delightful show of its scarlet or crimson flowers. It is very pretty also grown in pots for the greenhouse. Unfortunately it does not come very true from seed. They are often less rich in colour than the type, and more straggling in habit, although they bloom very freely. The species does not always continue to bloom well when planted out. *H. sanguinea* is a charming plant, the flower-stems very graceful, and rising about 2 feet in height.—C. T.

3248.—**Seeds of hardy perennials.**—The ground must be thoroughly prepared. I have generally tramped up a piece of land in autumn or during winter and left it lying rough till spring. I consider April is the best month for sowing most things, and if the land has been properly prepared there is no necessity to cover with anything; but I have used when necessary a compost of charred refuse, burnt earth, and sandy loam, all well blended by being passed through a half-inch sieve. This is used in special cases, but for the most part the seeds are sown in drills about half an inch deep, and covered with the ordinary soil. Such situations can be selected for those which grow naturally in such positions where it is intended to naturalise certain plants without the trouble of raising them elsewhere. Spots of suitable soil can be trenched and cleaned, and the seeds then sown in drills. I prefer the drill system under all conditions, as it saves so much trouble in keeping the plants clean the first year. Whatever is done afterwards, they should be kept clean the first year and the plants properly thinned according to the space each will require.—E. H.

3188.—**Culture of Pinks.**—Show Pinks should have been planted in autumn to have the flowers fine and the colours true and pure. The usual way of propagation is from cuttings or pipings of the young side shoots just after flowering. They will strike quickly under glass, and the choice varieties are generally struck in that way in light sandy soil. But the common hardy sorts (Border Pinks), such as *Mrs. Sinkins*, may be pulled to pieces any time during autumn, and planted either in patches, or a dozen in a pot, or in beds from 6 inches to a foot apart. The following are good

varieties, including the two classes: *Bertram*, *John Ball*, *Godfrey*, *Lord Rosebery*, *Master Merry*, *Wm. Paul*, *Emily*, *Ade*, *Derby Day*, *Lord Lyon*, *Firoman*, *Modesty*, *Mrs. Sinkins*, and *Hor Majesty*.—E. H.

3257.—**Water plants.**—I might give "Pay de Galle" a long list of things that would flourish in such situations as he names, but perhaps it will be of more assistance if I throw out a few suggestions. He seeks bold effects, therefore it must be through the medium of fine things planted on a large scale. First for the waterside: One of the earliest flowers coming with the *Giant Ringcaps*, and belonging to the same family is the *Globe-flower* or *Trollius*; it loves the water-side. *T. europæus*, *asiaticus*, and *Dahuricus* are good kinds, the last-named especially, which attains 3 feet in height. *Spiræas* are charming, too, especially *vonusta* and *palmata* and its varieties. *Day Lilies* love the water-side, and, then, *Irises* are a host in themselves. Take the Japanese species, *I. Kamperi*, and plant it by the hundred. If it does well you will wish for nothing better. The *Giant Knotweeds* (*Polygonum cuspidatum* and *sachalinense*) are delightful, their long arching wands wreathed in blossom in autumn, and through the winter up to now the nut-brown, though dead, stems stand picturesque through the winter. I might name many more things, but such as are here can be bought tolerably cheap by the score or hundred. As regards the ground beneath trees, *Primroses* often flourish very well if there is a fair depth of soil. I should procure some of the species which can be obtained cheaper and in quantity. The situation, in some respects, no doubt governs the choice of plants. If the *Nettles* provide useful covert, why not seek the same shelter for game among useful and pretty plants, first eradicating these noxious weeds? If some of the *Giant Grasses* would thrive there they would be charming. The *Sea Lyme Grass* (*Elymus arenarius*) is most charming, of a rich glaucous colour, and will grow anywhere, according to my experience, in sand or clay, and affords excellent cover. Then there is *Pampas Grass*, if hardy enough, but in any case *Eulalia japonica*, which is much hardier, will succeed, and though it does not flower so freely, it is tall and graceful. *Arunda conspicua* should be tried. This suggestion, however, is solely ruled by the situation. Another idea occurs which I have been carrying out quite recently. There was *Grass* honest *Oak-trees*, margining a walk. It was dug over except just round the tree-stems, and large carpets of *Ivy*, in many varieties, the shoots being pegged down over the ground, and at the same time interspersing with the *Ivy*, to come above it, *hard Ferns*, *Solomon's Seal*, and *Iris foetidissima*, a charming plant for the shade anywhere. *Primula japonica* does very well in partial shade in the Grass, and it is just possible this might suit some of the places. In a *Corwall* garden they are naturalised by thousands.—A. H.

—There are many plants that you could grow by the edge of the water. *Primula japonica* (the *Japan Primrose*), is a very free plant for the purpose, and it will get practically naturalised, seedlings springing up freely. Get a good colony of it, and there is a great variety in the flowers, and they vary from the deepest-crimson to even salmon-rose, the leaves large and vigorous. The flowers are borne tier or whorl position, and display is maintained over a long season. In the subdued shade of a wood, or by the stream-side, it has a fine aspect, and loves moisture. Then you can have the charming flowering *Rush* (*Botanum umbellatus*), as it likes a rich moist soil, and in the collection could also be included the bright, rose-coloured *Primula rosea*, *Cathas* (or *Marsh Marigolds*, known also as *Kingarps*), and of these there are many varieties, the double kinds, each flower like a golden rosette, being very effective. *Irises*, such as *I. sibirica*, are suitable; in fact, all the beardless forms, and you could get a good growth of the Japanese *I. Kamperi*, which delights to be by the margin of a pond or stream. There is great variety in the flowers, varying in colour from white through many shades of purple. The broad segments showing up well in August, and the vigorous growth is in itself ornamental. The beautiful *Globe-flowers* I have mentioned succeed well by waterside, and you could vary the effect by having snob

Ferns as the Royal Fern (*Osmunda regalis*), *Struthiopteris*, &c.; in fact, all the hardier kinds. A very pleasing plant thus placed is *Carex pendula*, which looks especially well if on the Grass that slopes down to the water's edge. I remember it finely grown thus in the late Sir S. Macleay's garden at Bletchingley. Remember our common yellow Iris (*I. pseudocorus*), which is very charming near water. I have seen the Oswego Tea (*Monarda didyma*) bloom remarkably well by the water's edge; also the large white-flowered *Trillium grandiflorum*, though this belongs more to the bog garden. *Lobelia fulgens*, Queen Victoria or Firefly, may be expected to bloom well, as they prefer moisture; also Orchises of various kinds. This list will form the basis of a respectable collection. You cannot expect showy flowers under the shade of trees, but you may carpet the surface of the ground with Ivy, selecting good strong plants of the Irish Ivy, or Emerald Gem, and pegging the shoots down to the soil, and if the shade is not too dense, try the Spanish Squill, or naturalise Blue-bells. Under the dense shade of trees it is hopeless to think of getting an abundance of flowers.—C. T.

3202.—**Culture of Christmas Roses.**—Plants growing and left to open their flowers in the open are not nearly so satisfactory as those which expand their blossoms under cover. It may be only a cold frame or a hand-light, yet they are kept clean and free from frost, which does much damage to the opening flowers. Christmas Roses do not like their roots being continuously interfered with, as in the case when the plants are dug up and placed in pots or tubs to enable their blooms to be brought on more rapidly. If the plants are so arranged in planting that a frame can be placed over them at the end of October, flowers will be ready for use by Christmas, and will last quite fresh and are always clean until the end of February. Not only is this plan so much better for the welfare of the plants, which increase every year, but the labour is minimized. A border with an eastern aspect suits these plants well; the border is not so liable to be dug during the summer as though it were a southern exposure. A moderately light sandy loam is favourable to a free growth, but where the soil is heavy and retentive it will be necessary to remove the greater part of it, substituting and mixing with it peat, leaves, charcoal, and old potting soil, first breaking up the subsoil to a depth of 2 feet, to admit of a quick percolation of the surplus water from heavy rains. If the plants are small they may be put out 2 feet apart, or so arranged that a frame will enclose them without crushing the leaves or crowns. Over the surface soil spread a 2-inch thickness of partly-decayed horse-manure, which will, in the event of dry weather settling in, prevent the escape of moisture from the soil. Give abundant supplies of water to the plants during the summer if this be hot and dry; drought at the roots is detrimental to a free growth, and without this a full crop of blossoms cannot be had. When the frame is placed over the clumps at the time named no more water will be needed; but should there be any signs of slugs troubling the plants, a dusting of soot on the surface will drive them away. This stimulant will not affect the blooms either, the surroundings being dry, and the flower-buds not yet above the surface. Keep the frame closed or open, according to the time the flowers are required to expand. In the case of frost cover the glass with mate sufficient to protect the blooms, giving air on all favourable occasions to maintain a dry atmosphere, which is less likely to discolour the flowers in frosty weather. When all the flowers have expanded the lights should be taken off daily to gradually inure the plants to cooler conditions, removing the frame altogether in a week or two. Cut off any old flower-stems, but not any of the leaves, except, of course, the dead ones; seldom these are visible, the same leaves remaining on the plants for a number of years. Repeat the mulching and watering process every year. Our plants treated in exactly the same manner have been where they are now for the last ten years, and are annually a great success. They promise the same for many years to come.—S. P.

321.—**Plants on a lawn.**—There is no better way than carefully and patiently digging them out with a tool made for the purpose, which may be obtained from any ironmonger. The ground is not now, and they may be extracted easily. It is no use to cut them off.—E. H.

FRUIT.

CHERRIES AND THEIR CULTURE.

TAKING the earliest Cherries first, the one I would recommend is Overroor Wood, which is a most prolific kind, and bears medium-sized fruit of a pale yellowish-white, anflused with colour on the side next to the sun, the juice, of which this Cherry is full, being very sweet and delicious. The next to ripen after this is the Frogmore Bigarreau, which is a little larger and brighter than the foregoing, and, like the old Bigarreau, of exquisite flavour. Black Eagle and Knight's Early Black come in quickly after, the first-named being a small kind, with very black, shining fruit, that is sweet and agreeable; and Knight's is the same in colour, but much larger, and not equal in flavour, as it is more fleshy and less sweet in the juice. To come in after these none are equal to the Elton, which is the most showy and best of all Cherries, as the fruit is large and high-coloured, and very rich in the flesh. As a black companion to this, ripening at the same time, the Tartarian is the best, the fruit being large and conical, and deep blue-black in colour. Although there are many others of the desert kinde, these mentioned above are the most distinct and desirable, and for cooking, till the Morello come in, none are equal to the May Duke, which is a prodigious



Cherry "Belle de Montreuil."

bearer, and the fruit will hang a long time. Belle de Montreuil (here figured) is an excellent mid-season Cherry for a wall.

THE MORELLO is quite indispensable, and is the most serviceable of all Cherries, as it may be used in such a variety of ways; and its season is a prolonged one, as by keeping the trees dry the fruit will remain sound and good till very late in the autumn, and the longer, in reason, it remains, the better it is. To have it to the period referred to it is necessary to train the trees to a wall or fence, that with a north, north-west, or north-east aspect being the most suitable; and if the young shoots are allowed a little freedom to grow out as breastwood, much time will be saved by tying them in, and they will bear heavily and keep cleaner and more free from insects through the washing they get. Morello Cherries also do remarkably well grown as dwarf standards or loose espaliers, with the main branches just held to strained wires, which is a good plan of growing them, as they may be protected easily when in flower or fruit—in the first place, by sticking a few evergreen branches along their sides, and in the latter by dropping nets over the tops. All Morello Cherries require in the way of pruning, when grown loosely, is just an annual thinning-out to prevent them becoming too dense, as, unlike the desert sorts, they must not be spurred in or have the shoots stopped, but left to grow full length. The most favourable situation for the

but it is always advisable to have some in different aspects, as when frosts come, with wind from one quarter, and kills the blossom, it often escapes in the other, and not only that, but a longer succession of fruit is maintained. To keep the spurs close to the wall, which is the only way of taking full advantage of the shelter, the shoots the trees make during the summer should be pinched back about the middle of July, when they will form fruit-buds at the base. Although Cherries do fairly well in almost any soil, that of a light sandy nature suits them best, and, therefore, in planting the young trees they should be started by having a barrow-load or so of sharp turfy loam to each, in which they will root and soon make some fine shoots. These ought to be laid in full length, and not stopped or shortened at any time till they have filled the allotted space and met the others trained at their sides. For destroying green or black-fly on the tree, to which insects they are very subject when the shoots are young and tender, there is nothing so safe as Tobacco-water, in which the points may be dipped.

B.

CANKER IN APPLE-TREES.

WHILE I do agree with most of "H."s" article on the above subject in GARDENING, Jan. 14th, p. 657, Vol. XIV., I must take exception to one or two items contained therein. I should also like to make a few observations derived from some years' practice with Apple-trees. In the first place, "H." mentions the advices often given to head old cankered trees and graft them with healthy scions of some other free-bearing variety. I have done the same with the best of results and have often seen it done in old orchards with similar success. Why is this? The reason is not far to seek. First of all the old cankered tree was probably one of those notorious varieties to canker, such as Ribston Pippin, Lord Suffield, Reinette du Canada, Sturmer Pippin, Duchess of Oldenburgh, Sterling Castle, J. A. Fish, Achmasd Kernel, and in some soils, Cox's Orange Pippin, and King of the Pippins will also canker badly. All the above are notorious for canker more or less. Very well; probably the old cankered stumps were grafted with such sorts as Peasegood's Nonsuch, Potts' Seedling, The Queen (Saltmarsh's), Worcester Pearmain, Small's Admirable, Lamb Abney Pearmain, and Blenheim Orange. I have found that any of these succeed on the very stocks which the fruit mentioned had failed on. Therefore, I think this is sufficient to prove that it is not always stock or soil that is at fault; secondly, with reference to the action of frosts on the badly-ripened wood. I have noticed this frequently, but I do not think that this affects the general health of this tree. I have invariably noticed that after these "frost-bitten" growths have been carefully pruned back below the cankered parts they have made good progress the following year. Thirdly, I do not think that dressing the cankered parts will cure them. Is there not a slight confusion between canker and "American Blight" here? Fourthly, with regard to the splendid Ribston Pippin, I think it should be grown as a standard or on its own roots, and then I think it will succeed fairly well, particularly in the latter way. No variety with which I am acquainted dislikes the knife more than the Ribston. "H." says that canker has been cured when caused by rubbing or other agencies than "soil influences." I will not call this canker. "Canker is a disease," and such cases as rubbing or frating from careless staking are simply wounds, the result of accident, and can be cured by simply paring the wounds and dressing as recommended by "H." Now we come to "soil influences." I at once say that I believe this has more to do with canker than all other causes put together, and of the various influences which the soil has on the trees a badly-drained and sour subsoil must claim my first attention. I have frequently seen young, vigorous trees planted without any preparation of the soil, and they have started off at express speed, but, alas! only to be checked so soon as their roots touch the sour subsoil. I have also lifted these trees myself when the canker has set in on nearly every branch of the trees, replanted them in properly-prepared sites, and they have recovered the following year; but let it be understood these cases were

taken in time—they were not delayed till the branches were nearly eaten off. Again, poor, gravelly soil will, I am aware, produce canker, and here, again, my advice is: frequently lift your trees, and add fresh soil for their roots to strike into at once, also never fail to top-dress, even twice a year if possible on such light soils, and I venture to say that canker will give very little trouble except in those notorious varieties above mentioned. With regard to the "artificial manure remedy" for canker, I have not the slightest faith in it. I cannot believe that where canker is caused through the roots striking down into an uncegenial sub-soil, that a few dressings of sulphate of iron, superphosphate of lime or potash, &c., will restore a tree to good health, but I believe that if, in such cases, the trees were lifted, and in the course of the following summer a couple of surface-dressings of one or all of the above-mentioned manures given (provided the soil did not previously contain them), that satisfactory results would issue. The advice given by "H." so to frequently relifting young trees is excellent. This I have proved over and over again. Only during the past autumn I lifted a couple dozen young Apple-trees which were planted the year previous. I shall expect to see these trees thickly studded with fruit-buds next autumn. T. ARNOLD.

3141.—Paradise Apple-stocks.—The Paradise stocks are best raised from layers. A few old stools will throw an annual supply, but they can be purchased from any of the large fruit-tree growers. Sometimes the fibrous-rooted plants are selected from a whole batch of seedlings and used as Paradise-stocks, but are not so good as plants from layers. Crab-stocks are usually raised from seeds.—E. H.

3284.—Pear Louise Bonne of Jersey.—This is a very hardy and free-bearing Pear, and will succeed wherever Pears can be grown. A medium soil, neither very heavy nor very light, suits Pears best.—E. H.

I have seen this Pear, when visiting gardens in northern Yorkshire, succeed well, and it will grow in deep, loamy soil satisfactorily. It is a handsome Pear in shape and colour, and exceedingly popular, but its flavour is not first-rate; but it is one of the great market Pears, usually fetching a good price.—C. T.

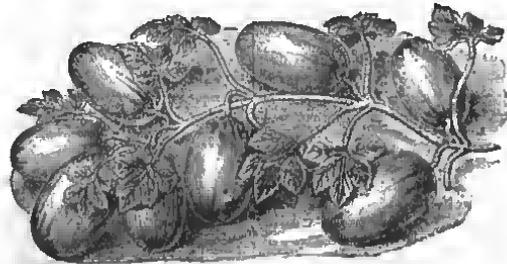
THE KITCHEN GARDEN.

VEGETABLE MARROWS.

VEGETABLE MARROWS should be eaten young—say when about one-fourth or one-sixth their natural size. Cut in this state, and boiled quickly until quite tender in plenty of water, carefully strained, and served with melted butter, they are second to no vegetable that comes to table, not even excepting Green Peas or Asparagus. Early cutting, careful cooking, and serving are the chief points to which attention should be paid; but there are others, one of the principal being rapid growth. Crew Vegetable Marrows quickly, and they are almost sure to be good; grow them slowly, and you will find them often tough and bitter. Hence the soil or place in which they are grown can hardly be too rich for them. Not but what they do fairly well in any good garden soil, but the richer it is the better. On a rubbish-heap, for instance, Vegetable Marrows grow with wonderful vigour, and fruit abundantly. It is also a capital plant for filling any space, nook, or corner, covering dead fences or walls, scrambling over outbuildings, or growing in any out-of-the-way or rubbishy place. Vegetable Marrows should be sown in April under glass. A temperature of 55 degs. or 60 degs. will soon cause their seeds to vegetate. As soon as the plants form a rough leaf pot them off singly in 6-inch pots, and return them to a frame until re-established. The plants may then be gradually inured to the open air, and finally planted out in their fruiting places about the end of May. It is of no use putting them out earlier, as they are tender and easily injured by frost. When they make a good start in their new quarters the shoots may be stopped to make each throw out from six to eight leading shoots or stems. These may be led off in different directions to form the plant, and it is seldom that any more stopping or attention will be necessary. After the plants reach a considerable size or age a Marrow will be produced under each leaf, and if the fruits be cut young and none be left to ripen seeds, the plants will go on bearing until arrested by frost in October. If planted on rich manure

or manure-heaps the plants will need no water; but if on poor, thin, or sandy soil, they should be plentifully watered with clean or menure-water, and must not on any account be allowed to flag, else mildew will follow on the heels of the check, and the plants and produce alike be destroyed. A yet simpler way for those who have no glass and are content to wait a little longer for their Marrows, is to plant the seeds in the ground at once—about the beginning of May. A hand-light, or bell-glass, or pot placed over them may bring them up all the sooner; but they will come up without any such aids to germination and make good progress, and the plants will yield a good crop throughout the late summer and autumnal months. As regards varieties, there is the New and Improved Custard, which is much liked by some; others consider it too rich and marrow-like to be pleasant eating. The flavour is distinct and peculiar, and it needs but little imagination to suggest the flavour of custards. Moore's Vegetable Cream has a rich, mild, sweet flavour, as the name suggests; and Hibberd's Prolific is a capital sort. But there are few or no Vegetable Marrows really superior to the Old White (here figured), and Green-striped, if these be grown rapidly and gathered young. D.

3244.—Making an Asparagus-bed.—If the old-fashioned bed system is adopted the ground is marked out in beds with 2-foot alleys between. But before the beds are set out the whole of the ground should be heavily manured and trenched as deep so it will bear without bringing any bad soil to the top. A 5-foot bed will take three rows of plants, and a bed 3 feet wide will be furnished with two rows of plants.



Vegetable Marrow "Old White."

The modern system consists in trenching the full depth and heavily manuring. The ground is marked out in lines 3 feet apart. Trenches are then formed 6 inches deep and wide enough to spread the roots out straight. Plant the roots in April, just as the growth is coming away, and cover the crowns 1 1/2 inches deep with rich compost. I generally use the charred refuse from the rubbish-yard, mixed with old Mushroom-beds, well broken up. This is the best and most economical way of growing Asparagus. There should be no cutting before the fourth year, if the future is considered. The variety named Conover's Colossal is the best. It is too late to put in Strawberries to fruit this year, unless there are strong plants in pots. The small plants usually planted should have any blossoms which may be produced picked off, and then there will be a full crop next year. Spring planting is better than waiting and losing a season. For general work it would be difficult to find three better Strawberries than Vicomtesse de Thury, Sir J. Paxton, and President.—E. H.

3223.—Tomatoes and Cucumbers.—This question has frequently been asked and answered in GARDENING during the last few months. The thing is possible, but it is a by no means advisable and always an unsatisfactory arrangement. Cucumbers delight in a constantly warm, moist, and clear atmosphere, while for Tomatoes these conditions are most unsuitable, and almost certain to induce an attack of disease. The two interests, in fact, are antagonistic, and as it is far better and more profitable in every way to grow one thing well than two or more badly, I strongly advise you to undertake one or other of these subjects rather than both. Can you not grow the Cucumbers in a hot-house? If I had to grow the two together I should plant the Tomatoes in the

idea of the house, training the stems over the roof, and grow the Cucumbers in a central bed over a mild hot-bed, covering them loosely with any spare frame-lights or old window-sashes. The light shade of the Tomatoes would not harm the Cucumbers, and the former could be freely ventilated, while a moderately close and moist atmosphere could be maintained about the latter. A much better plan, however, would be to fix a partition across the house and grow one subject in each of the divisions.—B. C. R.

TURNIP-ROOTED CELERY.

THIS, which is also known as Celeriac, though seldom met with, is a very excellent and useful vegetable, while the culture is much more simple than that of the ordinary kind. It can scarcely be termed a substitute for the latter, as the uses are somewhat different; but it provides the table with an entirely novel and, at the same time, unusually well-flavoured and wholesome dish. With a very heavy clay soil to deal with, I find a good deal of difficulty in getting the ordinary Celery earthed up properly, so have taken to grow principally the Turnip-rooted kind, and find it not only easy of culture and to succeed well, but it is also greatly appreciated. The seed should be sown at once, in the same way as that of ordinary Celery. My plan is to sow in a well-drained box of light, rich soil and place it on a warm greenhouse shelf; but in a mild hot-bed it germinates somewhat more quickly; in any case, the soil must be kept constantly moist. Prick the seedlings off as soon as they can be well handled into other and rather deeper boxes, or into a bed of rich soil in a frame, and when sufficiently advanced harden them off and plant out in June on the level and

in well-manured beds, at 12 inches apart in rows 18 inches asunder. All the subsequent treatment necessary is to keep the ground clean, and with an occasional soaking of liquid-manure, sewage, or a solution of nitrate of soda in dry weather, they cannot fail to make fine roots. B. C. R.

3203.—Seed Potatoes.—I presume you mean early Potatoes for garden culture. If so, get your seed cut at once, and placed when dry in a thin layer of sand, either in shallow boxes or on the ground in some sheltered place where no rain can touch them. Cover them thinly over with sand—or fine mould if sand is not handy—when sprouted; in a week or ten days (if in a warm place) plant out in drills on a fine day, about 9 inches or 10 inches deep, and from 15 inches to 18 inches apart—the drills should be at least 2 feet apart from centre to centre. Your third question is rather "Irish." How can the tops "show above ground" if you do not cover them with earth? Of course cover with earth, and when tops are from 3 inches to 4 inches above ground earth them up again to almost cover. This is the mode I follow year after year, and have always been very successful. The Potatoes should be planted on a nice dressing of half leaves (decomposed) and half well-rotted farmyard manure.—PADDY.

3230.—Cauliflower and Broccoli.—It is possible to have a succession all the year round if the weather would permit of it. But this it will not do in most districts. I have had no Broccoli since before Christmas, it being all killed by the frost, spring Broccoli included. Sow Early London Cauliflower in September, and plant out in handlights in October. Sow a little seed of Veitch's Early Forcing in February in a hot-bed, and another sowing in March of the

same. Sow Early London with Veitch's Autumn Giant in April, and this will continue the supply of Cauliflower until October, when the Self-protecting Autumn Broccoli succeeds the Autumn Giant Cauliflowers. Snow's Sniperb Winter White succeeds the Autumn Self-protecting Broccoli. I grew "Model" Leamington, and Ledsham's Latest of All, which continue the supply until the Cauliflowers which have been protected in hand-lights during the winter come in. Near London and in other cold districts the attempt to continue the supply all the year is often frustrated by frost, which kills the winter end spring Broccoli. — J. D. E.

It is quite possible to have a succession of these the whole year unless the plants are killed off in a severe winter. Cauliflowers may be out from June to November, or later. I have had Veitch's Autumn Giant sown outside in spring and planted in June up to Christmas and after, protected from frost. Veitch's Self-protecting Autumn Broccoli is very valuable planted in June and again in July; they will be in season from November till January or later, according to the season. Snow's Winter, sown in April, will follow Veitch's, and, if protected by moving to cold-houses or pits, they will last some time. Early Penzance, Cooling's Matchless, Leamington, Late Queen, and Cattell's Eclipse will continue the supply till the Cauliflowers come in in June. Sow Broccoli in April, and the late sorts, Queen and Eclipse, in May. Sow Early Cauliflowers in August and again in heat under glass in February, and sow Walcheren in April and May, and Veitch's Giant in April for late summer and autumn. — E. H.

3226. — **Auricula seed.** — I should sow Auricula seed in February if it was not sown when it ripened in July. Most of the Auricula growers save a little seed, and they sow it as soon as it is ripe, and it vegetates in a hand-light or garden frame; but the seed-pen or flower-pot in which the seed has been sown should not be exposed to the sun. A portion of the seed will vegetate in two or three weeks, but it is rather curious that most of it will lie dormant in the ground until early in February, when the young plants freely appear in a greenhouse or pit. As soon as the first leaf beyond the seed-leaves appear, the young plants may be pricked out, say a dozen, in a small sixty-sized flower-pot. The soil should be light for these very small plants, say about one part loam to one part finely-sifted leaf-mould, and a good sprinkling of clean white sand. The plants must be repotted and grown on in frames during the summer. They will grow to a flowering size during the season. — J. D. E.

It is a common thing to sow Auricula seed in the early spring, but this is by no means the best time, as the seed does not benefit by being kept out of the ground too long, nor does it care for artificial heat, but as you have the necessary appliances you may sow now, sowing the same thinly in shallow pans or boxes, properly drained, and filled with light soil. You must not get disappointed if all the seed does not germinate at all, as, under these conditions, it is slow to start, and as the seedlings appear they must be taken out carefully and pricked off into other boxes. Keep the pots of seed, however, in the frame, and the seedlings will come up very irregularly, taking care to keep the soil moderately moist. The wisest plan is to sow as soon as the seed is ripe, and they will make good plants to put out in the following spring. The greatest point is to sow as soon as the seed is ripe. Auriculas require partial shade and shelter from cold, cutting winds. Ordinary soil will suffice, but it must not be stagnant during the winter months. Nothing, of course, beats good loam, but one need not despair if that is not obtainable. When once a stock has been got, it is very easy to increase the plants by division of the roots, and the best time to do this is in early autumn, as then they have time to become established before winter. It is not necessary to divide often, but certainly about once in three years, as after that time the tufts or clumps get ragged, eventually dying away. You will derive much pleasure from raising seedlings, as good varieties may be expected if you sow good seed. Try and keep in stock the rich, self-coloured flowers, rejecting those of washed-out

hues, as these are by no means effective. Those varieties of a rich ruby red are very distinct and striking. — C. T.

Sow now in equal parts of loam and leaf-mould, with a little sand added, especially in the compost for covering. The seeds will do very well in the greenhouse or in a cold frame. When large enough to handle prick out in a shady border outside. — E. H.

WORK UNDER GLASS.

At this period of the year, when work out-of-doors is frequently at a standstill owing to the variation of our fickle climate, everything that can be done under glass in readiness for the coming busy season should be pushed on, for if left until the sun is shining and vegetation active outside, there is great danger lest it may have to be put off altogether. I always try to get the following jobs well advanced during bad weather—viz., washing and cleaning the inside of glass-houses, and the plants as well, and taking each house separately, I remove at least half the pot-plants to another house to make room for washing the rafters, glass, and walls, giving them a good scrubbing with warm soap-suds, and finishing off with clean water, and as soon as the walls are dry they receive a good thick coat of lime-wash, which stops up all holes in which insects might congregate, and makes the atmosphere of the house sweet and healthy, for plants certainly thrive best in cleanly houses. Then I take every plant separately, scrub the pots, clean the surface-soil, and sponge the leaves, using Gishnat compound, which destroys all thrips, red-spider, or mealy-bug that may escape being cleaned right off by the sponging. The plants are then rearranged, and another house taken in hand. Creepers and climbers need special attention in cleaning, and while vegetation is somewhat dormant is a good time to get them pruned and cleaned.

VINES also need considerable care, for if that dried scourge, the mealy-bug, gets established on them the crop of Grapes will be spoilt. Houses containing bedding-plants need frequent attention as regards clearing off all the dead or decaying foliage, every vestige of which should be removed, for leaves soon turn mouldy and, dropping on the shoots, cause them to decay as well. The surface-soil should be lightly stirred, and the shelves brushed down; but bedding "Geraniums" should be kept fairly dry at this dull time of year. Repotting plants is not advisable until the days have increased in length and clear heat is stronger than at present, except in the case of plants that are being potted up from open ground for early flowering, such as Spiræas, Deutzias, and other deciduous plants. Seed-sowing, even in cold houses, can be proceeded with, as Astors, Stocks, Zinnias, and many of the most useful summer plants can be considerably advanced by sowing the seeds in boxes of light soil, and setting them in the south front of glass-houses, as they come on very sturdily, and where heat is available Blue Lobelias, Petunias, Verbenas, and other more tender plant-seeds can be sown. A hot-bed should be got ready for striking cuttings and raising seedlings, as directly the sun begins to shine, even before frost is gone, plants make rapid progress under glass, and unless one gets the young seedlings well advanced by May, a good deal of the summer is lost. Get soils ready for potting; flower-pots should be scrubbed, and sticks and labels prepared for use. Chrysothemum-cuttings should be taken off as fast as they become large enough. They strike well in a cold frame. J. G., Hants.

BIRDS.

SINGING BIRDS.

THE SKYLARK.—In the early spring, if the weather be mild and open, the lhythmic song of the Skylark may be heard as it soars spirally upward in the sunshine. It is a permanent resident in this country, over which it is generally distributed. On the approach of winter Larks collect from all quarters into large flocks, when they seek sheltered situations, visiting Turnip, fallow fields, and Wheat lands. Towards spring the flocks separate and spread in pairs over the country. The ordinary flight of the Skylark is easy and undulating, and on the ground it walks and runs with great facility. It has two broods in the season. The first brood

is generally ready to leave the nest in June, the second in August. The nest is always built upon the ground in a little hollow or depression amidst corn or herbage, and is constructed of vegetable stalks and lined with fine, dry Grasses, in which is deposited four or five grey and brown freckled eggs. Young Larks should be fed upon a paste made of bread and milk, with a little Poppy or Rape-seed mixed, but the natural diet of ants' eggs is best. The yellow tinge of the plumage distinguishes the young males from the females. They begin to practise their usual song before they are quite fledged, and easily acquire the notes of other birds. Fresh captured Larks should at first be put into wire cages having wooden bars, and fed on Hemp-seed, Oats, and Poppy-seed, with meal-worms. But the ordinary food may consist of Barley-meal, bread-crumbs, crushed Oats, lean meat, worms, flies, and other insects, and they must always be supplied with a fresh turf of Grass or Clover, with clean sand to dust themselves in. With care and attention this fine songster will live many years in confinement.

THE WOODLARK.—The notes of the Woodlark, although less varied than those of the Skylark, are richer, more melodious, and flute-like. It generally utters its strain upon the wing, and whilst describing large circles in the air. The Woodlark is by no means a generally diffused species in this island, but appears to be principally confined to the southern and midland counties, frequenting uncultivated fields and Cornlands bordered by woodlands. It is about two-thirds the size of the Skylark, which it closely resembles in colour of its plumage and general markings; though it perches on trees, it builds on the ground, making its nest under the cover of some low bush or tuft of herbage. The nest is composed of dried Grasses, lined with fine materials, and the eggs, which are four or five in number, are of a reddish or yellowish-white, inclining to brown, with spots and speckles, and occasionally a few very lines of rusty brown or dark-reddish grey. Young Woodlarks should be fed upon ants' eggs and bread-crumbs soaked in milk. Newly-caught birds of this species should be put into a wire-cage and fed upon ground Hemp and Poppy-seed, with ants' eggs and meal-worms. A little powdered chalk given now and then is good for them, and they should always have a good supply of fine, clean sand, and also a moist fresh turf. The Woodlark is much prized as a cage-bird, but it is necessary to bestow much care upon it to keep it in good health.

THE TITLARK.—The Titlark, or Meadow Pipit, is very common in this country, where it remains all the year, chiefly frequenting damp meadows, moors, and pasturelands. Its plumage is of an olive tinge, and the spots on its breast are remarkably distinct, and extend far down the lower part of the body. It is not a very good songster, but is very docile, and soon acquires the notes of other songsters, those of the Canary more especially, and is a very amusing bird in confinement, being remarkably neat and clean in its habits. It builds early in the season, its nest being composed of dried Grasses and root-fibres, and lined with hair. The eggs are four or five in number, of a brownish-white, spotted and freckled with purplish-grey or reddish-brown. The nest is always built upon the ground, often on a grassy bank, and is generally well concealed, in which the Cuckoo sometimes deposits her single egg. Young Titlarks should be fed upon bread soaked in milk, mixed with Poppy-seed and ants' eggs. Great numbers of Titlarks resort to Oak stubbles in autumn and are then captured in clap-nets. This bird does not dust its plumage, but sprinkles it with water taken up in the beak. It should be fed upon the same food as the Skylark. S. S. G.

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HOUSE & WINDOW GARDENING.

FOLIAGE PLANTS FOR A PROPAGATOR. II.

SOME of the most fascinating foliage plants for the table are Grevilles robusta (the Silky Oak of Australia) and the equally graceful Acaea lophantha, though this last has the fault—a serious one in the case of a plant for a late dinner-table—of closing up its leaves at sundown, just as the Sensitive-plant, which it much resembles, shuts up at a touch. Both these little trees are easily raised from seed in the steady heat of a propagator, and are best sown one or two seeds in a very small pot, which can be sunk to the rim in Cocos-nut-fibre. They should be repotted when about 3 inches high (giving them a little leaf-mould with spent soil and sand) into 3-inch or 4-inch pots, and put back into the propagator until they are again well established, when they may be gradually hardened off and inured to the open air in summer. The Fern-like foliage of the Grevillee is most effective on the dinner-table, and it stands well in the dry air of a sitting-room, but it will not bear Tobacco-smoke, a very small dose of nicotine being fatal to it. Small pots (with plenty of soft-water, in a clear, thin state, given once or twice a week) will grow good-sized specimens of both these plants. Canna Indica (the Indian Shot) is a very interesting seedling to raise in a propagator. The hard little hullets of seeds need soaking in rather warm, but not too hot, water for twenty-four hours before they are put in, the cup in which they are soaked being placed on a warm mantelshelf or on the pipes of a conservatory. The newer varieties, with large flowers and rather more dwarf foliage, are perhaps the best worth growing, though the brilliant carmine blooms of some of the older dark-leaved Cannas can scarcely be surpassed. Cannas grow rapidly; when once the tropical little scabths spring up from the soil they grow like magic if given plenty of warmth and moisture, flowering the same autumn, though not so profusely as the following year. They are perfect for balcony or verandah decoration throughout the summer, only needing to be lifted into shelter at the end of September, where they will gradually lose their leaves during winter, and should be repotted in rich soil with good-sized pots as soon as they start in spring.

I. L. R.

Plants in rooms.—It is usual to find in the question columns of GARDENING complaints concerning plants in rooms, their debility, and gradual decline in health. Very often the fault is in bad potting or careless watering, but more especially neglect of proper sponging of the foliage. Those who have plants in rooms, such as Aralias, Aspidistras, Felms, and other comparatively hard-leaved things should take care in a ways sponge the foliage frequently with tepid water to remove dust or other impurities from the surface. It is foolish to think that a plant can live when encased in dirt; it cannot

breathe, so to speak, and the result is a slow death. Ferns and those plants that cannot well be sponged should be syringed when necessary, to keep the foliage fresh and healthy.—T. C.

3206.—Ornamenting a parapet.—Unless you had them especially made you could not get seed-pans deep enough for your purpose, as, whatever you use as a substitute for vases, the vessels should hold sufficient soil to sustain the plants put in them. It is not only a question of soil, but of watering also; the smaller the body of the soil the more often it will want watering. A friend of mine grows his Tomatoes in huckets which have contained meringues, which he obtains from grocers. These huckets or tubs would, I think, suit you admirably, as you can paint them any colour you like; but no doubt the colour should be the same as that of the parapet. With regard to the most suitable plants, the aspect is not of the best, and against the growth of tender plants. Two tiers might be occupied with good hardy Fuchsias, and two with green-leaved Zonal Pelargoniums. I would also try Tuberosa Begonias in the most sunny position; Yellow Calceolarias will also do if the position is not too windy. If these plants are beyond your convenience you may sow such annual flowers as Nasturtium, Mignonette, Hawkweed, Convolvulus, and Eschscholtzia. Place the tube in a sunny position at once, and sow the seed, and about the second week in June they may be taken to the parapet.—J. C. C.

It is not very easy to advise you. Very deep pans may not be suitable; but the situation is, unfortunately, unless, therefore you are debarred from planting Ivy-leaved Pelargoniums, which will not bloom without sun. You might plant the Creeping Jenny and its golden-leaved variety, which will hide the pans, and plant Ferns, small-leaved Ivias, or fine-foliated things for the summer. Of course, you can get a good effect by putting in flowering-plants in pots and changing them when the flowers are over; but this will entail considerable expense and labour. I wish I could help you further, but without sun one cannot do much in the way of flowers.—C. T.

3275.—Flowers for a hall in winter.—Pot up very strong plants of the Yellow Winter Jasmine and Laurastines now, and keep them growing in a sunny position all summer, encouraging the growth by liberal treatment and the use of liquid stimulants. Strong old clumps of Christmas Roses may also be potted now, as they flower better if established in pots than if lifted from the ground in autumn, although the latter plan does very well when lifted annually, and taken back to the shady border, the soil being made rich with old leaf-mould, and the surface also mulched down with it. One of the best plants for a hall in winter is the hardy Fan Palm (Chamerope exelma); but the plants must have attained some size to possess much decorative value, though with care afterwards they will last in condition a long time, probably years. Retinospora plumosa and R. p. aurea are very useful for potting up for the corridors and the hall in winter, and they are cheap. Good bushes of Periwinkles, Skimmia japonica, the berry-bearing Aucuba,

and Euonymus in variety, are all more or less useful.—E. H.

The only way to manage the Yellow Jasmine will be to grow it in a large—11-inch or 12 inch—pot during the summer, plunged in ashes in a warm and sunny spot. Myrtles are easily grown in large pots or tubs, and Christmas Roses also. Both must be exposed outside during the summer, and well supplied with water and liquid-manure. The Golden Variegated Euonymus, Arelia Sieboldi, and Aspidistra lurida var. are often subjects suitable for this purpose.—B. C. R.

3276.—Puddling a pond.—The clay should be from 6 inches to 9 inches in thickness, and the method of making it is merely to beat and pound the clay well together until it is of the consistency of patty. The man who has to puddle the pond takes a lump of clay up in his arms and dashes it against the side of the pond, and continues to do so, dashing one lump against another until it is of the desired thickness. The clay is made smooth on the surface as the work proceeds. I had two small ponds done in this way ten years ago, and they answer very well now.—J. D. E.

I have known two or three amateur gardeners attempt to puddle a pond, but they have always failed. The fact of the matter is, it is a dirty, messy job, and requires greater care and more labour than a stranger to the work would imagine. In the first place, you must make the bottom of the pond quite firm with hard ramming before you attempt to put down any clay. Before and while using the rammer you must remove all stones that are anywhere near the surface, and if the soil is at all dry give it a soaking of water the last thing at night, and well ram it again in the morning. After this a depth of 4 inches of clay may be spread over the bottom and well rammed, so as to beat it into a united mass, finishing with a smooth surface. After this another layer of clay 6 inches thick must be laid down. This time the clay must be specially prepared by divesting it of all small stones and other hard lumps, then get a large flag-stone or some other solid substance to act as a platform on which to work up the clay. With all the materials in readiness and a bucket of water close at hand, the clay must be worked up on the platform in convenient lumps, the same way as a baker kneads his bread, until the mass is moistened through and worked into a proper condition to unite with that already laid down. After being beaten with a wooden mallet and the surface made smooth, there is no doubt but it will hold water, and last for a number of years. As the work is completed the surface must be prevented from cracking by being kept damp until the water is let into the pond, and that should be directly the puddling is finished. Of course, the work can be done without handling the clay in the way I have suggested, but it would not be done so well.—J. C. C.

3277.—Sowing seeds broadcast in a London garden.—Commoners, common or "rot" Marigolds (Calceolias), Mignonette, Convolvulum, Scarlet Foxglove, Indian Pink, Virginian Stocks, dwarf Tropaeolum (Nasturtium), and a few Ranunculus.—B. C. R.

GARDEN WORK.

Conservatory.

Chorosemas which have passed their best may be pruned back to encourage new growth for blooming early in autumn. When fairly broke in report, if larger pots are necessary, and when the plants have reached specimen size they will not thrive annual repotting. If the drainage is right. Perfect drainage is the most important matter in connection with the culture of hard-wooded plants. If the drainage ever gets blocked the plant will soon show signs of it in its sickly appearance, and a sickly hard-wooded plant may as well be thrown out, for it is never likely to be of much use afterwards, and in these days, when plants can be so easily propagated, it is a question if it is any use keeping a sickly plant at all. A sickly plant may be useful occasionally to point a moral, or to teach a lesson, but when that object has been attained the sooner it is cast out the better. One rarely meets with a collection of *Boronia* now, beautiful though they are. The reason for this is probably because this is not a waiting age. Any plant which requires several years to make into a specimen is not regarded favourably, and perhaps there may be another reason why this class of plants is not often met with now. They will not do well under the treatment usually given to soft-wooded plants. Give hard-wooded plants a house to themselves, and grow a fairly representative collection, and there will always be something in blossom to admire, and even when they are in bloom the growth of the plants has an interest apart from the blossoms. *Adenandra fragrans* is useful when not in blossom for the fragrance of its foliage in button-hole and other bouquet work. Among sweet-scented flowers *Boronia inaequalis* is worthy of a place in the conservatory. Some day there will be a run upon these old favourites again, and our greenhouses will be all the richer in effect for the change. This is a good season for repotting anything which requires more root space. But the usual time for repotting anything in the nature of a specimen is immediately after the flowering season, and the new growth is coming freely away. When plants approach the flowering stage it is not wise to repot, as the chances are the growth will be discontinued. But liquid-manure may always be used to help forward an over-loaded specimen whose roots are unduly cramped after a small pot. Climbers should be gone over frequently now, and the young shoots thinned and trained in. Use the syringe on the mornings of fine days, but keep the water off specimens in flower so much as possible. It will be very difficult to keep *Chorosemas* free from green fly now, especially in a warm house. Tobacco-powder I have found useful, and fumigation of Tobacco may have to be resorted to in some cases; but caution is necessary in fumigating a mixed collection of plants, some of which, perhaps, will suffer from over-dosage. Zonal *Pelargonium* for summer flowering may be shifted into larger pots, using rough turfy soil, slightly enriched with very old manure, adding also some artificial to each barrowful of soil. Pot firmly.

Stove.

Achimenes not yet started should now be brought into heat, and the soil moistened. Some growers shake out the bulbs and start in new compost composed chiefly of peat and leaf-mould, made porous with sand. The pots or pans are always well drained, and a few rough pieces of turfy loam is an advantage in the bottom of the pot, to carry the drainage. The roots will find it when the plants are flowering, and make in some cases require something a little stronger. Last pot is used now for the class of plants than was the case formerly, and more old turf and leaf-mould. The *Hoyas*, or Wax-flowers, are a very interesting class of plants. *H. carnea* may be grown in a warm greenhouse, if kept dry, through the winter, and it forms its flowers better after the rest than when kept in the stove all winter. Every possible effort should be made before the plants come into flower to get rid of mealy-bug. This is not the kind of plant I should recommend for a greenhouse window, for the reason that it is next to impossible to keep altogether clear of this pest. *Hoya* has a very charming plant for a pan or basket. It has always been considered rather a misfit thing to do, the roots so soon suffering from the least stagnation in the soil. The pan should be one-third filled with drainage, and the plant potted in rough peat and chopped Sphagnum, kept open with small lumps of charcoal or coarse sand. Under careful culture it is a charming thing, and the flowers last a considerable time. Must be shaded from hot sunshine, and never permitted to suffer from either too much or too little water in the soil.

Unheated Greenhouse.

The *Chrysanthemum* must be a source of strength to this house in the autumn, and well on into the winter if the weather should be mild. Those who do not require large, fat blooms may yet take cuttings, or, rather, they may with a knife detach rooted plants from the base of the healthiest and best of those of last year, and these, if potted singly, will soon make progress, and in due time can be removed to the open air for the summer, and if their wants are well attended to there will be plenty of plants good enough for ordinary decorative purposes or to supply cut bloom. Tuberous *Begonias* will soon move now, even though kept cool, for the season is close at hand when all plants having life will feel the impulse of the increasing temperature. The best soil for *Begonias* is old, rotten turf, one half, a little fibry peat, and the remainder leaf-mould, the whole to be made fairly porous with sand and broken charcoal. A compost as prepared will not easily get accident and unwholesome for the roots, and this is the chief thing to keep in mind in all plant culture. First look to the drainage, and then secure a compost which contains plenty of fibre, and blend it reasonably with sand and fine charcoal, so that when the fibre in the soil decays it cannot hold too much moisture.

Ferns under Glass.

The plants now are full of growth, and those which have been repotted are now feeling the benefits of the change. It is just possible that there may be a few of

those troublesome green-diseases of the young, tender fronds. To attempt to deal with these by fumigation would probably lead to injury from the heat of the smoke, and therefore the best way to form fumigation is out of the question. Soft-soap, one ounce to the gallon, with about a wineglassful of paraffin-oil to two gallons of the soapy water, will, if applied through the syringe, clear off most of the insects, though it is probably a second syringing within a couple of days will be necessary to complete the cure. Large specimens should be tilted on one side, so that the mixture may not run into the soil.

Cold Frames.

No one has too many frames, or too much glass, if it is in a cheap, portable form. Some of the uses to which frames may be put now is to thin out some of the hardiest things from the greenhouses. If well protected at night bedding "Geraniums," well established in pots, will be quite safe in cold frames. *Asters* and *Stocks* may be sown now without bottom-heat, although a little warmth will be a decided advantage, and frames may be put to a profitable use in bringing onward all kinds of early vegetables and salads.

Window Gardening.

Liquid-manure in weak states may be given to *Pelargoniums* and other plants which are in a potting condition. Spruce see very useful window and room plants, and if well supplied with water they are very lasting. The pots may stand in saucers containing water, and a teaspoonful of artificial manure may be placed in the water occasionally. *Repot Bearbeugh Lilies* if very much pot-bound, but not otherwise. Liquid-manure may be given during growth, and again in September, when, the flower-spikes are showing up. Fill baskets with ivy-leaved *Pelargonium*.

Outdoor Garden.

Roses may be pruned now, especially if early districts, where the plants are growing freely. It is best to cut the dormant buds where possible, and I need not say that the cuts should be short and clean. Thin out the heads of standards by the removal of all weak shoots, as if crowded plants the blossoms must be small. After pruning fork in the mulch and leave the surface open for the air to penetrate. A close, much-trampled soil requires opening up a little at this season. Our Roses will be mulched again when the hot weather comes, but for the present, at any rate, the air will be let into the land to sweeten and purify the roots. Go over the rookery and carefully remove dead foliage and stems and then tread with suitable material to encourage growth. Peat and leaf-mould, with a little coarse sand and bits of sand or limestone, for certain plants. Evergreens will move with safety now, but the buds of deciduous things are moving rapidly, and though plants moved now might not die, they will be better left as they are till the autumn. Shrubs should be looked over and dead wood taken out. Straggling branches should also be shortened. This pruning should be done generally. Cut close back ivy on hill-sides. Ivy may be planted now, and cover beneath trees where scarcely anything else will grow. For this purpose the broad-leaved Irish Ivy is the best. Plant *Hollyhocks*, *Cornwallis*, *Ploteas*, *Astrichnium*, and other plants which have been sheltered in frames. The first lot of *Gleditsias* may be planted as soon as the land is in a suitable condition. Plant out climbers on walls, and to cover buildings, including *Clematis*, *Jasmines*, *Honey-suckles*, *Roses*, *Ceanothus*, &c.

Fruit Garden.

Muscate Vines, just breaking, must be delubbed by the removal of all weakly shoots. Muscates always throw many more shoots than will be required, and it frequently appears that in the case of old Vines the shoots at the beginning are weak, but by disabbing with a free hand the improvement is soon perceptible. Support pot Vines liberally now. Where possible surround the pots with rich turfy compost. I have seen the pots encircled with wire-netting, and the stuffed full of old turf and manure when further enlarged with artificial fertilizers—this is better than deluging the soil with liquid manure. These are well enough in a way, but their random use often injures the colour of the Grapes; but when the Vines are nourished with proper compost, mixed with the old turf, the result is always satisfactory. In thinning Peaches do not overload, especially if any part of the crop will be sent to market. For some one can do so one like in the matter of thinning much or little, but for small Peaches are of no use. Keep the shoots thin and tied down as they grow. Start early Melons in hot-beds, or in hot-water-heated houses or pits, and sow more seeds of the best varieties for succession. New plantations of *Strawberries* may be made now, but they should not be allowed to bear any fruit, unless the plants are very strong from pots. Finish planting fruit-trees for the season. It is, of course, very late for the work, and could not be done unless there are urgent reasons for planting now. Grafting may be done as soon as the sap is in vigorous motion. Fresh batches of *Strawberries* should be brought indoors early fortnightly intervals. Now that we have earlier varieties for outdoor planting there need not be much keeping back of pot-planting.

Vegetable Garden.

A good supply of forced *Aperugas*, *Saskals*, and *Mushrooms* at this season is most important, and will cover any deficiencies in other directions. But though the winter has been rather severe, the damage done to the green crops has not been so far as I have seen, very serious. Broccoli, though possibly small, will be plentiful, and other kinds of greens fairly supplied. *Mushrooms* may be made up in the pots and saw-mould, or in bed of any kind. I have had good profits made by filling trenches with warm manure, treading it down firmly edging the beds (and the larger they are the better) with rough boards, and covering with waterproof cloth or wooden shutters. A good breadth of early *Nantes Horn Carrot* may be sown now to succeed the early bed on the main border. Young *Cerrots* are very acceptable at all seasons, and by sowing in succession, first under glass and afterwards on the warm border, following with a further bed in the open air, and finishing off with a sowing in July on the warm border, to be protected in shelter, will bridge round the year. Everything should be done now to secure a good supply of good Lettuce. Glass will be necessary for this object, to be early covered

ont. Gentle hot-beds made of leaves and stable-manure are very suitable for the growth of Lettuce and salads of all kinds at this season. The Paris Market Cabbage *Wolcott's* variety, and best of the season, may be planted 8 inches apart, or if sown in the frame they may be thinned out to the distance named, and the thinnings pricked out in another frame, or on the warm border outside. French Beans will do best now planted in pots or frames on beds of manure that will insure a temperature of 60 degs. or so. French Beans in vinery or Peach-houses are apt to encourage red-spider, and if the insect makes its appearance the Beans should be cleared out at once. See that sufficient Celery has been sown for the main crop, and prepare a bed for sowing outside for late use. When Celery is sown in the frame in April, though the plants will not grow so large, they will keep in condition much longer, and will suffer less from stress of weather, and will not run to seed so soon. E. HONDAY.

Work in the Town Garden.

Camellias, as soon as the flowers are over, should be placed in a moderately warm house or pit, and kept close and moist, both at the root and overhead, with light shade from hot sun, when this gains a little more power. Where there is no second structure the plants should be kept in the closest and warmest end of the greenhouse, and frequently syringed overhead. This treatment, though not absolutely necessary, causes the plants to make vigorous growth, and set an abundance of buds in good time. Any straggling branches may be cut back, and under the conditions indicated they will quickly break into fresh growth. Repotting also may be performed now with the best results, but in the case of plants that have been pruned to any extent better defer this until the fresh growth is a couple of inches in length. *Similax* treatment may be accorded to *Azaleas* of the Indian section, and if repotting is not judged advisable let the plants have some weak liquid-manure or soot-water once a week while the fresh growth is being made. Take care to pick off any seed-pods that may have been formed. The Persian *Cyclamens* are in great beauty now, and as the flowers fade should be placed in a warm greenhouse, and kept in order to mature the foliage perfectly, but still keep the plants regularly moist at the root. About the middle of April they may be removed to a cold frame to be hardened off, and early in June place them on a bed in a shady spot for the summer, but never allowing the roots to want for water. Plants from seed sown now in heat, and pushed on briefly, will probably flower to some extent next winter. I have sown the first week in April and then had flowers by the following January, but the best plants seen obtained by sowing in July or August, wintering the seedlings in boxes or small pots in a warm greenhouse, and potting them on during the following summer until the 5-inch or 8-inch size is reached, when they will bloom abundantly the second winter. Old Chinese *Primulas* that began blooming early, and are to be kept over for another winter, should now have all the flowers and buds picked off and be hardened off, and finally stood outside in a shady place in June, in the same manner as recommended for *Cyclamens*. Keep them fairly moist, report in July or August, and if healthy they will bloom profusely again next winter. Sow *Primulas* oblong in the flower water, and P. *sinensis* for early flowering, the double kinds are extremely pretty and useful. Sow *hardy annuals* in the open ground, and a bed or two of *Phlox Drummondii*, *Asters*, and *Salpiglossia* under glass. Hardy trees and shrubs may be planted at any time now. B. C. R.

THE COMING WEEK'S WORK.

Extracts from a garden diary from March 18th to March 25th.

Grafted several large Apple-trees which bore indifferent fruit. The grafted were strong pieces of two-year-old wood. For large limbs old wood is best, as when cut in with the axe the sap can be drawn off freely, and there is not the same danger of being blown out with the wind when the top gets heavy. Planted Potatoes. The land works well, and a good many have been got. One of the best late Potatoes is, I think, *Imperator*. The crop is always heavy, there are very few small ones, and for the three years I have grown this variety there has been no disease worth mentioning, and last, but not least, the quality has been invariably good—far superior to the *Magnome* from the same soil, although the latter is generally free from disease. Planted several rows of Duke of Albany Red; this and Walker's Perfection Bees are, I think, two of the best Peas for supplying a family. Planted out *Saskals* roots in rows 15 inches apart and 12 inches apart in the rows. Tied down young wood in early Peach-beds. Watered and Alexander did not set so well as the other varieties in the same house, but the late blossoms did fairly well, and there is plenty for a good crop. Sowed hardy annuals in beds and borders; these are used chiefly to fill the between herbaceous plants. Shifted on Tomatoes to fill unheated houses. Ham Green Peas, *Perfection* are the best chiefly grown, and are not believed in unheated houses for Tomatoes, but the houses are only now in course of erection, and the sowing will be delayed till the autumn, and as the position is a sunny one I have no doubt the crop will be a good one. Disabbed Vines in late house. Fire-heat will be used regularly till the summer weather comes, so I prefer to do a good deal of the work at this end of the season, rather than pot it all off till the autumn. *Gros Colman* requires as much heat as *Muscates* to ripen them properly, and will pay as well for it. Potted off bedding plants in variety. Shifted the strongest *Chrysanthemums* into 5-inch pots. They are kept on the fire till the coming week with keeping out frost. Put in cuttings of the large-flowered *Yellow Irish Daisy*. I had a good-sized patch of this in the reserve garden last summer, and the empty cut bloom was *Immense*. Sowed *Stocks*, *Asters*, *Phlox Drummondii*, *Donblo Zinnia*, and *Salpiglossia*; the last named form a very pretty mass, distinct from most other things. Planted another house of Cucumbers, the variety being *Locke's Perfection*, and set out a small house with *Melons* in pots. The pots are of large size, and are plunged in the bottom-heat bed. *Melons* must have bottom-heat if they are to be good for food. Finshed training *evergreen* *Fig* *Chrysanthems*. These have gone out of cultivation in some private gardens, but they are very useful, both for cutting and for making groups in the conservatory

* In cold or northern districts the operations referred to under "Garden Work" may be done from two days to a fortnight later than is here indicated, with equally good results.

when well grown, and as soon as they get shabby they are cut down, the cuttings put in, and for some time they do not require much space or much attention. Pricked off seedling Gloxinias and Begonias. Shifted on a few young half-specimen Ferns. Several old plants have been thrown out to make room, and when Ferns get old they are best on the rubbish-heap, as they are not worth keeping. Cleared out exhausted Asparagus roots from the hot-bed where forced. Stirred up the bed a little, and planted it with French Beans. Finished planting out Carnations that had been wintered in pots in cold frame. Planted Gladiolus. Disbudded Pigs under glass, and pinched the shoots left at the fifth leaf. Shifted on young Palms.

INDOOR PLANTS.

PELARGONIUMS AS WALL PLANTS.

It is not so generally known as it should be that Pelargoniums are very excellent greenhouse wall plants (see illustration). Many of the strong-growing Zonal kinds are remarkably well adapted for this purpose, and so are the Ivy-leaved ones. The old early-flowering varieties of the large-flowered section, Gauntlet and albummultiflorum, do well on walls, and amateurs who may wish to have a little variety in their greenhouse would do well to bear in mind the value of the strong-growing Pelargoniums as wall plants. B.

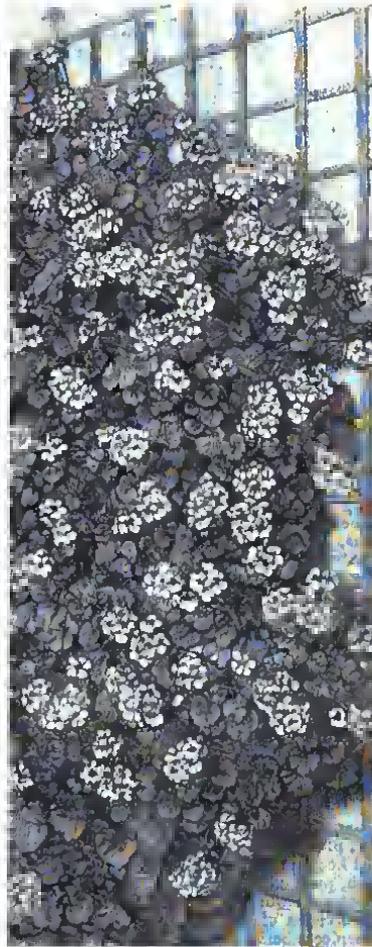
POINSETTIA PULCHERRIMA.

THIS is one of the brightest and most attractive plants we have for decoration during the duller months of the year. It would be difficult to find anything to surpass in brightness the beautiful scarlet bracts or leaves which surround the terminal clusters of rather inconspicuous flowers. Although, strictly speaking, a stove plant, when properly treated it is a fine subject for conservatory or house decoration. It has now been in cultivation upwards of fifty years, yet its culture does not seem to be too well understood at the present time. Like many other plants from the tropical regions, this is often kept too close and warm during the summer and autumn. Being naturally of rapid growth and inclined to grow tall, under close treatment, especially when shaded as well, the plants run up until they are too high for ordinary uses. Various modes of treatment are recommended by different growers, and no doubt when properly carried out each may be equally successful. If treated as follows there will be little difficulty in growing short sturdy plants, which will keep their foliage and produce fine heads of the beautiful scarlet bracts. In the first place, the strongest and best ripened plants should be selected for stock. After being well dried off, these may be cut back to where the wood is quite firm. They may then be stored away under the stage in a warm-house, laying the pots on their sides, so that no moisture gets to the roots, and remain in this condition until they begin to start into growth in the spring. I like to keep them dormant as late as possible, but as soon as they begin to start they should be stood upon the stage and a little moisture given. Water should be used very sparingly until the roots have started sufficiently to take it up. After they have well started a little manure may be given to induce vigorous growth, good strong cuttings being the first step towards success.

CUTTINGS put in in June or July will make the best plants. The first batch, however, will be ready much earlier than this, and it is advisable to take the cuttings off as soon as they have made sufficient growth, especially where the stock is limited. When the cuttings are taken off some dry sand should be at hand to apply to the base, which will stop the milky sap from flowing. The cuttings should be put in singly into small pots, using a light sandy compost. If everything is in readiness they can be taken off and put into the close propagating pit without getting withered. I like to delay watering for a few hours, which gives time for the base to dry up sufficiently to prevent further bleeding. If kept close and well shaded they will soon take root. They must be removed from the pit as soon as they have started, and may be gradually exposed. When well rooted they may be potted on into 5-inch pots, in which they will flower. I have seen them succeed well in verone composts. I prefer loam, leaf-mould, and well-rotted manure, with sprinkling of sharp sand, but have seen good results

when potted in the first-mentioned, and also when peat has been the chief component.

WATERING is a most important matter, either excess being equally disastrous. In growing the plants on they should have as much light as possible, and plenty of ventilation during the summer. I have seen them grown in pits with the lights off during fine weather, but I prefer to keep them under glass. When the plants are well established liquid-manure may be used freely. In the autumn, as soon as the nights get cool, a little fire-heat should be given. The temperature requires careful regulation, for although no visible harm is done by keeping a low temperature, the result will be seen later on, as when more warmth is given for the development of the bracts the green leaves will fall off. On the other hand, the plants grow very rapidly just before they begin to set their bloom, and a high temperature will result in



Zonal Pelargoniums on a wall.

tall, leggy plants. Just before the flower-heads begin to form the plants may be kept a little drier, and no manure should be used. As soon as they are well set, or the first bit of colour can be seen, more warmth may be given and liquid-manure supplied freely. I should add that those propagated early may have the tops taken off. These make good cuttings, and the plants will make two or three shoots, and if potted on into larger pots they will make equally fine heads of bracts as those with single stems. The main points towards success may be summed up as follows: Strong cuttings struck late in the season, careful attention to watering, regular attention to temperature, and a light position as close to the glass as possible.

VARIETIES: There are several slight variations from the type, besides which we have the variety with creamy-white bracts, and the double form *P. pulcherrima plenissima*. This is more delicate than the normal form, but

worthy of cultivation on account of its coming in a little later, and when well grown it is more showy. In addition to the whorl of bracts at the base of the cluster of flowers, each flower has another whorl of smaller bracts, which are equally bright in colour and fill up the centre well. The white variety, *P. pulcherrima alba*, is rather delicate and does not form such large heads; nevertheless, it is very useful, and should be more extensively grown. Of other varieties *rosea-carminata* is distinct; the bracts are hardly so bright as those of the ordinary type; its chief recommendation is that it comes in a little earlier. Some years ago Mr. Spary, of Brighton, raised a batch of seedlings, among which were several distinct variations. These were exhibited at a meeting of the Royal Horticultural Society, but owing to their not having names, the committee did not deal with them, and Mr. Spary, who was then in failing health, did not take the matter further. I do not know if the varieties were entirely lost, but they do not appear to have been offered in the trade. I believe other growers have raised seedlings, but those above alluded to are the most distinct that I have seen. M.

The Scarborough Lily.—Now, just as they are commencing to make fresh growth, is the right time to repot plants of this deservedly favourite Vallota. Plants that have been wintered in a greenhouse from which frost has been just excluded, and watered occasionally, are now in luxuriant health, and producing quantities of young bulbets round the base of the old bulbs. It is a mistake to let these charming plants go very dry, even during the depth of winter, as they are properly evergreen, and if watered each time the soil shows signs of dryness, even during the depth of winter, will retain a quantity of foliage in quite a cool temperature. There are two ways of growing this plant, one being to give each—young bulbs or offsets and all—a moderate shift every spring, when a glorious mass of flowering bulbs will be the result in three or four years' time, and the other to remove the offsets and keep the single old bulb in a pot of about 6 inches diameter. Even quite small bulbets, with two or three leaves each only, will, with good culture, become nice flowering plants in eighteen months' time. *Vallota purpurea* occasionally perfects one or more pods of seeds, and if this is sown when ripe, a number of sturdy little plants will result. The way to induce this Lily to bloom freely is to treat it generously, and ripen the growth by free exposure to sun and fresh air in July and August.—B. C. R.

Yellow-spathed Callas.—There are two very distinct Yellow Callas or Arum Lilies in cultivation, one named C. Pentlandi and the other C. Elliottiana. The spathe of the former are of a rich golden-yellow colour, large, and are very handsome, in rich contrast to the deep-green leaves. Like the common C. ethiopicum, that may be seen in every florist's shop, it is probably a native of South Africa, and first flowered with Mr. Robert Whyte, Pentland House, Lee. It is interesting to notice that the bulbs were given to Mr. Whyte by a friend, who expressed the conviction that one of them would prove to have yellow flowers. The flowers of such a distinct novelty was naturally looked forward to with keen interest, and one would probably have rose spathe, but, as far as I know, this decided departure has not yet revealed itself. C. Elliottiana, also a yellow-spathed, but quite distinct from C. Pentlandi, the flowers of the former being marked with white, similar as in C. bastata, and it has been suggested that C. Elliottiana is a cross between the common Calla and C. hastata. Whatever the parentage of either novelty, it is satisfactory to know that they are likely to prove good garden plants. Then here is the further anticipation of varieties with spathe of other colours. A rose variety would indeed be an acquisition.—C. T.

Spring flowering bulbs in pots.—It is strange that amateurs do not grow more the many beautiful kinds of spring flowering bulbs that may be bought very cheaply. Bulbs potted up in the autumn will give welcome bloom in the early year, and as a rule about six bulbs in each 5-inch pot will be ample. A very useful flower for this purpose is the Glory of the Snow (*Chionodoxa lucida*), which is a perfect

frame to assist in bringing it up to the desired height.

ORDINARY GARDEN soil is not the best for the crops to root into, unless leaf soil and burned garden refuse or any lighter material that will assist in ensuring a genial root-run be added to it. Old potting soil, also the old material which has been utilized for Croumbers and Melons, with the addition of burned refuse, is as good as anything for the purpose, and a depth of 8 inches, or 9 inches, of this spread equally over the frame will ensure rooting space suitable for any vegetable crop. Carrots and Radishes may well have a frame or part given up to each, although the latter may well find a place in the Potato frame, being ready for use before being smothered up with the Potatoes. The evil generally is in sowing the Radish seed too thickly, as in this case one crop spoils the other, and especially the Radishes. The Potato sets being previously sprouted, these should be set out not less than 15 inches apart in drills drawn 4 inches or 5 inches in depth. Whatever crops are grown, it will greatly depend upon the management of the frames whether they turn out satisfactory or not. Allowing the soil to become so dry as to shrink from the frames is a grievous evil. Although Potatoes do not show signs of distress so quickly as Radishes, Carrots, or even Lettuce, yet the produce will be very scanty unless the soil is kept nicely moist. Radishes and Carrots would also be poor in quality and tough in texture, and the quicker they are grown the more satisfactory the crop. Keeping the frames unduly close, and perhaps forgetting about the ventilation until the temperature is raised high by sun-heat, and then suddenly giving perhaps a great amount of air, cannot but affect the crop to a serious extent. Leaving the ventilation on too long, although this may not affect the growth to a serious extent, yet by closing early so as to retain as much solar heat in the frame as consistent with safety, often makes a difference of a fortnight in the time of the crops coming to maturity, and which is to be considered when perhaps forcing against time. Covering up the frames during the night is another detail which should not be neglected, taking the precaution, however, of not covering up so early as to exclude daylight, also uncovering early enough in the morning for the same means—small points certainly, but often neglected. Coming to

LETTUCE, see what capital produce may be had by the aid of shallow and gentle hot-beds. Forcing Lettuce is resorted to a deal more than formerly, and this change was brought about on account of the Parisian market-gardeners supplying our markets with sweet and tender Lettuce, whilst in our gardens such produce was conspicuous by its absence; and, indeed, our markets are still principally provided from that source. At one time this kind of Lettuce was looked upon as only being able to be produced in France, but quite as good may be grown in this country by adopting the hot-bed system. Varieties of the Early Paris Market are the kinds used, and from plants provided by autumn sowing already under hand-lights or cloches placed rather thickly together on long and shallow hot-beds, the earliest are now ready and followed by others. Certainly light, artificially-heated structures have superseded hot-beds, and have to be resorted to where fermenting material cannot be had, but the latter is still the best for many purposes.

A few good Peas.—One of the most useful and productive Peas in cultivation is Duke of Edinburgh. The pods are not large, and the plant grows tall—often 7 feet or 8 feet—but it keeps on growing, flowering, and podding continuously in a way that no other Pea I know of does, affording an unbroken supply for eight or ten weeks at a stretch. Duchesse is an exceedingly handsome Pea, with unusually large straight pods and Peas of the finest quality. It is very even in growth, and a well-grown row just in perfection is quite a picture; but, unlike the former, it is soon over. Wm. Hurst is by far the best dwarf Pea we have, very productive, and seldom exceeding 15 inches in height. For succession I find the old Sunrise as good as any.

3271.—Good King Henry.—This is the Chenopodium Bonus Herculius, or Goose-foot, and is sometimes used as a vegetable, being

supposed by some to be a good substitute for Asparagus, and the leaves when the plant has made some growth are used as a substitute for Spinach. The young shoots are out as Asparagus in April and May, and when well grown are as thick as the little finger. They should be planted in a sunny position to come in early in April. The plant is a free, vigorous grower, and may be raised from seeds or plants put in some time in April. The ground should be well trenched and richly manured, and manure-water may be used during the summer months when the plants are in free growth. The plants should be set out 9 inches asunder.—J. D. E.

—This vegetable is in season as soon as the leaves are large enough to be used as Spinach, and will continue usable till the growth gets old and tough in summer. The young shoots are sometimes used like Asparagus in spring, but it is only from strong roots that such shoots can be taken without injuring the crops of Spinach-like leaves.—R. H.

3274.—Mushrooms in a frame.—Mushrooms may be grown successfully in any kind of frame made with rough boards, with a waterproof cloth or wooden shutters to cover over the top. The shutters will be better than glass, as Mushroom do not require light, and the glazed lights will make the frame too hot in summer. The site for the bed might be excavated a foot deep, as shady spots should be selected, or some place not much influenced by the sun's warmth, for the spring and summer beds. The manure should be worked into a sweet, genial condition by fermenting in a heap before making up the bed. But the manure should always during the process of fermentation be turned over before the heap gets very hot, as manure that has spent itself in heating is not adapted for Mushrooms. When the ammonia has all been driven out, as Mushroom-producing material its value has been injured. This is one of the reasons why Mushroom-beds fail. Another important matter in connection therewith is to keep the heap of manure sheltered from heavy rains; it is absolutely useless for Mushroom growing when much washed with rains or overheated. If the beds are made in a wooden frame, covered with shutters, the depth need not exceed 15 inches, and the top may be made flat. When made altogether in the open air, the beds are usually made in a ridge form, with a base of 3 feet or so, and the ridges about 2½ feet high, rounded at the top. When made in this way the whole of the surface is available for the Mushrooms, and, of course, the whole of the surface will be planted with spawn. The beds should be made quite firm, the shutters placed over, and the bed then left till the temperature is steady from 85 degs. to 90 degs., a thermometer being placed with its bulb sunk 3 inches or 4 inches in the manure to indicate the condition of the temperature. Break the spawn in pieces a couple of

the thermometer inside, put on the covers, and in six weeks the Mushrooms ought to be coming through, and a damp cover with a rosed pot with tepid water will be advantageous; but the bed will not require heavy watering till the crop of Mushrooms begins to thin off a bit, then a soaking of liquid-manure, in which a little salt has been dissolved, will give an impetus to production.—E. H.

—You appear to have a wrong idea about the value of a frame for Mushroom culture. Its only value for this purpose is that it serves as a protection, otherwise as good Mushrooms can be grown during the summer without it, and the time is near when the beds can be made up in sheltered places in the open better than they can be made in a frame. If you have suitable manure you may make up a bed in a partially shady place, and place the frame upon it. A bed of well-prepared manure 2 feet 6 inches high will give all the heat necessary. After the spawn is inserted keep the bed in darkness; but you had better have a thermometer in the frame to indicate the temperature—if it exceeds 65 degs. ventilate it to bring it down to that figure; if it sinks lower than that put a lining of stable-manure round the bed, reaching half-way up the frame. Give the bed a gentle watering three weeks after it is spawned; but the water must be warm. In cold, windy weather cover the frame up with mats or dry long litter, or the heat will get blown out of the bed. If you have to make up the bed fully exposed to all the sun, keep the frame well covered up in bright weather.—J. C. C.

OUTDOOR PLANTS.

GOOD ANNUALS.

CLARKIAS.

It would, we think, be well if amateur gardeners would bear in mind the claims of the Clarkias as being amongst the best annuals. They are extremely showy and easy of culture. Seeds may be sown in spring or in autumn out-of-doors. When the plants are in their flowering quarters a distance of 9 inches to 12 inches apart should be allowed. Most annuals are spoiled by overcrowding. A good form of White Clarkia is here figured.

EVERLASTING PEAS.

THESE start early into growth, and anyone anxious to increase his stock should lose no time in lifting and dividing, as they push out strong underground shoots before making any show above ground. They are not only valuable plants for screens or covering arbours or wire-fences with a wealth of foliage and bloom, but they are specially adapted for cutting. Although there are several varieties of Peas of Everlasting or herbaceous habit of growth, Lathyrus latifolius is the best, for it produces large spikes of rose-coloured flowers on long, stout footstalks that are most useful during the latter part of summer, when a good many of the garden flowers are beginning to wane. It is not at all particular as to soil or situation. I plant the roots at this time of year in any bank or spare piece of soil, and stick in some good stout, rough Pea-sticks, and let the Peas ramble at will over them, and will do they repay the space they occupy. The white variety, Lathyrus latifolius albus, is a charming plant, but by no means so vigorous as the rose-coloured variety. I grow this against low walls, on which some wire-netting is fastened to train the growth to; and in preparing the site, I take out a wide trench two spits deep, and in the bottom I put about 15 inches of brick rubbish, and on this a layer of turf, and fill in with good garden soil. The plants are put in about 3 feet apart on slightly raised mounds, and when in good condition few white flowers are more useful than this one is.

J. GROOM, Gosport.



A good form of White Clarkia.

inches in diameter, and place them just under the surface about 8 inches or 9 inches apart, and then beat or press down the surface to a firm and level condition; and when it is ascertained that the spawn is working freely, cover the bed with the Damp soil one and a half inches, beating it down with the back of the spade. Leave

3188.—Culture of Pinks.—The Pink should be more grown in gardens, as it is not difficult to cultivate, and gives plenty of flowers early in summer. You will find Mrs. Sinkins one of the most useful kinds, but the flowers are unfortunately much given to splitting. They are, however, large, white, and fragrant. Then

there is the charming fringed white, called *fimbriata alba*, the common kind familiar in every cottage garden, Anne Boleyn (rose, the centre deep-crimson), Ascot (pink, the centre carnies), Lord Lyons (deep-rose), and Rose Perfection (cherry-rose). A few of the choicer show kinds comprise: Minerva, Boiard, Ethel, Modesty, Empress of India, Ernest, Henry Hooper, Duke of York, Duchess of Fife, and Louisa, James Thurston, Eurydice, R. S. Hector, Ophelia, Godfrey, Amy, and the Rector. I do not know whether they are all in cultivation, but that may be ascertained on application to a nurseryman who especially grows this class. The White Pinks, Anne Boleyn, the Clove Pink, Ascot, and Lord Lyons would make a good commencement. Pinks are not so fastidious as the Carnations, and good plants put in now will bloom in the summer, but the soil must be well prepared. The proper time to plant is quite the early autumn and in the spring. Make the plants firm, as they are sometimes loosened by frost, at the same time carefully stirring the surface of the bed, and a slight dressing of well-decayed manure will do no harm. As regards the propagation of the Pink, the best way is by pipings, which may be taken late in June, and they will strike readily in a piece of ground prepared in a shady corner, the soil made fairly rich. Cut the pipings below a joint, dibble them into the prepared soil, and place a hand-light over them. They will root well under such conditions, and even in the open in a shady corner if the soil is light, and in the event of hot weather shaded and wintered with a fine roset watering-pot, so as to make a spray, twice a day. It is not necessary, but hurtful, to drench them; merely, so to speak, syringe them. When dibbled into a wooden box, and stood over a gentle hot-bed, roots are formed very quickly, but it is not necessary to go to this expense and trouble. When rooted, plant them out in a prepared bed to get thoroughly established, and in September put them into the positions they are to occupy in the garden. During the winter season, if there are frosts, then thaws, it will be necessary to look to the plants occasionally to see that they do not get thrown out of the ground. Avoid wet, and we advise you to raise the bed a little above the ordinary level. As you are late with the planting do not delay, choosing the first fine day, and a mulching of well-decayed manure and leaf-mould will afford the plants much assistance. If you need information on growing plants for exhibition flowers, a separate article will be necessary, but I presume you only require the Pinks for ordinary garden decoration.—C. T.

The Japan Primrose.—This fine Primrose should be in every good garden. The plant makes a strong, vigorous growth, and although on its first introduction considered tender, it was soon found to be quite hardy. On the rocky, border, or where opportunity occurs in the woodland, *P. japonica* is at home, delighting in a shady position, which is also moist. The leaves, when the plants make good growth, are large, and the scapes tall, bearing the flowers in tiers, opening one after the other, and thus maintaining a display over a long season. One gets great variety in the colour. The richest is the deep-crimson kind, with a darker centre, but there are also white, salmon-rose, and various other shades. This variety in the colouring makes the plant more interesting. Seed sown in the usual way in a seed-pot, and placed in a frame, will germinate well, remembering that it sometimes remains dormant a considerable time. Those who can plant this Primrose in the woodland will be well repaid by the fine growth of the plants, the long succession of flower, and varied colours. It may also be grown in pots, but I do not care for it thus sown—soot so much as in the open.—V. C.

The Balearic Sandwort.—A charming plant for covering the faingns of stones on the rocky is the Sandwort of the Balearic Islands (*Arenaria balearica*). It covers the stones with a green carpet, spangled in the spring and summer months with a multitude of white stery flowers. When planted against the stones in fairly light soil it will in time creep over them and hide their sharp outlines. This note was prompted by a mass of it recently noticed on a bit of rockery, the position moist, and the plants was of the richest green colour, a reflecting

to look at as the Grass in the fields. It seems to dislike very hot situations, preferring moisture and moderate shade. It is a delightful thing to establish upon a wall.—V. C.

A fine Sunflower.—A very fine Sunflower, one of the best of all the perennial kinds, is *maximus*, which makes a splendid bed in the autumn months. It is well named, the plant growing over 6 feet in height, and the flowers of large size, rich yellow in colour. Although of such bold character it is neither coarse nor engagingly. A well-prepared ground is necessary, but in most gardens this Sunflower will attain fine proportions, blooming freely in the later months of the year. Autumn is most thought of as the best time to plant, but in October or November, with a proper selection of plants, be made as gay almost as summer. The Helianthus are a host in themselves, and of many kinds this is of fine character.—V. C.

Garden edgings.—I have noticed lately several queries in GARDENING respecting garden edgings and substitutes for tiles. In very large gardens plants are used for edgings, and such things as the Mossy Saxifrage, Thrift, London Pride, and Stonecrops are excellent for the purpose, not being cold and hard as the common tiles one sees in gardens. A very charming edging is made of stone, over which Stonecrops and Saxifrage are permitted to grow. In country gardens the Centianella may be encouraged as an edging, its mat-like growth adapting it well for this purpose. The Common Thrift (*Armoracia vulgaris*) is a very distinct edging and pleasing to look at all seasons, being rich-green throughout the winter, and when in bloom a mass of rose-pink colour. London Pride is another plant for edging, and if not allowed to get starved flowers freely. It is usually thought, however, that this familiar plant will stand the roughest treatment and the poorest soil; but it must have good ground to ensure satisfactory growth. In the London parks, Regent's-park in particular, the Mossy Saxifrage and London Pride are freely used, and succeed well in spite of smoke.—V. C.

3291.—**A flower-hed.**—Begonias (Tuberous) are the plants for your purpose. Procure enough one-year-old tubers (mixed colours look best, I always think) to fill the bed when planted about a foot apart. Start them in shallow boxes of sandy loam and leaf-mould in the greenhouse, pot singly when in growth, and plant out the second week in June. They will flower continually until the first frost. If you cannot do this, you must buy plants in growth. Work the hed well, and mix a moderate quantity of leaf-mould, spent Hops, or well-decayed manure with the soil.—B. C. R.

—You must wait until the foliage of the hulbs has died down before you lift them, if you wish to get a good display of flowers next season. At the end of May you could plant many charming things. Tuberous Begonias would bloom throughout the summer until cut off by frosts, and the plants, if of a good strain, are very neat and the flowers bold, varied in colour, and produced above the truss of rich green leafage. They would certainly make it brilliant; and you could have as an edging some variety of Tufted Pansy as *Achillea Crant*, the colour of the flowers agreeing, of course, with the kind of Begonias used. A white-flowered variety, with an edging of light blue of Tufted Pansy is very pleasing. These you have also Zonal Pelargoniums, succulents which are very interesting in a bed, if several kinds are mixed together, Lobelias, Calceolarias, Potunias, and various other bedders; but I should plant Tuberous Begonias, one colour for the centre, then a line of another shade agreeing with that in the middle of the bed, and an edging of Tufted Pansy. Tuberous Begonias seem less monotonous than Pelargoniums, Potunias, etc.—C. T.

3283.—**Flowers under trees.**—Bulbs, such as Anemones, Snowdrops, Daffodils, and Wood Anemones, would do very well for early spring flowering. Primroses also and Polyanthus would be suitable, as would also *Violas* in variety, Forget-me-nots in variety. The British plant Woodruff, would be charming. One of the Everlasting Peas might be planted to train up the stems. Clematis *Flammula* might be made use of in the same way. Among annuals, *Limnanthes Douglasi* and Nasturtiums in variety would help to brighten up the place

and some of the long shoots of the tall Nasturtiums might be trained up into the trees.—E. H.

—There are very few annuals that succeed to any extent in shade; but seed of Pansies sown at once in a frame will produce flowering plants by about July. Auriculas, Primroses, and Polyanthus sown now will also flower next spring, and thrive well. Other suitable subjects are Violets, Lilies of the Valley, Periwinkles, Daffodils, Hypericums (Rose of Sharon), Hespaticas, Myosotis (Forget-me-nots), and Snowdrops.—B. C. R.

—You cannot grow annuals or such things under the shade of trees, but Daffodils will do well. In market gardens this bulb is largely cultivated thus, and a charming picture is produced, as well as ample cut-bloom afforded. Lily of the Valley might be also planted, as it likes partial shade, and good clumps of it put in at once will bloom this year. You may plant Wallflowers, Forget-me-nots—and they look remarkably well under an Apple-tree—Solomon's Seal, and Spanish Squill. I like to see Daffodils, however, preferring them to anything else for such a position.—C. T.

3273.—**A hed of Begonias.**—I do not think you will be very successful in pegging these plants down, as the stems are very apt to snap off just above the bulb if pulled about. If you want nice dwarf plants have nothing to do with old bulbs, which always grow more or less tall and "leggy," but procure either quite small tubers of last year, or good forward seedlings of this season; these always make the prettiest plants to my mind.—B. C. R.

—Why not let the plants grow their own way to develop their characteristic habit and growth? The Tuberous Begonia is one of the most compact plants one can use for bedding, yet it is not general. If you get a good strain you will not be troubled with leggy stems, but the growth will be even, bushy, and the flowers produced in profusion just above, a rich and effective result. If you put out good plants as soon as all fear of frost is over, you will get a rich display of colour if a variety of colours is chosen.—C. T.

3211.—**A wind-swept garden.**—I should think you are well advised by "J. C. C." to set a double row of Elms at the north end of your garden. But with an extent of 2 acres in such a situation you will not find one break to the wind sufficient. Where there is anything in the nature of a draught the current sweeps down again very soon. You will need several screens across the garden. If you plant hedges, Hawthorn or Beech might serve the purpose, or perhaps one of Damon-trees amongst the vegetables. Yew or Box will make a more fitting screen near the lawn or flower-beds. Watted hurdles or rough woodie trellises covered with Creepers might serve and take less space. Years ago I saw a garden in a very windy part of Cheshire, near the Mersey, that was a good example of making the best of a bad site. The house stood in about an acre of ground; a leafy screen of trees enclosed the whole plot. In front of the house was a small paddock; behind, the ground was divided into little squares by deciduous hedges, at least 10 feet high. The garden was famed for its fruits, especially Peas; they grew on low trees inside the close. Original and unusual in aspect, this garden had a charm of its own. On the windiest day on that bleak coast there must have been shelter in that sequestered spot. Screens are largely used in the Scilly Isles. Without this protection it would be impossible for the inhabitants of those exposed islands to grow the Daffodils and other spring flowers that they export in such numbers.—ALL WINDS' HOUSE.

3248.—**Seeds of hardy perennials.**—The best way is to sow these in well-worked beds of sandy loam, with which has been incorporated a moderate quantity of leaf-mould. If the weather is dry, cover with mat until germination has taken place; these are better than Moss or litter. The seed may be sown either broadcast or in drills, preferably the latter, on account of the greater ease of weeding. Sandstone grit is quite unnecessary; if the soil is naturally coarse or rough, make up a fine surface with old potting-soil, road-sweepings, or the like. Some time in April is the best season to sow.—B. C. R.

FRUIT.

BEST EARLY APPLES.

ECHLINVILLE SEEDLING.

THIS Apple (here figured), as is pretty well known, grows to a prodigious size, and generally is a free bearer, and it cannot be surpassed for cooking whilst in season. It does best as a naturally-grown pyramid, with very little pruning. As a dwarf standard, with, say, a stem of 3 feet, it succeeds well. This variety is quite as profuse as the old Keswick Codlin in the formation of fruit-huds, these appearing even quite plentifully on the wood of this current season, and this on the Crab-stock, which is well suited to the variety. A.

SLOPING VINE BORDERS.

IN the majority of cases Vine borders have to be of dimensions, form, and constituents not always under the control of those who make them, but there are many blunders that might often be avoided. The prevailing idea would appear to be that they must be given a good slope from the back to the front, and, as far as outside borders are concerned, this form answers well, not because a good fall to the front helps to throw off excessive rainfall, but rather on account of a slight angle bringing the border more under the influence of all the sunshine going. Now I believe that this plan of sloping outside Vine borders may easily be overdone, while they are altogether uncalled-for and faulty when similarly constructed inside the houses. Warmth and air are undoubtedly most congenial to Vine roots, but when these conditions are made paramount, events may not prove so satisfactory as anticipated. The roots, and through them the Vines, more often than not suffer from want of moisture than of heat, and it is the sloping borders that dry up the most quickly, being also much the most difficult to re-moisten. Nor is this the only fault I have to find with this class of border. It is my firm belief they do more to promote an injuriously deep root action than is atoned for by an increase in the temperature of the soil over that of more flat or nearly level borders. The cultivator, by top-dressings of a root-enticing or root-inducing material, contrives to fill the surface of the border nearest the stems with abundance of root-fibres, only to lose many of them when their hungry points spread a short distance towards the front. A portion of them strike downward, but only a comparatively few find their way into the surface of the more shallow part of the border. Doubtless much can be, and very often is done towards keeping the fronts of borders well filled with roots by means of liberal top-dressings of soil and manure, mulchings of leaves and straw manure also being applied; but these alone are not sufficient, and plenty of water must be supplied during a moderately dry time, or otherwise not many healthy root-fibres will be found. When we come to discuss the state of sloping

INSIDE BORDERS, the objection is even more pronounced against this method of forming them. In not a few instances the gardener has scarcely any choice in the matter, or is under that impression, the initial mistake having been made by the designer of the structure. Too often the foundations are not got out deep enough to admit of a good depth, or, say, from 30 inches to 3 feet below the door-sill or level of pathways being obtained, and raising either the one or the other being almost out of the question, a sloping border is the almost sure consequence. The very illustrations of vineries given by some of the leading horticultural builders, showing inside borders, make these sloping abruptly to the pathway on both sides, no matter how narrow one or both of the widths may be, and unless the gardener has had some previous unsatisfactory experience in the matter, that is

the inevitable style of border that will be made. To make matters worse, the hot-water pipes are also fixed very low, and not unfrequently only a short distance from where the stems of the Vines will be located, the evil being aggravated accordingly. In the latter case not only is there every prospect of the narrowest portion of the border becoming much too dry, but that at the deepest side will also be robbed of much moisture by the hot-water pipes. Plenty of cuses are met with where the return-pipes are actually buried in the soil or mulchings, rendering this "as dry as a bone," and destroying all active roots that come into contact with it. Once borders thus situated become dry, it is next to impossible to re-moisten them by ordinary measures, and if the roots leave such unsuitable quarters and force their way through brick or stone walls into the open ground, this is nothing to be wondered at. In this neighbourhood there are two vineries with inside borders necessarily made sloping to the pathway, but, fortunately, the gardener in charge fully realised the danger of allowing them to become quite dry, and the quantity of water applied during

three or four years. Many of the old roots found might well be cut back 4 feet or more, while those better furnished with fibres or presenting a healthier appearance generally, few of which probably will be found within 4 feet of the boundary wall, might be preserved. A width of from 4 feet to 6 feet having been cleared, the latter figure being by no means extreme, especially in the case of very old or much exhausted borders, add a fresh width of 2 feet or rather more of good, fresh, loamy compost. This must be kept up together by means of a wall of turves, the next best thing being a loose brick wall, which will be found quite strong enough for the purpose. A perfectly flat outside border is neither necessary nor desirable: but it ought to be made very nearly so, the front wall being built up to a good height accordingly. The new portion of border should be sufficient for two years, and when the time has arrived for adding another width the front of the turf wall may be shaved off with a spade, and the new soil be packed firmly against the old loam. The latter being well stocked with roots it will not be long before the new soil is also taken possession of, the consequence being an improvement in the Vine's health. It may not always be convenient or possible for a new width of border to be added, good loam, for instance, being very scarce in many gardens. In this case, the slope of a border may be gradually lessened by simply lightly top-dressing the deepest part, and more heavily so the front, with fairly rich loamy compost. This should attract many roots, and in any case render it a much easier matter to well moisten the border whenever necessary. Doubtless the autumn, or before the leaves are changing colour, is the best time for interfering with the roots of Vines; but there is no good reason why it should not be done any time before top-growth is far advanced this spring.

TOP-DRESSING may be applied with advantage at almost any time of the year. Inside borders may be levelled in much the same way, turf walls answering even better under glass than they do in the open. I have seen them bristling with great white roots, and the borders, when raised well above the level of the walks, and kept well supplied with water, must derive great benefit by the extra exposures to heat, air—moist or otherwise. Better by far be content with a comparatively narrow square border, say, half the width of the house, than have a much wider sloping border that cannot so readily and surely be made congenial to the roots. Every drop of water applied to a level border must find its way downwards or to where it is most needed; whereas, there is very much waste connected with those that are sloping, especially if, as before hinted, they are allowed to become the least bit dry before the attempt is made to properly moisten them. Square or level borders are, therefore, the most economical, and there is no mistaking which proves the best for the Vines to root into. W.



OUR READERS' ILLUSTRATIONS: Apple "Echlinville Seedling." Engraved for GARDENING ILLUSTRATED from a photograph sent by Mr. W. Cooper, Manton, Frome, Somersetshire.

the growing season was almost startling. They are well watered, sometimes once and frequently twice in one week, and if only there had been more head-room allowed, no fault could be found with the weight and appearance of the crops produced during the past six years. But what if water had been scarce—and it is far from being plentiful in the majority of gardens? Or, again, what would happen if a fresh man, who did not consider the risks to be run, or, in other words, either did not believe in the necessity for or neglected to give so much water as previously, took charge of the place? Failure inevitable and complete would be the result of either a scarcity of water or neglect to apply it in abundance, always provided the Vines were unable to send their roots out into a moister root-run on the other side of the foundation walls. Having pointed out

THE EVILS attending the construction of sloping borders, it is only right that I should suggest a way out of the difficulty. This is simple enough as far as outside borders are concerned. In not a few cases it would be a very judicious proceeding to considerably reduce the width of these borders, at any rate for some

3292. — An Apple-tree for a small garden.—It is not wise to encourage the growth of two kinds on one tree, especially such a weak growing sort as Irish Peach. No variety that I know of in the whole range of the kitchen section would match this dessert Apple in point of constitution, as it is naturally a weakly growing sort. Much better results would be obtained by restricting the whole of the tree to one kind. If an extra early Apple is wanted for the dessert Irish Peach is good, but a much superior Apple is Cox's Orange Pippin in every respect. The best early Apple for cooking purposes is Lord Grosvenor, and for late use Lane's Prince Albert, both remarkably free bearers.—S. P.

A northern garden.—For the encouragement of those who live in bleak districts in the north, I should like to say what flowers I have sown (Feb. 23rd) out in my garden, which two years ago was simply a field. Four kinds of

Christmas Roses, Aconites, the large Snowdrop, the Pink and White Winter Heath, the large Hepatica angustata, Pink and White Mezerion, Bulboodium verna, and Saxifraga Boreociana major. Besides these the flowers of little alpine Rhododendron are almost expanded, and are only waiting for a little sunshine, as are also the rosy blossoms of Saxifraga oppositifolia, the Pink Doge-tooth Violet, the ordinary Violet, the delicious sweet-scented Winter Heliotrope (Tusillago fragrans), and the bold and yellow flowers of the Doroicum, and the Pink Megasea, and one of the Andromedas. Among the flowers out, I forgot to mention the Winter Jasmine, which has been in great beauty since November. I live on the Harrogate side of Leeds, and in a very cold, wind-swept district, but I do all I can by hedges and walls to protect and make cosy nooks for my dear flowers. I have also several large raised mounds, with a few large sandstone blocks half buried in the rotted turf of which they are formed, in which smaller things that could not do with the cold damp of clay in winter live and flourish exceedingly. I think I have said enough to show that the coldest garden may be brightened by a few flowers, even in the blakest season of the year, if their owners will have it so, and will take ordinary care in planting and sheltering them. —NORTHERNER.

TREES AND SHRUBS.

3281.—**Planting Rhododendrons.**—If the loam is suitable in which the Rhododendron are planted it is a good plan to mix with it some sand, and if leaf-mould can be obtained this is better than manure; but a little manure, well-decayed, is excellent for Rhododendrons, and may be used whether they are planted in loam or peat. All kinds of loam do not suit Rhododendrons, and if it contains lime they will not thrive in it.—J. D. E.

— There is a great deal of support in good peaty soil, owing to its being in reality formed of decayed growths; hence, Rhododendrons do not need much artificial support when growing in such soil. In loamy soil, a little soot keeps it dry and more open, and also aids these plants very much. Well-decayed stable-manure, especially such light material as comes from an old and dry Cucumber or Melon-bed, is also very beneficial when planting Rhododendrons upon loamy soil.—P. U.

— If the loam is suitable for Rhododendrons they will do better without manure than with it, but unless your loam has been tried and found suitable, you nor any one else can say if they will take kindly to it. The composition of loam, however, differs so widely that it is just possible that which you have may answer. I am well acquainted with the behaviour of Rhododendrons when growing in a loamy soil, which they like, and my experience is that they make stronger growth and produce larger trusses of flowers than those cultivated in peat, and I feel certain that manure mixed with the soil would be a positive injury, unless it was decayed almost into a powder. Thoroughly rotten manure spread on the surface they do not object to—ca a matter of fact, when it gets well decayed the roots will come to the surface for it. As you evidently have to make your soil, I advise you to excavate the bed rather deep, if the position is naturally well drained, and in doing so allow a depth of 2 feet of soil, with the surface just under the surrounding level; this will give you space above for giving a top-dressing every second year, without injuriously raising the bed to the drying influence of sun and air.—J. C. C.

— Good loam will grow these shrubs well. Peat is better, but on loamy ground I have seen splendid plants. If, therefore, your soil is of this character, you need trouble no further, as you may expect excellent growth. When planted give a good watering in dry weather during the summer, as Rhododendrons are apt to suffer if neglected in this respect. The finest examples in the country are grown on the fine Surrey loam.—C. T.

— Unless the loam is naturally poor, the plants will do just as well without manure as with, and whatever of this kind is used must be thoroughly decayed and sweet. If, however, leaf-mould is procurable, it may be freely used, both mixed with the soil and applied as a mulch after planting, with the greatest benefit.—B. C. R.

— Over the red sandstone found (in the) throughout the country from One-hire to Worcester, the Rhododendron grows very well in the red loam, but I always found when I lived among them that a top-dressing of old leaf-mould, or very old cow-manure, had a beneficial effect upon the size of the blossoms and the vigour of the plants.—E. H.

3272.—**Watering Ivy.**—It is too early yet to expect Ivy to make much growth. It will grow fast enough presently. In the way of a stimulant the best thing is nitrate of soda, 1 oz. to the gallon of water. Dissolve a handful of soot in each canful as well, and soak the ground around the plant thoroughly with the liquid about once a month during the summer. If in a town the soot may be omitted.—B. C. R.

— Liquid-manure, or a top-dressing of manurial compost, spread over the roots as a mulch will encourage the plants to make stronger growth. Old leaf-mould or very old manure mixed with loamy soil, used as mulch, will be a great help. Drainage from a manure-heap, or guano dissolved in water at the rate of half an ounce to the gallon, may be used.—E. H.

— Ivies do not care for a good deal of water; all they need is a fairly moist soil. But if your position is unusually dry an occasional copious watering will benefit them. As you do not give the name of your variety, it is impossible to judge if it is naturally a strong grower or not. Although Ivies will thrive in very poor soil, they prefer a rich and open compost, and, minus these, applications of manure-water will benefit them a great deal. The drainings from a stable, freely diluted, guano at the rate of 1 oz. to a gallon of water—in fact, almost any liquid stimulant will answer your purpose. There is, however, a vast difference between the habit and strength of Ivies, and it is a pity you give no guide as to your variety.—P. U.

— There is nothing much one can do except to leave the plants alone. It is quite unnecessary to dose Ivies with a liquid-manure or artificial preparations. The plants cannot be expected to make great headway in two years, but if they were planted carefully and have since been given ordinary cultivation they will succeed well. Many complain that Ivies make such poor growth at the commencement, but the truth is that any kind of planting is thought proper. They are simply stuck in the ground and left to themselves. Always put in good plants, and during the first two summers or so water them liberally in hot weather. Perhaps you have got some tender kinds or small-leaved varieties that will not grow so strongly and quickly, or such sorts as Emerald Green, canariensis, and Ragnersia. If the position is very hot, and the soil unusually dry, as it is sometimes against a house, the growth of the plants would not be very rapid. In that case give plenty of water in the summer months. Ivies like moisture and shade.—C. T.

3283.—**Lilac-bushes in a London garden.**—"Solano" cannot do more than he has done in order to induce these trees to flower in his position. They need a fair amount of light and sunshine to mature the bloom-buds, otherwise flowers of any merit cannot result. As your plants are growing healthily, I would not manure them any more for a couple of seasons, when perhaps a less vigorous growth may mature more thoroughly and set itself flower-buds better.—P. U.

— Remove the encumbers about the base of the shrubs, and provide the plants with an open, sunny spot, where they can get plenty of light and air. These are the chief things to consider, as the shrub will grow in almost any kind of material, but not make progress if cramped for room or deprived of proper air or sunshine. If your plants are healthy, and the spot is not shady and enclosed, there is no reason why they should not grow well. But doubtless it is the position they are in that is the cause of the mischief. In Battersea-park, for instance, the glorious masses of Lilacs are the chief charm of the place when in flower, but they get the two essential conditions, light and air. Lilacs are good town shrubs when thus provided, or rather, one ought to say, excellent to plant in suburban gardens. Not many miles from the City I know several splendid specimens, given no attention from year to year, yet flowering profusely each season. They are, however, in full light and get an abundance of air.—C. T.

— These should be moderately manured and pruned annually, cutting out the suckers and young shoots from the base, but they never flower so freely in town as in the country. The Persian Lilac is the most prolific variety.—B. C. R.

3282.—**Gold and Silver Ivies.**—It is interesting to get so many queries in GARDENING about Ivies, as they are very charming in their variegated forms. As regards cultivation, Ivies do not really want any, the great point being in the first place, especially of the variegated kinds, to get good plants, so that they will grow away at once, and cover the wall quickly. Also during the first summer, until they get thoroughly established, give liberal watering occasionally. Unfortunately, some of the best variegated Ivies are very tender. Madeiraensis variegata, which has bold, well-marked leaves, gets much injured in the winter if the weather is severe for any length of time, and Algeriensis variegata is also apt to suffer. If, therefore, the situation in which you are going to plant them is at all cold, exclude these kinds. The following will, however, prove suitable, and the variegation is well marked. You must try and get them true to name, as, from my experience, varieties are called by different names in the various nurseries. Amongst the small-leaved varieties choose those named, and of each variety a short description is given. Marginata major is very useful, the leaves medium in size, and with a bold margin of yellowish-white colour; the growth quick. Some of the variegated Ivies are not well coloured. Palæsta aurea, for instance, is variegated in name only. Latifolia maculata has large leaves, marbled with a whitish colour; and a suitable kind is also H. rhombos variegata. Marginata robusta has large foliage, margined with silver. Those with small, silvery leaves of value are minor marmorata, which are well variegated, Folia argentea, margined with silver, and H. japonica. As regards the golden-leaved kinds, a good selection would be of the larger-leaved varieties, Folia aurea, the foliage medium in size, and the variegation decided, and it is of quick growth. Aurco maculata is useful, the leaves variegated with a yellowish colour. While of the smaller-leaved varieties may be chosen marginata aurea, the foliage with a margin of gold; and you may also select, if you need bushy varieties, very pleasing in a bed, the silver and golden variegated varieties of arborescens. A very good Ivy for colour is stropurpurea; its leaves are of a rich, bronzy-chocolate colour, abundant, and pleasing to look at in the winter months. All the kinds named are fairly robust, some more so than others; but it is the green-leaved kinds that are the stronger of the two. This is a good time to plant.—C. T.

3225.—**Grafting Rhododendrons.**—There could not be a better time than the present for this operation, provided your stocks are in a fit condition. Seedlings of the common ponticum variety are usually used as stocks upon which to work the choicer kinds. The method known as "whip-grafting" is the one most generally practised. It consists of paring away a portion of the graft and a corresponding part of the stock, fitting the two together and binding them firmly. In the trade it is usual to pot the stocks and work them in February. The shelter of a close pit or under late Vines causes the sap to work early, and, being free from drying winds, a union is effected more securely than if grown out of doors.—P. U.

3288.—**Belladonna Lilies.**—These plants do not flower well in the open ground, unless they are planted in a good position, and in deep, suitable soil—loam, leaf-mould, and sand. They could also be planted in the front of a hot-house, facing the south. They succeed admirably treated this way in Kew Gardens. The bulbs may be planted in June, and if they are to be grown in pots I would also plant them in that month; singly in pots would be the best way, using good sandy loam. They will only flower well if they are encouraged to make good growth, for it is during the period of growth that the flowers are formed for next year, and when the growth has been made the plants must have a period of rest. The Belladonna Lily should be pnt in a glass frame in the hot sun when resting. Donu Herbert writes in the "Ameryllidaceæ," page 278, that he planted bulbs of this Ameryllidæ at 2 feet distance from the front wall of a greenhouse and stove, and in favourable seasons he has had 200 flower-stems rise in September in thick patches. He adds: "I have seen City stems in close contact. A

rich and even strong and manured soil is agreeable to them, and a south wall promotes the dying of the roots in summer. They very rarely flower with me in the middle of the garden."—J. D. E.

I do not advise "Black Bees" to attempt growing these Lillies in pots or tubs unless she has plenty of room in her greenhouse, as they require a good deal of space through the winter, when room under glass is most valuable, as they begin forming their leaves early in the autumn, and develop them during the winter when the conditions are favourable. If they are unfavourable they make only a poor attempt to grow, and then they do not flower. If you make the attempt to grow them in pots take up the bulbs at the end of July, and provide them with plenty of root room and a strong, but not overrich, soil. I advise you to try the effect of giving them the protection of a cold frame during the winter, so as to protect the leaves from injury. Take up the bulbs at the time I have suggested, and plant them close to a wall facing south, so that they can have fresh soil, and have a frame made about 18 inches wide, with a movable light to put over them during the winter—a long, hot-bottomed box with glass on the top would do. You will never get any flowers until the leaves

blooming as they do in large olustera; Banksiaflora, Félicité Perpetue, and Leopoldine d'Orleans are three of the best light kinds, with Flora and Princess Marie of the darker or rose-coloured varieties. These, like the Hybrid Bourbons, require merely to have the weakest wood thinned out, leaving all the strongest or as much as can be used. Of the Hybrid Perpetual class the following are a good half-dozen: Olory of Cheshunt (one of the best of all the red sorte), Princess Lonica Victoria (very free in the autumn and a good climber), Boule de Neige (the best of the whites), Climbing Pride of Waltham (pink), Climbing Edouard Morron (rose colour), and Climbing Victor Verdier (bright-rose). Of the Hybrid Teas, Cheshunt Hybrid (carmine), and Reine Marie Henriette (deeper carmine), are two of the best, both growing freely. The Climbing Tea Roses of the Dijon class are amongst the best of all. Oloiro de Dijon must still be included; to it should be added Mme. Borod (of a deeper shade), Kaiserin Friedrich (a beautiful newer kind, very vigorous), Mme. Eugene Verdier (chamois-yellow), Waltham Climber No. 3 (bright-crimson), and Belle Lyonnaise or Bouquet d'Or (the former a pale kind, the latter a deep salmon-yellow). To these must be added Céline Forestier (pale-yellow), Rév-

higher and larger in the back row, and instead of having more room they receive considerably less. Boxes can always be pitched at any angle after they are placed on the staging bench. For six Roses I use a box 18 inches square. One does not want his set of twelve or six to appear as a continuation of his neighbour's, and a little extra space prevents this. Keep the tubes well towards the centre of the boxes, forming three rows deep, whether it be for a set of six or twelve, four in a row, and two in a row respectively. As regards fixing the tubes, much must depend upon their make. I know some who simply about half-fill up their box with short Grass or litter, and then insert the tubes, afterwards filling in between with the freshest Moss they can obtain. By-the-way, fresh Moss helps the appearance of the blooms wonderfully. My own tubes are made with a square foot, and over the corners of these I tack a thin lath, which keeps them firm and in their places during travelling. I afterwards fill in between them the same as already described. This is the most secure and simple way. If boards be used and a thin layer of Moss placed over this, there is the difficulty of making the same stick occur, there not being sufficient depth of Moss to hold them.—P. U.

3203.—Climbing Roses in a lean-to house.—As you want the flowers for cutting Cheshunt Hybrid appears to be a suitable Rose for your purpose, as it is a vigorous grower, but it is unfortunately very subject to mildew when grown under glass. General Jacqueminot would be my choice for such a position, as it gives you the colour you want. Then there is Reine Marie Henriette (Red Glory) which is a capital grower, and if it gets plenty of light it flowers more or less all the summer.—J. C. C.

I should much prefer Reine Marie Henriette to Cheshunt Hybrid. It comes darker, of better shape, and keeps its colour better than the Rose you suggest. I also consider it a much freer bloomer. Yes, you can grow Chrysanthemums and a few Camellias in the same house very well.—P. U.

3298.—Roses for the garden.—"Rosy's" experience of the varieties named is very much the same as my own. Silver Queen makes good growth, but opens much best during a dry summer. So, too, do the other more double varieties mentioned: Marie Rady, Comtesse de Serenye, and Ferdinand de Lesseps. The former of these must not be grown too generally if good blooms are to result. I find it does much better when cultivated upon rather poor ground. Reynolds Hole grows well with me, but does not flower very freely. The following are twelve good Roses, and I have placed the six dark ones first: Charles Lefevre, General Jacqueminot, Victor Hugo, Abel Carriero, Prince Arthur, and Madame V. Verdier; Mrs. J. Laing, Margaret Dickson, Boule de Neige, Misse Hassard, Elie Morel, and La France.—P. U.

Some of the Roses you mention are not habitually bad doors—Marie Rady and Comtesse de Serenye, for instance—the others, however, are of doubtful character, and I advise you to discard them. The following dark Roses are sweet-scented and fairly good growers: Prince Camille de Rohan and E. Y. Teas (crimson), Eclair and Lady Helen Stuart (pink and other shades of colour included), Mr. J. Brownlow, Duchess of Albany, Mrs. J. Laing, Rosy Morn, Heinrich Schultheis, La France, Magna Charta, Marie L. Pernet, and Elizabeth Vigener.—J. C. C.

I am pleased to know that sweet-scented Roses are asked for. Everything, however, nowadays seems to point to the exhibition, and the finest show blooms are often, unfortunately, either practically scentless or very slightly fragrant. One of the most fragrant Roses I know of recent raising is Angustine Ouinoissean, a beautiful garden Rose, popularly known as the White La Franca through its deliciously sweet flower, which are produced freely, and white, touched with soft rose. It is a good autumn bloomer, and should be in every garden, whether large or small. Another exceptionally fragrant Rose is the Hybrid Comte d'Espresmel, one of the R. rugosa section, the flowers semi-double, but so fragrant that a few will scent a large room. It is one of the most fragrant Roses I know, and makes a fine spreading bush. Then you can have Oloiro de Dijon, La France, the Hybrid Bourbon variety, Mrs. Paul (the flowers large, white, with the petals margined with a rosy tint, and of fine form), the well-known Souvenir de la Malmaison, Caroline d'Arden (a



Roses on arches.

develop properly, and if you live in the north of England you had better give up their culture altogether.—J. C. C.

ROSES.

ROSES FOR ARCHES AND PILLARS.

ROSES which possess a vigorous constitution and annually make long growths for flowering the following year are the most desirable varieties. Selections may be made both for early flowering and for more continuous bloom through the season. Of the first-named class are the Hybrid Bourbons, some of which are the finest Roses grown when treated properly. My own plan is to lay in all the strong wood and thin out the weakest every spring; on no account should the vigorous shoots be pruned, or fresh wood will only ensue. These strong shoots should not be left upright, but be trained over or downwards; hence they are better suited for arches. Thus treated they will bloom most profusely, yielding an abundant supply of flowers before the Hybrid Perpetuals are in many cases showing colour. Of the Hybrid Bourbons, the four finest are Blaire No. 2 (blush-pink), Charles Lawson (vivid-rose), Coupe d'Hébé (deep-pink), and Vivid (crimson). Hybrid China Mme. Plantier, a pure-white, is a delicately beautiful old-fashioned Rose, and very free-flowering. The Bourbant Roses should not escape notice; they are of the hardiest, and will thrive where many only fail or drag out a miserable existence. Amadis, one of the earliest, gracilis (bright-red), and elegans (crimson) are all good sorts. The Evergreen Roses (R. sempervirens) are among the very best for roses

d'Or (buff), the well-known W. A. Riobardson, and Lamarque (pure-white, should have a warm spot) from the Noisette class. For poor or cold soils the selection should chiefly be made from the Hybrid Bourbons, the Evergreen Rose, and the hardiest of the Teas and Noisettes, as Gloire de Dijon and Révo d'Or. In such positions manure should be used freely, that from the farmyard being preferable; draining should also receive attention, being most essential. Moderate pruning the first season is advisable to form a good face. The ground for these Roses should be deeply dug or tronched, adding fresh soil as well as manure if the ground is not up to the mark. A mulching after the planting is done is advisable; for this I would prefer Cocoa-fibre to manure, as the birds would not be so disposed to interfere. Secure all the shoots then at once, or they may be injured by the winds, "caulker" afterwards setting in upon any gross shoots if damaged in this way. R.

3280.—Exhibiting Roses.—The National Rose Society does not make any hard-and-fast rule relating to the sizes of boxes when exhibiting Roses—they simply make a few suggestions. As a member of the society, and an exhibitor for some years previous to its formation, I have found the following dimensions all I could wish: For twelve Roses my boxes are 2½ feet long, 2 feet 3 inches wide, and 18 inches deep. One foot of the depth is taken up by the lid. This is where it is most wanted, as you thus afford ample room for the blooms. On no account have any boxes that are made on a bevel, or higher at the back of the bottom part than the front (as in the illustration). Your flowers naturally want to be

rose-coloured H. P., very sweet, the old General Jacqueminot (crimson, but exceptionally sweet), Noisette Lamarque (which requires a south wall), Marchal Niel (also needing a warm position, and better under glass than outside), and such H. P.'s as Mme. Clemence Joligneffix, Alfred Colomb, A. K. Williams, and Mme. Gabriel Luizet, whilst all the Teas are more or less fragrant.—C. T.

FERNS.

CHOICE FERNS.

TRICHOMANES PLUMA.

This feather-like Trichomanes is an exceedingly delicate and beautiful species; it has a wiry creeping rhizome, clothed with black hairs, and the fronds attain a height varying from 1 foot to 1½ inches; they are three or four times divided, the segments being very slender, as a glance at our illustration will show. This Fern has always been scarce in cultivation, but its rare beauty should be a sufficient inducement for its greater popularity. Like all this class of Ferns, it requires an atmosphere heavily charged with moisture, exclusion from the sun's rays, and a temperature which does not fall below 60 degs. at any season of the year.

heavily coated with farina, yet claims a place for the grace and elegance of its finely-cut fronds, whilst *G. peruviana argyrophylla* is noticeable for its pendent fronds, which are heavily coated on both sides with white farina, and at others with a sulphury-tinted coating. *G. Pearcei* is another species, with remarkably elegant fronds of a rich-green, and delicately divided, which must not lack a place in the cool fernery, for it comes from Fern, although it has no farina, saving at the base of the stripes; and last, but not least, is the fine variety of *Schizophylla* called *gloriosa*, which is one of the most elegant Ferns in cultivation, either for a hanging-basket or a pot, either with its long, arching, brilliant green fronds, which become proliferous at the apex, and its pinnae are very elegantly divided, and I think it really looks at its best

of square or oblong form, on the ground that he gets more views of the contents, but, provided they are the proper sort and well planted, they will do as well in one as in the other. When planting his Ferns, my neighbour brook up some light coke into pieces about the size of a Walnut, and laid them at the bottom of the case to assist drainage. On this was placed a mixture of peaty soil and Cocoa-nut-fibre, the proportion being two of the peaty soil to one of fibre. In this a few Ferns were planted, but not thickly, and they soon commenced to grow freely. Almost all our native Ferns will grow in a case of this kind, and not a few introduced species also, so the planter can make a choice to suit his own tastes. Water is seldom required, and if the door be kept nearly constantly closed but little evaporation will take place. As a matter of course, the supply of water must be regulated by the season of the year.—D.

CHRYSANTHEMUMS.

3200.—Old Chrysanthemums.—

"H. M. C." must not expect to have large blooms and still have the plants bushy. He can have them dwarf and have nice blooms, though the distinction between dwarf and bushy lies in the fact that the latter have numerous small shoots, whereas the former have but a few, and these upright, not depressed as in the bushes. When the shoots are 5 inches high take out the point of each, this will check the upward tendency of the growth and induce the shoots to increase in number. Restrict the growths to two on each shoot and repeat the topping when they make 5 inches more growth. After that allow them uninterrupted growth, thinning the shoots to three on each main branch which will result in those plants with six growths from the bottom, carrying eighteen blooms and so on. One bloom to each shoot is sufficient to give good results when the quality is of more consequence than numbers. The bud which forms in the centre of each shoot always gives the best results; all those which cluster about it ought to be early removed. Old plants like those of "H. M. C." will require more attention to watering and supplying with stimulants than young ones. They have so many more roots, and these absorb the nutriment contained in the soil so readily.—E. M.

— If you only want a dozen flowers to each plant you may stop the present shoots at 3 inches or 4 inches in length, and when in growth again shift them on into 10-inch or 11-inch pots, allowing one bloom to each stem; but if you want something uncommon, and have the space to house them, stop the growth twice or thrice, shift the plants on until 15-inch or 18-inch pots are reached, tie the growths out carefully, and feed liberally, leaving three or four buds on all the best shoots. In this way I have had plants of Mrs. Bungle, Mrs. Dixon, Fair Mail of Guernsey, and others 5 feet to 6 feet through, and carrying between 200 and 300 good blossoms apiece—not perhaps good enough for exhibition, but fine for cutting, and producing a splendid effect in the mass.—B. C. R.

3245.—Classes of Chrysanthemums.

— You will find the varieties mentioned in the catalogue of Mr. H. J. Jones, Ryecroft Nursery, Lewisham. Le Poète du Chrysanthemes (rose-violet and silvery-white), Mme. de Dubor (white, with stripes and blotches of violet-rose), and Mme. Dufosse (crimson-red, the petals with stripes of gold and tipped with the same colour) are early-flowering Japanese kinds, whilst Strathmeath is an American variety, one of a set of new early kinds sent out by the American raiser, Mr. Thorpe, and described as a cross between Nichols and Mme. Desgrange, the flowers of a very distinct new shade of rose-pink, and of good size, being produced at the end of September.—C. T.

3287.—Enclosing a garden with wire-netting.—I am doubtful about the wisdom of keeping birds out of a fruit garden. I have seen it done and it did not pay. The trees became so badly infested with insects that it was thought better to let the birds have their share of the produce for the help they rendered in keeping down insects. If any garden without birds would not be a profitable one—at any rate, I should have more trouble with insects and



Trichomanes pluma.

POTTING GOLD AND SILVER FERNS.

THE recent bright weather has enlivened things considerably, so that I must recommend my friends who from time to time write to me not to forget these Ferns when the time comes round. Now the young Gold and Silver Ferns are beginning to grow again after the dull, cold days we have had, and all may begin to make ready to set them going again, and to make a really fine display of these Ferns, I would advise the use of last year's young seedlings. Plants which are now occupying a 4-inch or a 5-inch pot should have a shift into one two sizes larger. These pots, well drained and a layer of Sphagnum Moss placed over the drainage, should have for soil about half and half good turfy loam, tolerably light, and good fibry peat, added to which should be some sharp silver sand and a little bone-manure; but this should be well broken, no large pieces of bone being left whole, but yet it should not be quite reduced to a fine powder, because it stands the chance of being washed out of the pot. In the growing season Ferns do like a little stimulant, but this should not be given in excess. Another thing which I have found to work wonders with the weaker Ferns is the use of broken bones for the drainage material. Try this, my friends, and tell me if it does not bring about a marked change. The plants of *Gymnogrammas* should not be tolerated in a fernery more than about two years, after which time they become too sticky and rough at the base, and a young plant is far preferable, and, if potted in the manner described, they soon make nice specimens. In selecting the kinds from the young plants pick out those which display the brightest colours, and the kind called *chrysophylla* presents many varieties from seed, and the brightest and best only should be permanently used. *O. sulphurea* is a pretty constant kind, and, although pale coloured, is a perfect gem, when well grown. The same may also be said of *G. Harminari*, although somewhat less pronounced than *chrysophylla*. *G. Lauchiana* is a good robust form of the last-named species, well deserving attention, whilst *G. obrysophylla cristata* is a very fine variety, with dense corymbose heads, and the form known as *O. luteo-alba* is a broad, massive-looking plant with a heavy farinosa yellow coating on the under-side; but I have only seen this in some gardens in the neighbourhood of Berlin, but it is a variety well deserving more extended cultivation. In *G. calomelana* and *G. tartarica* we have the fine Silver Ferns, which, however, vary very much, and require selecting in a young state, and, in fact, the first-named plant I have seen quite distinct of farina. *G. pulchella* is a beautiful plant, with finely-cut and very white farina on the under side; and *G. gracilis*, which I first saw in a Hamburgh garden, is quite a gem, being finely divided, very symmetrical, and covered below with a copious white farina. *G. Wettonhalli*, and is a crested variety, coated with a sulphury powder, and *G. decomposita* is another species, although not

when in a hanging-basket. There are a few other species, and a lot more varieties, which I could have called attention to if I had thought it was necessary, but this will be enough to satisfy my readers I have no doubt. Now with these plants coated with a farina which can be moved off the fronds with ease, my friends must understand the syringa must be kept quiet, or if used it will make a blurr in the whole lot; therefore, although maintaining a nice moist atmosphere, never let any water be used upon the fronds, but maintain a temperature not lower than 65 degs., and your *Gymnogrammas* will grow and do well. J. J.

Ferns in cases.—A neighbour of mine, who has been highly successful in growing Ferns in a case, prefers one of octagonal shape to that

should lecur a heavy expediture is insecticides and washes. It might, of course, be managed so that the birds could have free access at all seasons, except when the fruit is ripe, or for a month or two when the buds were on the move early in spring, and in one instance where this was done the netting was thought to be a success. Two-inch web would be too large for the top, as small birds would get through it and eat the buds in spring.—E. H.

—2 inch mesh would keep out Blackbirds and Thrushes, 1-inch would keep out all birds, excepting the small warblers and Tits; but to ensure your garden against all fruit-eating birds you must use 1/2 inch mesh.—A. G. BROWN.

ORCHIDS.

MASDEVALLIA SHUTTLEWORTH.

I HAVE seen this plant recently doing so well and flowering so freely, and its blooms are so pleasing, that I am persuaded to recommend it to the growers of such plants as *Odontoglossum Alexandre* and *O. Pescatorei*, for in such a temperature as these delight in this *Masdevallia* also does well. It is now nearly twenty years ago since this plant was first found by my very old and good friend Mr. Shuttleworth, while engaged in collecting plants in New Granada for his employer, Mr. Bull, of Chelsea, and at that time it was considered very rare. It has, however, been found in some considerable numbers since then, and has been introduced successfully to our gardens, and, therefore, I bring it to your notice. When I first saw it in flower, which is fifteen years ago this very month, I thought it then, as I do now, one of the most lovely gems in the whole family of Orchids. It has been made to suffer somewhat in its character of specific rank by being made to fall in as a variety of *M. caudata*, which is a plant that was named by Lindley upwards of sixty years ago, and it is only conjecture that the present plant does belong to *M. caudata* at all, so that I am quite in accordance with Hooker, who published a figure of this plant in the *Botanical Magazine*, t. 6, 372, and which, although capably rendered, does not do full justice to the plant—at least, I have now before me a more richly coloured and beautiful variety than the artist had in 1878. This plant was found by Shuttleworth growing on trees at an elevation between 7,000 feet and 8,000 feet above the sea level, and, consequently, requires cool treatment. The entire height, when out of flower, scarcely exceeds 6 inches; but when in bloom these stand up above the leaves, and add a little to its height, and the beauty is, as with the majority of these *Masdevallias*, lies entirely in the outer sepals, and of these the dorsal, or the upper one, is largest and coneave. The sepaline parts measure about 1 1/2 inches across; the upper one reddish-yellow, freckled with reddish-purple, and with numerous deep-red veins running up its entire length, the lower sepals being beautifully shot with rich purplish-mauve. Each of these segments is lengthened out into a slender yellow tail, considerably over 2 inches long, which makes the flower over 5 inches across. Another form has also been found named *Xanthoorys*; but this differs only in colour, and is not so pretty a plant as the typical one; the flowers are smaller, and mostly of a pale yellow. These plants require to be kept with the *Odontoglossum Alexandre* and such-like plants, and, like them, they like to be kept moist during the winter; but, of course, much less is required than in the summer months, and they may be hung up, but the sun should not shine upon them. They should be well drained, and for soil peat-fibre and Sphagnum Moss in about equal proportions. My readers who have not this species will find it one of the most exquisite gems of the whole Orchid family.

MATT. BRAMBLE.

ODONTOGLOSSUM ALEXANDRÆ.

I AM requested by "Birmingham" to tell him all about this plant, and how to manage it successfully? This Orchid, it is said, was discovered by Hartweg, in the Province of Bogota, in the United States of Columbia, a little over fifty years ago, and at the present time Mr. Shuttleworth, the renowned traveller and collector of plants from that region, would appear to have a favourite spot about Pacho for getting

fine varieties of this plant from. It grows at from 7,000 feet to 8,000 feet elevation, so that the plant under cultivation requires to be treated very cool, and under such conditions as we in former times should never have dreamed that Orchids would have lived; and this is one of the things that I think the collectors in earlier times were not straightforward in telling us—the conditions under which these plants were found—seed, consequently, so many plants from the earlier collections were lost; but now the mied of many amateurs seems to be running the other way, by wanting to grow them in the company of Cape and New Holland plants, and exactly under the same conditions; but this will not succeed. I consider the best kind of house in which to grow this family is a lean-to facing north, and this should be kept very moist during the summer season, and less so during the winter, but still moist; the plants to be kept fairly moist at the roots. The temperature of the house must not be allowed to fall lower than 45 degs. Some of my friends say 48 degs.; but the letter I find, although asserting the last-named figure with a loud voice, do not grow their plants to such perfection as my other friends who take the lower figure as the minimum. This is to be with a plentiful supply of fresh air at all times, saving in severe frosty weather, at eight as well as by day, for in a state of nature the plants are not excluded from the fresh air that blows about them, and the advantage of night air I learnt some forty years ago; so you take my word for it, I have proved it to be quite the best thing. The soil best suited for these plants is a mixture composed of good brown peat-fibre and Sphagnum Moss in about equal parts, and the pots should be well drained. Do not overpot the plants at any time, and if they do not absolutely want potting do not pot them now, for this I hold to be the very worst time to perform the operation, which should have been done in the month of October, and from now until the month of May will be the time to see them in flower. Now I hope my friend, who signs himself "Red Something," will be able to make a successful start with the two plants which he has bought, and anything I can add from time to time to assist him, I shall be very happy to do, if he will only ask.

MATT. BRAMBLE.

3234.—House rubbish.—This is rather an unusual case; the heap must contain some sort of animal matter to be so offensive. The best thing you can do is to cover it with a good thickness of earth, and leave it in that condition until the offensive smell is gone off. I should hope the rubbish-heap is not near any dwelling-house, or where anyone spends much time, as it must be positively dangerous to health to be in the vicinity of such a foul odour which must be given off by the decaying matter. I know that common garden refuse will create an offensive smell for a time; but I never knew it so bad but what a man could turn the heap or move it about. I have, however, had to do it many a time, and without any ill effects.—J. C. C.

3300.—*Funkia subcordata grandiflora*.—Perhaps the following will assist "Black Bess." *F. grandiflora*—at least, the plant I know under this name—blooms late in the autumn, and the flowers are sometimes cut off by early frosts. If planted outside it must have a sunny spot, sheltered, and a warm, light loamy soil. When potted up and kept in a light position in the greenhouse, and a good loamy soil used, it should produce its sweet white flowers in abundance. Your plants may require repotting, or the soil be poor, or the drainage disarranged, or similar drawbacks. Under the above simple conditions I have seen it thrive well.—O. T.

3279.—A garden shed.—If the wheels are left on the railway carriage and sunk in the ground a few inches or the ground made up around them, no other foundation will be required, and by no stretch of imagination could it be called otherwise than a tonant's fixture. If permanently fixed in brick work it is a question if the landlord could not, if he felt so disposed, claim it at the end of the tenancy. A neighbour has a railway carriage standing in his garden, the wheels simply let into the ground a little, and a very useful place it is. I believe the carriage cost £5, and is strong and durable, and with a little painting will last many years.—E. H.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in *GARDENING* free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of *GARDENING*, 27, Southampton-street, Covent-garden, London. Letters on business should be sent to the Publisher. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as *GARDENING* has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply so will do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in *GARDENING* should mention the number in which they appeared.

3313.—Auriculas.—What is the difference between the show and the alpine varieties?—H. T.

3314.—Seed Potatoes.—I have a quantity of seed Potatoes well sprouted. Should I put them in pieces, or plant them whole?—J. F.

3315.—Culture of *Nertera depressa*.—Will someone advise me the best way to grow this plant, also the exact temperature it will thrive most freely in?—NERTEA.

3316.—Checker-tree.—Will someone kindly give me the proper case of this tree? It may not be spelt right. I cannot find it in the "Dictionary of Gardening."—CURIOUS.

3317.—*Frimula obconica*.—Can *Frimula obconica* be divided, and, if so, when should this be done? Has it any partiality as to soil? Full directions would oblige.—M. L. E.

3318.—Dissolving bones.—What is the best method of dissolving bones, and how should the solution be applied to wall-fruit-trees, chiefly Plum, Pear, and Apple?—J. S. A. BUCKETT.

3319.—A succession of vegetable crops.—Will anyone kindly tell me how to procure a succession of vegetable crops on a rather damp and shady piece of ground?—T. H. C.

3320.—Pitcher-plant (*Nepenthes Sedeni*).—I should be glad if anyone would give me a few hints of the culture of this plant, and the heat it requires, and does it require heavy syringing?—W. M.

3321.—Introduction of the *Fuchsia*.—Will someone kindly inform me when the *Fuchsia* was first introduced into England, by whom, and from what country?—J. SMITH, London.

3322.—Bellisids, or Daisy Eradicator.—Will anyone kindly tell me whether the "Bellisids, or Daisy Eradicator," does answer in destroying Daisies on a tennis-law?—CONSTANT READER.

3323.—Plants for a shelf.—Will someone kindly give me a list of plants suitable for a shelf which is difficult to water—plants which will not suffer if occasionally dried out, other than Cactus?—C. N. P.

3324.—*Sedum Sieboldi*.—Will some reader kindly give me information respecting this plant? Does it bloom well, and what kind of flowers does it bear, and when? Also what treatment should it receive?—SOTW.

3325.—*Saccolabium Blumei*, &c.—Would "M.B." or anyone else kindly give me a few hints on the culture of this Orchid? Is it a stove plant or not, and also state the culture of *Dendrobium album*?—W. M.

3326.—Grape "Gros Guillaume."—I shall feel much obliged if anyone would give me a few hints about this Grape, as I have heard it is not worth growing, but I have planted a young Vine of this sort this winter?—W. M.

3327.—Pig-manure in the garden.—To what advantage can pig-manure be used in the garden? Can it be used for Beans and Peas, Cauliflowers, Cabbages, &c.? Is it wise to use this manure at the time of planting?—ENQUIRER.

3328.—*Adiantum Farleyense*.—I shall feel much obliged if anyone would give me a few hints as to the culture of this Fern, and what heat it requires? And does it require much water, and does it want syringing over head?—W. M.

3329.—Tinted Panis.—Will anyone please tell me something about Tinted Panis? Where they can be bought (near Kingston, if possible)? The best sort to grow, a dozen or so? The average price of the same?—E. PLUMBER UNITS.

3330.—Anemones from seed.—Will anyone kindly let me know when is the best time to sow Anemone Tulgens and Anemone St. Bridget seed to get them in flower next February and March, and how should they be treated? Locality, Ireland.—PADDY.

3331.—*Lavatera arborea variegata*.—I have some plants of *Lavatera arborea variegata*, raised from seed last year. They are very leggy. Can I cut them down, or must I throw them away and start again? Will the tops strike if put in as cuttings?—C. N. P.

3332.—Worm-casts on lawns.—Does anyone know of a suitable chain harrow or metal brush harrow to drag over lawns and scatter these, or will any machine-maker invent and perfect such an implement? The roll, used once a week, makes all smooth and tidy for two days when the worms raise up the cake of soil, and more so, and the lawn looks bad again for five days. If the soil is too low, scattered the appearance would improve quickly.—R. WILKINS AT URBANA-CHAMPAIGN

3333.—Plants for a cool-house.—I have a small lean-to greenhouse without any heating. Will any of your readers advise me to plants suitable? Would Tomatoes succeed? It is sheltered nearly all round, and entirely on the north and east sides.—BOSKIN.

3334.—Stove in a greenhouse.—I have a greenhouse heated by a brick fire. Will someone kindly tell me if I could use a Tortoise Slow Combustion Stove placed outside the house in place of the brick furnace, connecting it with the old fire inside?—TORTOISE.

3335.—Rose "Star of Waltham".—I have a Rose which was described by the nurseryman who gave it to me as the "Star of Waltham." I see in the catalogue that this Rose is crimson; mine is a bright-pink. Are there two Roses of the same name?—ROSE.

3336.—Saxifraga longifolia, &c.—Will some reader kindly tell me the kind of flowers Saxifraga longifolia and Saxifraga pyramidalis bear, and at what time of the year? My plants are in pots in the greenhouse. What is the best treatment for them?—SAXIFRAGA.

3337.—Pine-apples.—Would someone kindly tell me when I must start to syringe suckers in 6-inch pots, and when I should report them? They are strong plants, and are healthy. And should I use troughs on the pipes, and state the heat the Pine plants should be kept in?—W. M.

3338.—Apricot "Moor Park".—Would someone kindly give me a few hints on the culture of a tree of this fruit? It seems to be making a lot of wood, and it was root-pruned two years ago, and we only had seven fruits from it last year. They do not do to Cornwall like they do upwards.—W. M.

3339.—Painting a window-box.—I am fitting up a window-box, and shall feel much obliged if you will kindly inform me what I shall paint or otherwise coat the inside with to preserve the same from rotting away with the action of the damp. I understand ordinary paint is injurious to plants?—G. S.

3340.—Propagation of Hydrangea paniculata.—There seems some peculiarity about this variety as to its propagation. I tried to strike the hard wood, but failed. The young growth I tried in a hot-bed; these damped off. Will someone kindly advise me the best mode of multiplying it, also as to its culture?—HYDRANGEA.

3341.—A plague of sparrow.—I am overrun with sparrows, which are most destructive, and do an immense amount of damage to almost everything in the garden—flowers, fruit-trees, and vegetables. Can anyone inform me of a remedy for these pests at once, easy and certain? Shooting in a small garden is, of course, out of the question.—M. L. E.

3342.—Euphorbia spaldensis.—I shall feel much obliged if some reader will give me information respecting the culture of this plant, also as to the best method of training a plant in a pot? I have seen illustrations of plants trained in a very curious manner. My plant is a very small one, with one straight stem about 15 inches high.—EUPHORBIA.

3343.—Heating a greenhouse.—Would glassed stove-pipe socket pipes answer for heating a greenhouse with hot water as well as the usual iron ones? I think a few weeks ago "B. C. R." mentioned them to be used for a fire, so I should like to know if they would stand hot water, as they would cost considerably less than iron hot-water pipes?—STAKE.

3344.—A Tomato-house.—I have a house which I wish devoted to Tomatoes. I should like to know how high the borders should be to grow them in? My house is span-roofed and has a border all round, about 2 feet from glass. Is this too near glass to put in Tomato plants? When the plants are high, are they trained up the glass in wires?—J. F.

3345.—Culture of Chrysanthemums.—I should be glad of a few hints from "E. M." on the culture of Anemone and Pimper Chrysanthemums, when they should have their last shift, and when the buds should be taken? Flowers are wanted for exhibition about the 10th of November. And a few hints about Chrysanthemum Mrs. Alpheus Hardy?—W. M.

3346.—Caterpillars on Gooseberries and Currants.—Will someone kindly tell me the best way of getting rid of caterpillars from Gooseberries and Currants, other than picking them off? I have tried syringing with soft-soap and paraffin-oil, a teaspoonful in a bucket, and thought I had got rid of them, but, alas! they are there again.—FACULIENS.

3347.—A removable greenhouse.—As to a tenon's or removable greenhouse, will someone kindly tell me if I should make a frame of wood—that is, of planks screwed together—and should I build a brick wall upon the plank frame upon which to fix a lean-to greenhouse? Would the same be considered portable, and so removable? My plank frame would only lie upon the ground.—WURFRA.

3348.—A Swast-vine Grape-Vine.—I planted a Sweet-water Grape-Vine last November against a 10-feet by 20-feet wall to the open facing the south-west. It is 6 feet high. I shall be glad of advice as to how I shall proceed? Should I cut it back or not? I should mention that I dug out the soil to a depth of 2 feet, drained it with broken pan-tiles, and filled in with yellow loam, leaves and bones, and planted.—H. C.

3349.—Varietas of Rose.—I should be much obliged to "J. C. C." or "P. F." if they could tell me if there is any possible means of telling the different varieties apart? The Noisette and the Tea seem to be closely allied; in fact, I have seen Myrobal Niel classed as a Noisette, also a Tea. The Bourbon and H.P. are not unlike. Any information as regards foliage or flowers to tell by will be thankfully received.—H. T.

3350.—Treatment of Tea-weak Stooks.—Will anyone kindly let me know how to grow German Tea-weak Stooks properly? I always sow the seed in a hot-bed about the 20th March, but when the seedlings come up and get strong, the stems all get black near the roots and the plants die away. This even occurs when they are transplanted from the seed-box into another box. Soil I use is a nice, rich, sandy vegetable loam, and the hot-bed commences at about 60 degs., with a decrease from that onwards.—FABOR.

3351.—Building a greenhouse.—I should be very grateful if anyone would tell me how to set about building a new greenhouse? I wish to have it a span-roof, about 8 yards or 10 yards long, by about 4 yards wide? The principal point I want to know is—whether it is cheapest to build with brick or dressed stone? Also, would it be cheaper to have the frames, &c., made at home, than sending away for them?—O. S. W. who writes Lika to Brix.

3352.—Cut flowers for winter.—Will someone kindly give a list of plants to produce blooms, mostly white, for cutting next winter and spring? What plants for that purpose could be raised from seed sown now or later; when should seed of the following be sown, and what treatment would they require for winter blooming: Heliotrope, Marguerite Carnation, Snowflake, Winter-flower or Tree Carnation, Mizonnette? I can command a good temperature.—G. S., Hants.

3353.—Hors-droppings.—Would "J. C. C." or "J. D. E." kindly inform me if they consider fresh horse-droppings a good thing to mix with loam for potting from? Pelargoniums, or would they prefer well rotted manure from an old hot-bed? The latter is very well rotted indeed. Further, they consider it advisable to shake all soil from the said Pelargonium when the same seems a little mouldy or fugny from using leaf-soil in potting-compost?—ZONAL PELARGONIUM.

3354.—Fowls in a garden.—Will someone kindly say what I had better do under the following circumstances? My neighbour refuses to keep his fowls within bounds, but allows them to trespass in every garden around. I cannot afford to place wire-netting around my open wire fence, so it would cost me £2 or more. I have counted thirteen fowls in the garden at once, and it is useless attempting to do any garden work till the nuisance be stopped. Will some reader kindly advise me?—C. N. P.

3355.—Badly-shaped Azalea.—Would "J. C. C." kindly inform me the best way to treat badly-shaped Azalea indica plants? They are liberally covered with bud now, which are mostly at the ends of the branches. These (the outer branches) are taller than the middle ones, which have scarcely any buds on. Shall I shorten the long growths, and, if so, may I expect a good show of bloom next spring? I can give them a fair heat to start in, say 50 degs. at night, or more. An early reply would oblige.—AZALEA INDICA.

3356.—Treatment of Peach-trees.—Will "J. C. C." kindly tell me the treatment I should follow with regard to my Peach-trees? About once a month during winter I had the border watered with tepid manure water—they are now coming into bloom. I recollect a freely ripened one, so far, I have done right? I should like to know, as far as I have done right? When ought I to use the syringe, and when the syringe very powerful would be injurious to the fruit ripening? If I had a slight application of "summer cloud" applied to the glass? In one corner of the house everything gets scorched, and I find the trees that get some shade look much better and are flowering more freely than those fully exposed to the sun, but I have had no experience as to the fruiting. My trees are young, and did not bloom last year. If "J. C. C." remembers, he gave me some good advice about scalds last year. My trees were then badly attacked, and the treatment advised certainly checked them.—IVY BANK.

3357.—Culture of Eranthis robusta, &c.—I wish to raise Eranthis robusta from seed. I should be glad to hear from those who have been successful in doing so of their method? How long the seeds were germinating, if the plants survived one flowering season, and, most important item (generally left out), in what country and aspect they were raised? I also wish to try several American novelties advertised as perfectly hardy. I shall be glad to have information about them, as most of them are quite unknown to me, and, from the absence of the botanical name, many of them are difficult to trace; Clematis paniculata, the Yellow Calla, the dwarf ever-blooming Calla, Achillea grandiflora, the Mexican Primrose (crimson, pink, yellow, and white, described as ever-blooming, and with flowers in racemes). Is Ipomoea pandurata, described as having large tubers, really good, or only the large Blood-red, as the old kind is a most mischievous thing to get in a garden? What is the Maecetic Vine, which is said to thrive out-of-doors or in a room, and to always succeed with scarlet and yellow tubular flowers? Is the Terebinth Zealanica really a valuable new room plant, which "will do well in the shade"? Has anyone tried Nelumbium speciosum (true Nile Lotus) from seed; also the Water Hyacinth, Pontederis Orseipae, and Nymphaea Zanzibargensis, all described as exquisite Water Lilies with huge leaves and blossoms which will thrive in a tub of water in a room or out-of-doors in summer?—NORWICH.

3358.—Culture of Eranthis robusta, &c.—I wish to raise Eranthis robusta from seed. I should be glad to hear from those who have been successful in doing so of their method? How long the seeds were germinating, if the plants survived one flowering season, and, most important item (generally left out), in what country and aspect they were raised? I also wish to try several American novelties advertised as perfectly hardy. I shall be glad to have information about them, as most of them are quite unknown to me, and, from the absence of the botanical name, many of them are difficult to trace; Clematis paniculata, the Yellow Calla, the dwarf ever-blooming Calla, Achillea grandiflora, the Mexican Primrose (crimson, pink, yellow, and white, described as ever-blooming, and with flowers in racemes). Is Ipomoea pandurata, described as having large tubers, really good, or only the large Blood-red, as the old kind is a most mischievous thing to get in a garden? What is the Maecetic Vine, which is said to thrive out-of-doors or in a room, and to always succeed with scarlet and yellow tubular flowers? Is the Terebinth Zealanica really a valuable new room plant, which "will do well in the shade"? Has anyone tried Nelumbium speciosum (true Nile Lotus) from seed; also the Water Hyacinth, Pontederis Orseipae, and Nymphaea Zanzibargensis, all described as exquisite Water Lilies with huge leaves and blossoms which will thrive in a tub of water in a room or out-of-doors in summer?—NORWICH.

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3363.—Cattleya Mendallii (Orchid).—This plant would be the ordinary course of things have a larger health than C. Percivaliae. But are you sure you have the two kinds true to name?—M. B.

3364.—Cattleya amethystoglossa (Newstart).—I can only account for the state of the Cattleya through your having an over-abundance of water in the air. The temperature has been somewhat too high for good winter treatment, but I do not ascribe any of the fault to that.—M. B.

3365.—Epidendrum oilolares (Orchid).—This is a species that I really do not know, but if you mean E. ciliare it should be treated exactly the same as the Cattleya with which it is frequently found. It is very pretty, although it does not produce a fine and showy flower, and frequently this is the best grower plant amongst an imported lot, and when its flowers open one feels a little disgusted with it, and hence it has become an outcast.—M. B.

3366.—Lycaste Skinneri (H. F.).—As you cannot find any reference to the above I may here say you may grow this plant with the Odontoglossums, but in the winter when the plants are enjoying a temperature of 50 degs. or even 60 degs. for some species. The Lycaste will be better if subjected to a slightly warmer tempera-

ture, say about 50 degs., and do not dry it, though of course less water is required during the winter months. By this means you will have your plants flower with their foliage, and not bare of leaves, as they will mostly be if dried. When in flower they must be used for indoor decoration without any harm arising; but the plants must not be kept wet.—M. B.

3367.—Cypripedium insignis (Am. Orchid).—I should say that your plant was potted far too light, and that it was kept too dry. It should be potted in a mixture of peat and loam, drain well, winter freely, and do not supply with much heat; in fact, it may even be stood in the cool frame for the summer months. If you want to divide them do it at once, potting them firmly. Do not elevate the plants above the pot's rim. Place them in gentle heat afterwards, and shade from the sun's rays.—M. B.

3368.—Phaius grandifolius (Orchid).—This plant, originally found in the East Indies and Ceylon, China, was introduced into the island of Jamaica over a hundred years ago, and has long been a common wild plant there. You should report it after the flowers are faded. Drain the pot well, and use a mixture of peat and loam in about equal parts, watering it liberally, and keep it with the ordinary stove plants in a warm house. Your plant bids fair to increase, and to give you a great deal more pleasure. I cannot say that the ordinary type is handsome or showy, but as you yourself observe, the flowers are peculiar and charming. It is a plant that does not like sunshine, therefore shade it from the strong rays of that luminary.—M. B.

3369.—Cattleya losing their health (Orchid).—I do not know what has caused this loss of health, but you may depend upon it that a Cattleya Mossiae will not flower this season, that C. labata makes up its growth in the autumn and produces its flower-branch, and it requires to be kept cool and somewhat dry through the winter months, when, with warmer days, the flowers push through in the month of May. C. gigas Sanderiaca makes its growth and flowers upon it soon afterwards, at the end of summer or the beginning of autumn, and so if your plant is not pushing its new growth, add it all in your power. The C. intermedia should be flowering now, or a little later. I have also known this species to flower late in the summer upon the growths, then recently made, so this plant should be carefully nursed, for although an old species, it is a charming flower, and one well deserving every attention.—M. B.

3370.—Ferns for a stove-house (Fanny Fern).—The following kinds would make you an excellent display, give you ample material for cutting from to mix with flowers, and save your house from a common appearance: Adiantum cuneatum, A. macrophyllum, A. Farleyense, A. toerum, Aglaonema, Myrsinaceum, Anemidictyon, Phyllitidis, Asplenium dimorphum, A. myriophyllum, A. praemorsum, A. rhizophorum, Blechnum sibiricum, Cheilanthes lan-nosa, Densdalea Davalliodora, Davallia elegans, D. Lodd-leyi, Gymnogramma Calomelanos, G. chrysophylla, G. Peruviana argyrophylla, Lomaria gibba, L. todes, Microlepia hirta cristata, Oleandra perfoliata, Dicolia hymenophylloides, T. superba. Beside the above, the following will do you much good to hanglog-baskets: Asplenium longissimum, Davallia decora, Cheilanthes spectabilis, Gonolophium subauriculatum, G. verrucosum, Notholaena trichomanoides, which in various species and varieties of Stag's-horn Ferns (Platycoleum) may be used as bracket ferns.—J. J.

NAMES OF PLANTS AND FRUITS.
Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W. C.

Names of Plants.—T. Andrews.—1, Lycaste saccata; 2, Glanthera recurvifolia; 3, Aethiolum Rothschildianum; 4, Pelargonium; 5, Phlox; 6, Toxicaria spectabilis; 7, Gardenia citrodora; 8, Magnolia fuscata; 9, Pimelea spectabilis.—P. T. Derby.—1, Dendrobium Wardianum; 2, Cymbidium Lowianum; 3, Lycaste Skinneri (richly-coloured form); 4, Lycaste Harrisonii.—Fanny Fern.—1, Pteris tremula; 2, Pteris cretica; 3, Asplenium Fabianum; 4, Diplazium decussatum; 5, Microlepia oristata; 6, Laticochilus mollissima; 7, Laetia velutina.

TO CORRESPONDENTS.

J. H. Stone.—We do not know anyone who makes a business of carpet-bedding designs.—Enquirer.—Send name and address. The present volume of GARDENING commenced on March 4th last.

BIRDS.

CAGE BIRDS.

THE SONG THRUSH.—Few, if any, of our feathered songsters have a natural song at once so sweet and powerful as the common Thrush or Mavis. It is, indeed, the herald of spring, and may be heard pouring forth its full and vivid strain as early as the month of January should the weather be mild. It breeds early in the spring, the first brood being generally fledged by May. The nest is composed of twigs, Moss, and dry Grass closely interwoven, and upon this is placed a layer of cowdung, covered over with particles of decayed wood, cemented together. The eggs are usually five in number, of a light-blue, speckled at the larger end with black. A thick, close bush, often evergreen, as the Holly or Portugal Laurel, is chosen in which to construct the nest. The young birds are easily reared upon white bread, soaked in milk, and lean meat, minced fine, and mixed with it. As soon as they can perch they should be placed in

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One plant of each of the following 12 fine named varieties for 2s. 6d., post free. PLANTS READY NOW. Arch Grant, rich ledg-blue; Ardwell Gem, sulphur-yellow; Blue-cloud, white, edged with blue; Bullioe, bright golden yellow; Countess of Kintore, blue and white; Countess of Hopetoun, pure white; Duchess of Fife, primrose, edged blue; Duchess of Sutherland, blue-maroon; Mrs. Kinnaird, snow white; Ravenswood, rich plum colour; Hostie, white and pink; Wm. Niel, pale blue-rose. Two plants of each for 4s. 6d.; four plants of each, 9s.

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GARDENING ILLUSTRATED.

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MARCH 23, 1893.

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ROSES.

ROSES IN POTS.

THESE will now require a large amount of attention, especially as regards their water supply. Oeas allow their roots to suffer in this respect and mildew, green-fly, blind shoots, &c., may be looked for as a matter of course. I would give all growing plants weak liquid-manure in abundance. Weak and often is a much better maxim than strong and seldom. I have seen as many fine plants of pot-Roses quite ruined for the season by the too generous treatment many amateurs afford as by any other cause. If guano is used, do not add more than half an ounce to a gallon of water, and apply this doubly as often as if an ounce of this powerful fertiliser was used. Similar tactics should be used when applying natural liquid-manures, such as the drainings from a stable or cow-stall. Well diluted, and used more frequently, being much the safest as well as most beneficial plan. The ammonia arising from the use of natural manure is much better than any derived from artificial compositions. Very few subjects are more pleasing than a well-grown pot-Rose; but to secure this great attention to detail is necessary. They must be well-drained, so as to take plenty of water without any risk of the soil becoming water-logged and sour. The wood should be well ripened each season, and grown on very steadily during the first six weeks after pruning. Then it is absolutely necessary that they be kept clear from insect pests from the beginning. I do not mean that no flies should ever be seen upon them—this being almost impossible—but it is possible to keep the plants sufficiently free from these pests that no appreciable injury can accrue. At the risk of repetition, I must once more call attention to the great advantage of frequent syringings with a weak solution of any reliable insecticide, or even of clear soft water at a temperature of 70 degs. Care should also be taken that no draughts reach the young foliage, nor must cold water be applied to their roots. It frequently happens that the water-tanks in a house are at the coldest end, and when these are sunk in the ground, and probably covered over with boards to form additional standing-room for plants, the water is considerably colder than the atmosphere of the house, more especially during bright days like we have recently been favoured with. Now it is at such times that your plants need more water, and the root action is often choked by copious supplies of such a chilling fluid—frequently as much as 20 degs. to 30 degs. lower than the temperature of the house and the soil that the roots are revelling in. Let the water stand in the sun for a time before applying it upon bright and warm days. P. U.

3335.—Rose "Star of Waltham."—You have evidently got a Rose under the wrong name. There is not the least suspicion of deep-pink in Star of Waltham's petals, but only a deep-crimson. Pride of Waltham is crimson-

pink, with silvery shadings towards the edge of petals. Beauty of Waltham is another crimson variety, but not so deep as Star of Waltham, and of an entirely different shape.—P. U.

No, there are not two Roses bearing this name. The colour of the Star of Waltham is a deep-crimson, and a very effective flower. Your plant is certainly not true to name.—J. O. C.

PILLAR ROSES.

It is very evident if anyone wishes to test the hardiness of any Rose that is at all suitable for the purpose, that he cannot do better than to plant it as a pillar Rose. Of course, there are different positions in which they will be planted, some much more sheltered than others; but I have in my mind now those that are planted quite in the open, exposed as mine are to all the winds and frosts that occur. Under such conditions it is very clear that any Rose hardy enough to pass through the two severe winters we had previous to the one which is now leaving us, may be safely set down as hardy enough for any purpose for which they may be required for cultivation in the open. Judging only from the appearance of the growth, I must say that I am disappointed in the behaviour of some after five years' trial. The most hardy looking Roses are not always proof against the frost; Gloire Lyonnaise, for instance, is much harder than I took it to be, and so is Madame Plantier, both White Roses of some merit. Perhaps no one will be surprised to hear that Gloire de Dijon is quite hardy on a pillar, but all may not know that climbing Victor Verdier is equally so. I doubt very much if the merits of this Rose are sufficiently known, as it is equally as suitable to cover a wall as a pillar, and in point of colour, which is a rich-deep-crimson, we have no other strong growing Rose that can surpass it, and I doubt if there is one to approach it, and, to associate with it, Magna Charta has no equal. This variety will reach the top of a pillar 10 feet high and produce scores of very large flowers at one time, and continue producing a few blossoms until winter is near. Madame Isaac Perrière is similar in colour and equally as strong in growth, but not quite so hardy. Princess Louise Victoria and climbing Bessie Johnson I have had to cut down to the ground this pruning season, as the old stems never recovered from the injury done to them by the frost in the two previous winters. Madame Nohury has behaved splendidly as regards enduring the action of the cold, but I should like it to be a little more vigorous. Her Majesty has braved the frost unharmed; the growth is, however, somewhat sparse, but the flowers are exceptionally large, and the plant invariably produces two or three blooms in the autumn. Bonle de Neige grows fairly well, but is too tender for an exposed pillar. Charles Lawson is disappointing. The plant is hardy enough, but the quality of the flowers is inferior. I had expected something good from Madame Clemence Joigneaux for a dwarf pillar, but the growth is not vigorous enough, at the same time I doubt very much if many who know Roses well would have recognised the flowers that my plant produced two years ago; they were so large and full, and the shape exquisite. J. O. C.

3349.—Varieties of Roses.—The question asked by "H. T." is a very difficult one to answer. As he says, the Tea-scented and Noisettes are much alike; so much so, in fact, that more than one variety is classed as both. We find both Marechal Nief and Caroline Kuster classed as Teas, and also as being Noisettes. Personally, I fail to see the distinction between these two classes. The original Noisettes were rampant growers, bearing clusters of small blooms. We now have many Teas that bear clusters of flowers equally as freely as the Noisettes; the perfume is the same—so, too, is the growth—and for my part I fail to see any necessity for two classes, nor can I see where the distinction is drawn. Caroline Kuster is not a rampant grower like Almée Vibert or Miss Olegg, nor does it bear trusses of blooms any more than Madame Cosic, Madame de Tartas, and many more recognised Teas. Again, Gloire de Dijon is a Tea; but one of its seedlings (Bonquet d'Or) is almost always classed as a Noisette; yet it does not approach the ideal of the latter any more than that of the former class. In the case of the Bourbons and Hybrid Perpetuals, we find the same similarity in many cases. It is a very puzzling subject, and likely to become more so, as the National Rose Society has decided to constitute an additional class for Hybrid Teas. La France, Captain Christy, and many more that were hitherto classed as Hybrid Perpetuals, are now to be relegated to the new class. The Tea and China blood may be readily traced in many kinds that are looked upon as pure Hybrid Perpetuals, and I cannot help thinking Roses are subdivided far too much.—P. U.

I am afraid I cannot help "H. T." in this matter to any appreciable extent, as the distinguishing characters of the Tea-scented varieties and the Noisettes are not very easily defined. The latter are, however, much stronger growers, and produce larger clusters of flowers; moreover, they are on the whole harder than the Teas. There is a good deal of confusion in the arrangements of these two classes of Roses, but I do not know who is to blame for it. It is very clear, however, that a better arrangement is required. The Bourbon Roses are best known for the number of flowers they produce in the autumn.—J. O. C.

3287.—Enclosing a garden with wire-netting.—As you are only troubled with the birds during the fruit season I would not go to the expense and trouble of fixing wire-netting on the top, as a portion of it must be removed again in the winter to allow the ingress of the birds to destroy the insects and their eggs, which infest nearly all the fruit-trees. Stretch across from wall to wall some stoutish wire, and on these lay some 1-inch fish-netting, which can be taken down again in the autumn. One and a half inch mesh will be quite small enough for the wire-netting for the ends; the smaller the mesh the more expensive it is.—J. O. C.

On the subject of rubbish.—Dry earth is the best fertilizer, and this alone, with a sprinkling of lime, will soon make it quite harmless. Let the earth and lime be worked in as the heap is turned over.—E. H.

GARDEN WORK.

Conservatory.

Lillem Herriol will require frequent attention to keep the advancing flower-spikes free from insects. The insects are rather difficult to kill in the centre of the flower-spikes. The best remedy, I think, is a mixture of soft-soap and peaffin-oil, in a pall, in which the ends of the shoots may be dipped. This treatment will suit either plants infested with insects. A decoction of Quassia chips will answer the same purpose. Hardy shrubs, such as Lilacs, Deutzias, Japanese Azaleas, should not be turned out-of-doors when the flowers fade. The temptation to do so is great, as everybody is pressed for room under glass. I generally move them to a vinery that is coming on gently. Here a little pruning is given to put the plants into shape, and when new growth has been made the plants will be hardened off and plunged outside. Such plants will flower earlier and better next year. It would be economical, where much shrub forcing is done, to have a house no purpose to move such things to as they come from the conservatory. Selwonia Beni, Dietra, Lily of the Valley, and many other things usually forced will pay for kindly treatment after flowering. See that Pelargoniums forming flower buds are free from insects, so it will be difficult to clean them after the flowers open without injuring the blossoms. There is no better way of keeping these in a clean condition than by occasional fumigations with Tobacco. A stitch in time saves more than else. Young plants in full growth will require some regulation of their growth, stopping a shoot here and there at the right time adds to the symmetry of the plant, and gives compactness to the mass of blossom. In using stimulants it is necessary to begin till the roots are working through the soil. When they have consumed the bulk of the food in the soil stimulants—liquid and dry—will do good, but not much earlier. Look over the climbers every week now to thin out and tie in the shoots. In lofty houses Passies-flowers and Tacceolas should be allowed to festoon and dangle about a little shade will be necessary in hot weather. Bow Primulas and Cinerarias for early blooming. Osteospermums should have the plants, if they will not bear pricking in small pots, as drought is very injurious to them, and it is almost impossible to bloom them well and keep the foliage healthy in small pots. They will do best now in a cool-house where the sun cannot reach them. Cyclamens which have done flowering will do better in a cold pit, and be permitted to go gradually to rest. Prune any Camellias which are making much growth, and which have finished blooming. Camellia-blossoms are not much required now.

North House.

This house will be valuable now for retarding plants, or for keeping Azaleas and other plants which may be required for any particular purpose. It would be difficult for the exhibitor to thin his plants without a north house for retarding purposes. Heaths and New Holland plants generally will do very well in such a house. There must, of course, be the means of keeping out frost.

Keeps.

The hot sunshine of the past week has necessitated the use of shading for a few hours in the middle of the day. I am reluctant to begin shading before it is absolutely necessary, but when the plants are visibly distressed by the hot sunshine something must be done; but in no case should the shading be left no longer than is required, and at this season, so far as regards the day, the shading may be taken off by 2 p.m.; as the days lengthen the shading will be left on longer, but when the plants are in such a state that shading should be treated as a necessary evil, and be removed as soon as it can be spared. Plenty of water in the atmosphere is a necessity now; without this the plants would soon be infested with insects. When the plants are clean and in good health insects are not so troublesome. The above ought to be a very attractive house now. There will be a few Orchids in bloom among the Odontoglossa, Dendrobium, and Oeodictyone, even where only a limited collection is grown. Amaryllis, too, are now showing flower-spikes, but these do best in the cool stove or intermediate house now, as the flowers are showing up. Give a little weak liquid-manure where the bulbs were not repotted. Save seeds from the good flowers, and hybridize to get improved varieties. The only chance of working up a stock is to buy a few good varieties of distinct character, and hybridize and raise seedlings. In four or five years from sowing the seeds there will be plenty of flowering bulbs.

Fernery under Glass.

The Ferns in variety are charming now in their new growth. The potting of specimens has, or should be, carried out, but with young, vigorous plants these will always be a waste of a shift. Do not overpot; small shifts are best. Tree Ferns are objects of great interest, but it is only in the large fernery where they are admirable. The Dicksonias, Cyathes, and others are so suggestive of the tropics that no large fernery is complete without some of them. I have raised several of these from spores, and though the young plants are useful for many decorative purposes, life is not long enough to raise Tree Ferns in this way, and neither is it necessary, as trees with trunks varying in length have now become a regular article of commerce. Those Ferns which do not produce fertile fronds will, of course, have to be propagated by division. I have done best by divided young plants; old specimens when cut up are a long time getting established. Like exhausted things generally, a good deal of re-culturing is necessary to keep up young stock taken from an old, exhausted plant. Keep pans of growing seedlings in a shady spot. If spores are raised the work should be done in a small house attached to the larger one, that can be easily closed when necessary.

Work in the Hot-bed.

This is a busy time in raising seedlings and striking cuttings. There is nothing in the way of plant propagation which may not be done in the hot-bed if the heat is sufficient and steady. Pelargonium alone will not do well in the hot-bed; these I always strike in a dryer heat. In striking cuttings or raising seedlings a good deal depends

upon having a good supply of suitable soil, neither too wet nor too dry. Where much potting has to be done, a stock of soil should be kept dry; and if, as is likely, it may get too dry, a little damp earth from the outside can be mixed with it.

Window Gardening.

Continue to sow seeds and strike cuttings, and to rapot any plants that may require more space. Keep pots clean, and use the sponge and soapy water wherever there is a suspicion of a green-fly. Divide large Aspidistras. Do not set Palms in the bright sunshine—in fact, fella plants are better kept in the shade when the sun gets hot. Window-boxes are now bright with Wallflowers, Forget-me-nots, Primroses, and Tofted Panicles. Where the soil is poor give stimulants.

Outdoor Garden.

Beautiful at the time of writing are the common hardy bulbs, especially where used freely on the Grass, on the lawn, or in the orchard, or wherever a quiet spot away from the scythe and mowing-machine can be had. The time of planting is not now, but notes may be taken of the best sites and best modes of arrangement for the autumn. A Grass slope at the foot of a house, or a not so good a spot, with a shelve, will always be natural and expressive. Snowdrops, I think, look better in broad, close tufts, so do also Daffodils, though there may be skirrhers thrown out from the main body. Aconites, in broad, close masses on shalving banks are always charming, and the pretty, blue-dowered Squill (Squilla sibirica), is still not plentiful enough. Iris reticulata on the rookery, with Anemone blanda and japonica on a bank, partially shaded by trees, are worth some little trouble to establish in quantity in order to attract attention. Violets for summer bedding should now be backed up and planted. Where there is plenty of scope in large gardens, the old varieties corocata and lutes in masses are very effective. These flowers are small but freely produced, and in dry, porous soils, where the Panicles will not thrive, the small-dowered Violets may safely be grown. Pull to pieces and replant now. Even in backward districts Roses may be pruned now. There are many ideas upon, and much variety of treatment, in the pruning of Roses, but there is one common to all, and that is, the best time for it is done, there will be Roses in June and July. The principal aim to bear in mind may be thus stated: Prune hard for a few fine blooms, but to spread a leaf, thin freely, but leave the strong shoots a good length. Lose no time now in sowing hardy annuals. Use them freely in variety, and there will be a bright and pleasant garden.

Fruit Garden.

This is a good season for planting Melons in hot-beds. With the increasing sunshine, which we hope to get, growth will be rapid. One plant in the centre of each light will be enough to fill the light, it set above the average also, though there is sometimes an advantage in having two plants in a light, as the crops may be set and swelling in less time. Rather strong loam is the best soil for Melons, and it should be pressed down firmly, as we want moderate, not gross growth. Where much Melon-growing is carried out, hot-bed or Melon-houses will be planted in succession as required, seeds being sown at intervals to have young plants always in stock. There are two chief difficulties in Melon culture—the one is their liability to be attacked by red spider, and the other is the "canker" which, in many cases, in dull, damp weather attacks the main stems. It is very difficult to keep soft, fleshy foliage free from red-spider, hence Melons should never be shaded, and the ventilation should be sufficient to keep the internal atmosphere buoyant and in motion. Where this is always done neither "canker" nor red-spider would give much trouble. "Canker" luxuriates wherever there is soft, blighted tissue and a stagnant, impure atmosphere. See that the blossoms of wall-trees are protected in the best and most economical manner possible. The blossoms are strong and healthy for the most part, and there is likely to be a good set with average weather. The sunshine of the last few days has made an improvement in early Vines. The sunshine hardens the foliage, and if the dry, fierer heat is tempered by moisture being freely sprinkled about, the conditions of growth will be general. Prune outdoor Vigs.

Vegetable Garden.

Cucumbers may be planted in frames where there is a steady bottom-heat of 30 degs. to 35 degs.; must be covered at night with double mats or some equivalent. Old rotten turf, mixed with a little old manure, is the best compost to plant to. A bush in the centre of each light will be sufficient to begin with. One plant in the centre of each light is better than two. On a raised bed, the soil may be stepped and pegs down as required, adding more warm soil as required. Do not permit any plants likely to be infested with green-fly to be placed in Cucumber-frames, but the frame may for a time be used for raising seedlings. Never use cold water, either for sprinkling or to water the roots. Prick off Calary in boxes or frames. Sew Vegetable Marrow and Ridge Cucumbers; or Pepinons also should be sown in the hot-bed, and New Zealand Spinach. As regards other varieties of Spinach, variety known as the Long Standing is most useful. Small sowings, according to demand, to be made fortnightly. Beans raised in boxes under glass, and which have been well hardened by exposure, may be set out on a warm border. Beans are improved by transplanting; they are more prolific. The best crop of early Beans I have ever had were started in boxes. Peas started to pots should also be set out, and well sheltered with branches and sticks, ridges of soil being drawn upon each side. Make new plantations of Globe Artichokes. Put out Camellias with the Vines, selecting the warmest site. They will do very well in trenches in a sunny position where there are no bad-fights. Tie up Lettuces to frames to encourage early heading; but in doing this leave room for growth. The same remarks apply to early Cabbages; a bit of matting tied loosely round the leaves will fit the plants for cutting much sooner. Sow Turnip-Beet for early use. E. HODAY.

Work in the Town Garden.

Evergreen shrubs and trees may be planted at any time during the next month or so with the best results, care being taken to keep the roots well supplied with water and mulched in dry weather. Deciduous subjects of this kind may also, as a rule, be planted now with the best results.

the exceedingly mild weather we have been having for some time now has started those of a naturally deciduous nature, such as the flowering Currant, or Ribes, the Almond, &c., into growth and bloom unusually early, whereas these ought to be removed before much progress has been made. All of a later character may, however, still be transplanted quite successfully. Among Evergreen subjects, the Aucuba and Eucenyman are two of the very best for town gardens, thriving more or less well in even the smokiest localities; but the Skimmia, as well as the plain or green-leaved forms of the Aucuba, are also very suitable for such districts, and might be more commonly seen with great advantage. Other excellent town shrubs in this class are the varieties of Berberis, or Mahonia, the Arbutus, the Sweet Bay, the Rhedodendron, the Gum Clastic (which also produces its elegant blossoms freely), and the Tree Lilies, the last being especially valuable and suitable for any aspect or position. The strong-growing hybrid forms of Holly, with plain foliage, are also excellent for all but the most confined localities. Of deciduous shrubs some of the best for town gardens are the Ribes, the commoner forms of the Weigela, the shrubby Spiraea (several of which are especially beautiful, and good for cutting when or planted), Syringa, Philadelphus or Mock Orange), Lilacs, especially the Persian forms, the Venetian, and Stag's Horn, Sumacha, Leycesteria (fermosa), the double-flowering Cherrise, the varieties of Albion frutax (hibiscus sylvicus), and last, but not least, the beautiful flowering Almond, though this last partakes more of the nature of a tree than of a shrub. In London and other southern cities and towns the Tree of Heaven (Ailanthus), and the Japanese Paulownia also succeed well, and are exceedingly handsome, and when the atmosphere is not too confined the Guelder Rose grows and blooms freely. Rhubarb is one of the best and most useful of all vegetables for a town garden, and when the roots have been protected by means of the proper pots, boxes, or even a little littery manure, there will be plenty of nice tender stalks new. Another plant that does not object to a smoky atmosphere is the Kale, of which seed should be sown, or root cuttings be planted at once. B. C. R.

THE COMING WEEK'S WORK.

Extracts from a garden diary from March 25th to April 1st.

Fruit-trees, Apples, and Peaches on walls are now in bloom, and are looking very well. I am, perhaps, more than usually anxious to get some of the best of protection for the blossoms. Britain's nettings are the best for covering I have ever used anywhere. These are fixed to a wire running along the top of the wall, with large hooks, which are sewn to the netting. The covers are supported by Arb-poles fixed 2 feet from the bottom of the wall. The net can easily be drawn aside like curtains and secured during the day to the poles, thus fully exposing the trees to air and sunshine. I find a double thickness of fishing-net, supported in the same way with poles, are just about as effective (so far as results go), as Britain's netting, and the former are the cheapest, both to first cost and the labour involved afterwards. Oatmeal rye Strawberries from pots of both Vicomtesse de Thury and Noble. The first named is, in my opinion, the best ferocier, and the fruit travels better when packed. For long journeys the fruit is gathered before it is dead ripe, and the finishing touches are best given in a well ventilated house on a shelf in the sunshine. Sir J. Paxton and President I had two of the most useful Strawberries for forcing, the British Queen is not too confined and confining. Any graft which fails in spring may have a bud inserted lower down the stock in August. Made alterations on a lawn, clearing off a few old shrubs, and making more space for herbaceous plants on the grouping system. These include rather a good collection of German Iris, which are planted in good-sized groups, edging several large beds with variegated Irises. The edging is raised a little, and the Irises are pegged down close to the ground. Ajuge purpurea in a bed outside; Salsify plants will form the edging to one bed, and the variegated Collin-leaf, planted largely for summer use. The rows of Imperator 3 feet apart. Beauty of Hebron 2 feet 6 inches. Planting more Peas, the kinds being chiefly Duke of Albany, Walker's Perpetual, and No Plus Ultra. There may be other sorts as good, but the above will not fail to give satisfaction. Planted Taylor's Broad Windsor Bean to come after the Longpede. Planted dwarf French Beans in boxes to be hardened off, and planted in a trench in front of forcing-house. The position is warm, and Beans set out end of April invariably do well. They will be covered with mats at night. Sowing early Millar Turnip, putting sticks to Peas, Pricking out Lettuces and Brussels Sprouts raised under glass, sowing Broccoli, and Winter Greens generally. The seeds have been dressed with rad lead to keep birds from sowing them. This never fails, as may be used with Peas and Beans where mice are troublesome. Pricked out oshoo seedling Columbinos in groups round a mass of shrubs on lawn. Tied down Vines and thinned Grapes. Thinned shoots on Muscat and Green Colman Vines, crowded foliage meaning small bunches (next year) shifted on young pot-bearing Vines. Gave liquid-manure to Vined Figs in pots bearing fruit. Planted

In cold or northern districts the operations referred to under "Garden Work" may be done from 10 days to a fortnight later than in any indicated with equally good results.

TREES AND SHRUBS.

BEST FLOWERING SHRUBS.

OLEARIA HAASTI.

This plant has now become one of the recognized stock shrubs in nurseries, and only a few years ago there was some doubt about its perfect hardiness in this climate. Now everyone knows, or should know, that it has not a suspicion of tenderness, as it has withstood without injury several winters quite unprotected. The peculiar value of this plant lies in the fact that it is one of the very few hardy shrubs that flower throughout August. If it blossomed earlier, when crowds of others were in bloom, it would probably not be so noticeable. Being an evergreen likewise adds to its value, and in almost all kinds of soils it thrives and flowers in the greatest profusion, particularly on light warm ones. So profuse are its white blossoms that the whole bush looks a mass of white, and this continues for three

ing between a pale-flowered Delphinium during early spring, so that it would flower at the same time as the Olearia. A dozen Larkspurs and six Olearias are sufficient for a good-sized bed. Another good mixture is Olearia and Orange Lilies, or Tiger Lilies, or Lillum venustum, but the Orange Lilies must be planted rather late in order to flower at the same time. A pretty mixture also is Olearias and Hypericum oblongifolium, which in its season blooms profusely, and whose large cup-like flowers of golden-yellow contrast well with the white. The Hypericum goes well with Olearia as regards growth, but being somewhat smaller should be kept at the margins. To give the group a better appearance, plant one or three Purple Cherry Plums (*Prunus pissardi*) among the others, but in the centre of the mass. The Scarlet Gladiolus *Brenchleyensis*, when in full beauty, combines effectively with the Olearia, and some of the most striking groups I have ever seen in a northern garden were of these two plants. Various other combinations will

and, as you will see, it does not kill the Daisies, but eradicates them in another way. It would be curious if we had a preparation that would kill Daisies and leave the Grass unharmed.—
J. C. C.

CHRYSANTHEMUMS.

CULTURE OF CHRYSANTHEMUMS.

3345.—Plants of Anemone Pompon and Pompon Chrysanthemums should now be ready for potting off into 3-inch pots, providing they were struck two or more in pot. A good position on a shelf close to the glass in a cool-house for a week or so until the roots are running in the new soil; they will succeed afterwards in a cold frame. Providing a cool-house is not at command, they must go into the frame at once, placing it in a sunny position, admitting air cautiously for the first week or two, and covering the glass nightly to prevent injury from frost. From the 3-inch pots they should be transferred into those 4 1/2 inches in diameter, commonly called 48 size. From these they will go direct into those they are to flower in, 7 1/2 inches. The time when the last potting takes place is not so important as the state of the roots of the plants. When the 48 pots are full of roots then shift them on into larger ones. It would be most imprudent to allow the plants to become much root-bound in the small pots simply because a stated time was observed for potting them finally. The fault of allowing any section of Chrysanthemums to become matted at the roots before shifting the plants into larger pots is that the roots so quickly absorb the moisture in the soil as to require more attention in the respect of watering, and the progress of the roots is interfered with, which produces a check to the growth, and which is undesirable at all stages until the full growth is complete. As a rule, the final potting takes place at the end of May or early in June. A suitable compost for these sections in the various stages is two parts loam, one part leaf-mould or partly-decayed horse-manure, and sufficient sharp silver sand to keep the whole porous. The character of the loam—light or heavy—will guide this; if the latter, more sand is needed, and a small portion of crushed charcoal is an advantage, as it not only tends to keep the whole mass sweet and porous, but acts as a storehouse for ammonia. To every bushel of the compost add 1 lb. Thomson's Vine manure for the first potting, increasing the weight 1/2 lb. each stage. In all cases pot firmly; the soil should be in a moist state, neither wet nor dry. The plants will not need water for two or three days after potting if the soil is in the right condition. After that sufficient must be given to maintain the soil in a moist state. When the pots in which the plants are to flower are full of roots liquid-manure in a weak state will be an advantage if applied every other time the plants require water. At no time must they suffer for want of space. Overcrowding renders the growth weakly, and from such good blooms cannot be secured. At the end of August or during the first two weeks in September, the buds should be "taken;" so much, though, depends upon circumstances, as to the state of the plants and the manner of their growth, and also the variety as to the time the buds form. The dates named, however, are approximately true. Any variety in either of the sections named should produce at least six good blooms; for the smaller kinds, eight or ten would not be too many. When the first break takes place, instead of reducing the number of shoots to three, as in the orthodox plan, in the case of the Japanese and incurved sections allow four growths to remain; these will again break into additional shoots, and from them the number of blooms each plant is to carry can be selected—one only on a stem ought to remain; therefore, as many blooms as are expected that number of shoots must be retained. Mrs. Alpheus Hardy is perhaps the most difficult of any Chrysanthemum to manage really well; the constitution is weak, and therefore many failures have to be chronicled. The orthodox method so well suited to the bulk of other sorts will not answer for this. Exceptional circumstances have to be introduced to obtain even a fair measure of success. The cuttings should be inserted in good time to allow for a long season of growth. By topping this plants the first week in April buds will be produced in August. After the topping train



Olearia Haasti in flower.

weeks or a month. Out of flower it looks a good deal like the common Box, the leaves being of similar size, and shape, and colour, except that the under side of the leaves are covered with white down. The habit of growth is a dense rounded bush, and when planted out in the open it grows from 3 feet to 5 feet high, but gets much taller if crowded by other shrubs. The flowers look like tiny White Daisies, and the clusters that terminate almost every twig are very dense. This description of the plant is meant for those who do not know it, but these must be few, judging from the frequency with which it is met in gardens, large and small. No one need hesitate to plant it, but in doing so the shrub should be given a fair chance—that is, not stuck in a crowded shrubbery or on the fringe of one, so that it would be starved. Being so neat and compact in growth, it makes a capital lawn group in a good-sized oval or circular bed, and some very effective combinations may be made by planting, say, half a dozen Olearias about 2 1/2 feet to 3 feet apart, and plant-

suggest themselves to those who know the plants they are dealing with. It is a capital rock garden shrub, and does not mind dryness. The only other point I can think of about this Olearia is that the flowers are fragrant, and if cut and placed in water they last a long time in beauty. W.

3372.—Bellicide, or Daisy eradicator.

—Yes, it answers in this way. If you can use it in sufficient quantity and repeat the application as often as necessary, it will make the Grass grow so fast that the Daisies are overgrown by it, and if this condition is the growth of the Grass is maintained the Daisies will disappear in time; but you will find it an expensive affair, as the fertilizing properties of the Bellicide quickly disappear, and, as I have already said, repeated applications are necessary before the Grass overpowers the Daisies. When a plentiful crop of Daisies are present it is an indication of poverty in the soil. This condition explains the action of the Bellicide.

up three shoots from the growths made by the cheek consequent on topping. The pots should not be quite so large in any stage of growth, as this variety is not so vigorous rooted as others. One part of peat instead of manure will be more suitable for the tender growth. Liquid stimulants ought not to be given in nearly the quantity as for others. As the wood is rather tender keep the plants longer than usual in the house in spring. Should flower-buds form at the point of the shoots towards the end of July, do not remove them, but allow the flowers to develop from them. E. M.

THE KITCHEN GARDEN.

VEGETABLE MARROWS.

The list of really serviceable or popular forms of Vegetable Marrows is by no means a long one, and no harm would be done if this was still



Long White Vegetable Marrow.

further reduced. Long Whites (here figured), of which there are several more or less good selections, is the variety most generally grown, this being good alike for exhibition, market work, and home consumption. If one variety only is grown, Long White should be that one. Long Green much resembles the foregoing in all but colour, and of this Prince Albert is a good selection. White Bush, also known as the Chusan, is of compact growth, the running growths in this case being very short, and this distinct form produces long white fruit very freely and quickly. It is not recommended for stering in a ripe state. Hibbert's Prolific each time I have tried it has been most disappointing; it was a failure, in fact. But Moore's Vegetable Cream is more deserving of a trial, the fruit being medium-sized, handsome, and good in quality. Muir's Pea-byd is, however, by far the best companion for the Long White, this variety producing small round fruit most freely, the flavour of these when cooked invariably giving satisfaction. Prior to the introduction of the last-named the Custard-shaped was grown for cooking in a small state; but this old free-bearing sort is now seldom met with. W.

POTATO CULTURE IN STIFF SOILS.

The best time of the year for planting Potatoes is now with us, and although it may be deferred as late as the first week in April with good results, it is undoubtedly better to get it completed before the end of March. It is well known that Potatoes may be grown in any soil with more or less success, and the following remarks are addressed principally to those who are obliged to cultivate this succulent tuber in stiff and unfavourable soils. The garden in which I grow my Potatoes is much shaded by trees, and this, combined with a deep stiff clay soil lying low and level, makes the tubers peculiarly susceptible to the dreadful Potato disease. Notwithstanding these adverse circumstances, I have lifted heavy crops during the last three seasons (two of which have been exceptionally wet during July and August) without much loss from this cause. I chiefly attribute my success to giving plenty of space between the rows

(2 feet for early varieties and 2½ feet to 3 feet for second-early and main-crop varieties), planting near the surface, and "earthing up" deeply. This latter detail has proved to be a most important one in the cultivation. The haulm makes strong growth, and the tubers develop freely in the freshly worked and friable soil, which they delight in, while the superfluous moisture is carried off by the deep furrows on each side of the row; this cannot be properly done unless plenty of space is allowed between the rows. The ground intended for this crop is deeply dug before Christmas, burying in it a heavy dressing of leaves which have lain in the pig-yard for a month previously. Before planting I run a garden hand-plough, with the cultivator attached, through the ground; this can be successfully worked by a pony where the area of ground to be planted is sufficiently large to allow of it. I then with the plough open shallow drills at the required distance, and in the rich soils of which I am treating the rows of the main crop should not be planted less than 2½ feet from row to row, and the sets 12 inches to 15 inches apart in the rows. When the sets are planted the drills are covered in with a draw-hoe. As growths appear above the surface, soil is drawn around them, and the cultivator is frequently worked between the rows to destroy the weeds and keep the soil open. Before the final "earthing up," which should be deferred until the haulms have grown to such a height that it is impossible to work the cultivator without injuring them, I sprinkle a light dressing of artificial manure between the rows. If Potatoes of exhibition size are required it is advisable to draw all the shoots from the sets, except the strongest; this will produce a few very large tubers to each set. It is now universally admitted, and it is also my own experience, that the best results are obtained from planting whole Potatoes of medium size. Of the early varieties I grow Sharpe's Victor and Myatt's Ashleaf; those two kinds were planted last year on the same date, in the same plot of ground, as an experiment, with the result that the former was ready to be lifted ten days before the latter, but Myatt's Ashleaf has the finer flavour. Of second-early varieties I grow Snowdrop largely, but I must admit that it is not altogether adapted to stiff soil; it is a delicate Potato, and liable to disease. Still, I have found that it may be grown profitably under the cultivation above described. Its white appearance and mealy flavour when cooked, combined with early maturity and good keeping qualities, makes it, in my opinion, the most desirable Potato of the present time. In stiff soils the old Magnum Bonum is undoubtedly the most profitable Potato to grow; its heavy cropping propensities and singular immunity from disease are well known, but unfortunately its cooking qualities are only second rate. Sutton's Abundance produces a heavy crop of handsome tubers of very high quality, but I have found it liable to disease, and this is the experience of several other growers whose opinion I have obtained. Satisfaction is a prolific Potato of fair quality which does well with me, and it is probably the most successful exhibition Potato of the day. Sutton's Supreme, sent out this year for the first time, promises well, and if its cropping and cooking qualities equal its appearance, it will take a prominent position in the Potato market. Everyone engaged in Potato growing must watch with interest the results of the experiments of dressing the haulms with strong solutions of copper, with the view of checking the disease, and while admitting that they appear to have been successful, it is, in my opinion, doubtful whether those who grow Potatoes for their own use will adopt such apparently dangerous remedies, and probably the best and most natural remedy against the disease will in the end prove to be high cultivation.

BRECHMAST, North Hants.

3319.—A succession of vegetable crops.—A damp and shady piece of ground is the worst place for producing a succession of vegetables, as it would be almost impossible to grow early crops upon it. The place would be useful in summer to grow green crops and salads, but only a very limited success would be obtained with Potatoes, Onions, or Peas. I have grown late Peas fairly well on a damp, shady

spot. Scarlet Runners, Turnips, Spinach (in summer), Cauliflowers, Lettuces, and Leeks did fairly well; and among fruits Black Currants and Raspberries. To make the best of such land one must plant only the crops likely to succeed upon it. Early Celery did fairly well, but late Celery, unless blanching with sifted ashes, always suffered from damp.—E. H.

3314.—Seed Potatoes.—Whether the tubers should be cut or not depends upon their size. If no larger than good-sized hen's egg plant them whole, otherwise cut each into two, three, or more pieces; but avoid cutting them too small, so the strength of the shoots, and, consequently, of the plant, appears to be almost directly proportionate to the size of the tuber, or part of a tuber, from which they spring. Take care to cut them, if at all, so as to secure one or two good strong sprouts to each, and lay them out in a dry place for a day, so that the cuts may heal before planting.—B. C. R.

—Better plant whole Potatoes if not too large.—E. H.

—You can please yourself. Every part of the Potato with a living eye will form a plant; and, in my opinion, you will get more return for your money by dividing than planting whole, as then each shoot will grow independently, and not rot or crowd its neighbour.—A. G. BOWEN.

3344.—A Tomato-house.—The height or distance from the giese of the beds in which the plants are grown is a matter of very little consequence. I have grown them in low structures furnished with raised beds where the plants were within a foot of the glass when put out, the growth in this case being trained to wires stretched transversely across the roof, while in lofty structures they are sometimes planted on the ground level, perhaps 10 feet or 12 feet from the glass, in both instances with good results. The position indicated in the question will do nicely. Tie up the stems of the outer row of plants to wires fixed 8 inches or 9 inches from the glass and the inner ones to upright stakes, taking out their points as soon as they reach the roof.—B. C. R.

3230.—Cauliflower and Broccoli.—By good management and with a sheltered garden a complete succession of these can be had the whole year. Of course, due allowance must be made for a continuance of frost during the winter, especially the month of January, when it would be difficult to obtain a regular supply of Broccoli heads at the time the plants are frozen without planting a batch in cold frames some time previous. The earliest Cauliflowers are obtained from plants raised in the autumn by sowing seed out-of-doors at the end of August, placing them in small pots and wintering them in a cold frame, planting them out on a sheltered border about the middle of March. Early London is a good variety for this form of culture. By sowing First Crop or Magnum Bonum in a gentle heat the middle of February, pricking them out in boxes of light soil, growing them on steadily in frames, and planting out the first week in April a succession is maintained. By sowing Autumn Mammoth and Veltch's Autumn Giant outside the middle of April the former will give good heads in August and September, while the latter will continue the supply on through October and November, if dug up and laid in soil in pits or cold frames for protection from frost. Broccoli should be sown quite by the first week in April on a warm border, the plants put out early to give them ample time to develop thoroughly, and become matured in the stems, as it is in that part which the frost affects. So many persons postpone the sowing of Broccoli seed too long, the consequence is that the plants have not time to grow into a size sufficient to give good results. No less than 2 feet of space should be given between the plants; nearer than that the growth is weakened, and more liable to suffer are the plants from severe frost. All the kinds may be sown at the same date. Michaelmas White will come in during the latter part of October and November; Sutton's Winter Mammoth in December, January, and February, while Leamington, Perfection, or Knight's Protecting will carry on the supply until Late Queen takes it up during April and May.—S. P.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruits and vegetables for drawing. The drawings so made will be engraved in the best manner, and will appear in due course in GARDENING ILLUSTRATED.

FERNS.

SOME CHOICE ADIANTUMS.

The accompanying illustration represents a very elegant Japanese Maiden-hair Fern, *A. monochlamys*, taken from a specimen gathered in that country by the late Mr. John Gould Veitch. Its fronds grew about 18 inches in height, of which about half is a naked, glossy, chestnut-brown stem; the frond is tripinnate; the pinnae distant; the upper edges rather rounded, more or less toothed; the texture firm and rather leathery; sori, singly on the pinnae, being situated in a deep hollow, whilst the colour is pale-green. It is a very distinct plant, and worthy of a place in every collection of Ferns.

A. FERGUSONI, another handsome Maiden-hair, is a beautiful companion plant. It has recently been introduced from Ceylon, where it has not, however, been found in a wild state, but was detected growing in a garden, nothing being known of its history. It appears to grow readily from spores, and retains its true character. The fronds are erect, tripinnate, and about 2 feet in height, and vivid green; pinnae large, irregular in outline, and deeply lobed on the upper edge. It somewhat resembles the variety of *A. Capillus-Veneris* called Footi.

A. SCHIZOPHYLLUM is also a pretty, neat, and distinct plant. The fronds are supported upon slender, jet-black stems, and seldom exceed a foot in height; they are much branched, all the branches being tripinnate; the pinnae are small, somewhat distant, and rounded above, where they are deeply toothed.

A. NELLUM is a tufted species with bipinnate fronds, which seldom exceed 6 inches in height; the pinnae, somewhat large for the size of the fronds, have short stalks, and are irregularly lobed and toothed on the upper edge, and bear two or three rather large sori on each. It comes from Bermuda.

A. GLAUCOPHYLLUM.—This is an elegant plant, and is considerably harder than either of the previously named kinds, which can be readily understood when I state that it has been found growing in its native country (Mexico) at an elevation of from 6,000 feet to 9,000 feet. The fronds are deltoid in outline, usually four times divided; the pinnae stalked and narrow; sori three to four on a pinnae when mature, chestnut-brown and conspicuous. Its fronds are light and graceful, and as they last a considerable time when cut, are valuable for table decoration.

A. FRAGILE inhabits limestone rocks in various of the West Indian Islands, and is, I believe, tolerably common in Jamaica, from whence I have received it upon several occasions. If in cultivation at the present time it is rare. It was introduced to cultivation by the late Messrs. Rollason, but did not attain any dimensions with them. The fronds are tufted, 6 inches to 9 inches high; stems slender, very short; pinnae stalked and rounded on the upper edge; the infertile pinnae deeply serrated, while the fertile ones are broadly lobed. This plant betrays the careless attendant more quickly than any other Fern I know. Its pinnae appear to be jointed to the slender stipes, so that if the plant suffers from drought the pinnae all fall away, leaving nothing but bare stems, which at once proclaim the neglect from which the plant has suffered. This character will at once prohibit the use of the fronds as a cut state, but when grown into handsome little tufts it is a veritable gem; indeed, the above-named half dozen small growing forms of the Maiden-hair Fern are amongst the very choicest of their kind. *A. fragile* does not like much soil about its roots, and requires to be kept in a very equable state of moisture. It thrives well in limestone. J. J.

3328. — Adiantum Farleyense.—This Fern requires a stove temperature, say, 60 degs. to 65 degs., at night, during its time of growth especially. It thrives best in good loam, and of too light a character; but good drainage is essential. Not producing fertile fronds, it can only be propagated by division of the crowns, and in working up stock it is better to rely upon young healthy specimens, as in this case they may be cut up into single crowns. When the plants are large the individual crowns are wide,

and if cut up into small pieces many of them may die, and, at any rate, they will take some time in getting thoroughly established. Where the atmospheric conditions are genial, either by the use of tanks or evaporating pans in the house or by damping floors, very little syringing is required.—E. H.

3277. — Sowing seeds.—It is not a very satisfactory way to mix up a lot of different seeds and then sow them broadcast without considering the effect likely to be obtained. It will prove a rare assortment, not particularly interesting or beautiful. I should advise you to sow carefully in clumps; but you may scatter such things as Poppies about with very charming effects in the wilder parts of the garden. As this is, however, an ordinary garden apparently you have to deal with, sow in clumps and masses, keeping each kind distinct, as *Mignone*, *Marigolds*, *Nasturtiums*, *Larkspurs*, and the various other things that have been lately recommended in GARDENING. *Marigolds*, *Poppies*, and *Nasturtiums* (*Tropaeolums*) would do well in the dry soil. Remember not to sow the seed too thickly, and thin out the young plants to sufficient distance apart for them to develop when large enough to handle.—C. T.

3313. — Auriculas.—The difference between show and alpine Auriculas is easily defined, owing to their quite distinct original parentage. The show Auriculas are supposed to be from Primula Auricula, a plant bearing trusses of yellow flowers, with a white centre, the white portion being covered with a fine white farina or powder. This white powdered centre is a characteristic of all the show Auriculas. Many of them have also powdered foliage, which the alpinists never have. They are divided into four classes or sections. First, the green-edged varieties, with an edge of green on a dark-maroon or dark-purple ground; second, the grey edge, with a fair powdering of farina over the green edge; third, the white edge, in which the powder is very densely placed on the edge, causing it to be quite white; fourth, the selfs, in which the edge is a solid colour of reddish-maroon, deep black, purple, bluish, or yellow. The alpinists have probably been descended from *Primula pubescens*, a plant which was intro-

duced to cultivation some 200 years ago. There are typical forms of *P. pubescens* still to be found in the Alps of Switzerland and Styria; but they are said to be of hybrid origin. The best forms of alpine Auriculas have a yellow or cream-coloured centre entirely destitute of powder, or there may be powder on any other part of the corolla. The edge is shaded, and in the cream-colour centres is of a purplish-tint. The others are usually maroon-coloured.—J. D. E.

— Show Auriculas are half-hardy greenhouse plants, the flowers of which are usually more mealy in character, or in horticultural dissection have thicker paste than their hardier relatives, the alpine forms. The latter are absolutely hardy, and can be left out-of-doors throughout the severest winter.—A. G. BOLLEN.

3288. — Belladonna Lilias.—These flower very much better at the foot of a south wall than in pots. Hardly ever do they succeed when growing in the open border; they seem to need the warming influence of a south wall to enable the bulbs to mature sufficiently to give even a fair crop of bloom. The wall need not be a high one, but it should have a southern aspect. If the soil is heavy and retentive of moisture, dig out a trench close to the wall 15 inches wide and 18 inches deep. Place a layer of broken bricks, clinkers, or stones for drainage 6 inches thick. Over this lay some freshly-cut turf or freshly-gathered leaves to prevent the fine soil running down among the drainage, thus choking the passage-way for water. Fill the trench with equal parts of loam, peat, and leaf-mould. Cover the bulbs 2 inches with the compost, including the whole surface with leaf-mould 1 inch thick, which will act as a conservator of moisture during the summer. The end of October is the best time to shift these bulbs that have flowered the month previous. In "Black Bear's" case, though, I should say lose no time, but replant them at once.—S. P.

3332. — Worm-casts on lawns.—The reason why worms are so troublesome on lawns is because the lawn-mowers are usually set too low. Drop the front rollers so as to cut half an inch higher, and there will be no trouble with worms. Close-cutting ruins half or more of the lawns in the country. If the machine is set so as to cut higher a dense growth will form like the pile on a Turkey carpet, and the worms will not care to wriggle through such a mass of fibre to unload.—E. H.

3321. — Introduction of the Fuchsia.—There are something like fifty species of Fuchsias, and most of them have been introduced at various periods into England. The genus is founded upon a German botanist named Fuch, who flourished about the middle of the sixteenth century. The species from which popular garden varieties have been derived is probably *F. macrostoma*; and the first plant is said to have been brought to England by a seller, who gave the plant to his mother, and it was found growing in a cottage window, in the East of London, by Mr. James Lee, of the firm of Messrs. Lee and Son, Hemmermith, I believe about the year 1804. From this plant, which was freely distributed, probably all the varieties of the old globe, Moorcroft, and gracilis type are derived. It is a native of South America—Chili, probably. *F. coccinea* is a pretty species, also from South America—it may be Brazilian. *F. fulgens* is well known as a handsome, easily-cultivated garden plant. This was introduced from Mexico about 1830. *F. microphylla* is a charming species with small leaves and flowers, from Mexico. *F. splendens*, scarlet and green-coloured flowers, is a beautiful greenhouse species, and a recently-introduced species named *F. triphylla* from the West Indies is distinct and pretty. The New Zealand species, *F. procumbens*, is very distinct and pretty, producing small flowers and large berries.—J. D. E.

— According to the books, *Fuchsia coccinea* was introduced into this country from Chili in 1788. *F. macrostoma*, from which most of our present race of Fuchsias have descended, was introduced from Chili about 1823. There is a tradition that a sailor brought over the first plant as a present to his wife, and this plant was seen in a window in Wapping, and purchased by a London nurseryman (Mr. Lee, one of the early members of the Hammersmith firm), and the plant was propagated and distributed by him.—E. H.

3353. — Horse droppings.—I certainly do not advise you to use fresh horse-droppings for any kind of soil for potting, much less for Zonal Pelargoniums, which do not require a very rich soil. Good fibrous loam, and a free use of grit or coarse sand, is quite strong enough



A Japanese Maiden-hair Fern (*Adiantum monochlamys*).

duced to cultivation some 200 years ago. There are typical forms of *P. pubescens* still to be found in the Alps of Switzerland and Styria; but they are said to be of hybrid origin. The best forms of alpine Auriculas have a yellow or cream-coloured centre entirely destitute of powder, or there may be powder on any other part of the corolla. The edge is shaded, and in the cream-colour centres is of a purplish-tint. The others are usually maroon-coloured.—J. D. E.

for them. The hooter or Bronze Zonals require something lighter and richer, a little well-rotted manure or leaf-soll is suitable for mixing with the loam for them. With regard to the latter part of your question, I should say it is desirable to remove all the old soil when it is in the condition you mention. Even if it were not so, the plants will be benefited by having a change of soil.—J. C. C.

— Fresh horse-droppings would not be a good thing for mixing with soil for Zonell Peisgeraniums. The danger in growing these is to get the soil too rich, and fresh horse-droppings is very strong manure indeed. The well-rotted manure from an old hot-bed would do very well, and should be used at the rate of one-part of manure to four-parts of loam. Some leaf-mould and sand should be added. If the soil is mouldy and contains fungus—for mould is a fungus—it should certainly be shaken from the roots, as it would be sure to spread if this was not done.—J. D. E.

FRUIT.

FRUIT-TREES VERSUS FOREST-TREES.

FRUIT-TREES stand but a poor chance when brought into close contact with forest-trees, for the latter, being the strongest, especially in respect to their rooting powers, are sure in the end to get the mastery of the fruit-trees, so that if they do not kill them outright they at least reduce them to such a low ebb that the fruit they bear is worthless. If you go into almost any of the old gardens attached to the ancestral halls of England you will, as a rule, find the fruit and kitchen garden shut off and screened from the rest of the place by lofty forest-trees, with an undergrowth of evergreen shrubs, which have year by year sent their branches higher and their shade wider, and their roots in all directions in search of food, and although for some years after they were planted no great harm was done, it is now too plainly visible that the outer parts of the gardens are practically useless as far as any chance of getting either good fruit or vegetables is concerned, and it has often occurred to me that a fruit or vegetable garden, if at all well managed, needs no screening from view, for its occupants ought at all times to be as full of interest and quite as ornamental as the subjects used to hide it. I am well aware that wind-screens are valuable aids to fruit and vegetable culture, but if forest-trees are used for this purpose they will prove a far worse remedy than the disease—at least, if brought too close to the subjects to be sheltered. The roots of Elm-trees will run along just below the surface for at least 30 yards, and no forest-tree should be nearer than 100 yards to the trees or crops that are to be sheltered, as the shade from the branches causes weakly, unripened growth of wood, and fruit can never be of good flavour if it does not get the full benefit of all the sunshine our climate will give us; therefore, in giving shelter, we frequently do more harm than good by giving shade as well. In a great many gardens owners go on year after year putting manure to the roots of their fruit-trees, only for the hungry roots of the forest-trees that have taken possession of the soil to get the benefit of it, for so powerful are the roots in forcing their way through any hard substances, that I have found them pushing right through the joints of brick-walls that had been put down to keep them out of viney borders; in fact, the only way to be safe is to have no trees within a distance that is possible for them to reach your fruit-trees. I may also mention Ivy as a very strong rooting plant, and one that is often planted far too close to Vine and other fruit-tree borders, with the result that Vines have been nearly spoiled before there was any suspicion of the harm the roots were causing. If you desire fruit of good quality, see that the roots of the tree it is to be grown on has sole possession of the space allotted to it.

JAMES GROOM, Gosport.

3337.—**Fine-apples.**—I would not syringe Pine-apple plants at all—neither in the sucker state, nor in any stage of their growth. No plants are easier to grow when once their treatment is understood. The suckers should be grown on in 8-inch or 7-inch pots (with the

well rooted; after that plant them in the fruiting-pots. These should be from 10 inches to 12 inches diameter. Excellent Pines can be ripened in 10-inch flower-pots. Troughs on the pipes are not needed. I really think much evaporation from troughs does more harm than good. They require quite a hot-house temperature to do them well—65 degs. at night, with a rise of 10 degs. to 15 degs. more by day. The glass should never be shaded; as much light is needed as they possibly can obtain. In winter they rest by being kept dry at the roots, and in a minimum temperature of 55 degs. to 60 degs.—J. D. E.

— The night temperature for succession Pine plants now should be from 60 degs. to 65 degs., with a rise to 75 degs. before air is given. The syringe should be used on bright days only. Troughs on the pipes will be useful, as it will not then be necessary to damp the paths so often. Pines must have a moist, genial atmosphere from this time on through the summer, with a shade on bright days.—E. H.

3338.—**Apricot Moor Park.**—The tree is probably growing in a loose, rich border, and the best thing to do next autumn will be to lift it and replant, working a little old lime or plaster into the border. Lift carefully, with as little injury to the roots as possible; spread the roots out carefully in a horizontal position from 9 inches to 12 inches from the surface. Apricots and Peaches do best in firm borders.—E. H.

— If first dealt with when the tree has been planted three or four years, there is no tree that pays better for periodical lifting and replanting than this Apricot, but it resents root pruning. If carefully done lifting does not mutilate the roots so much as root pruning. Lifting also checks excessive growth without preventing the formation of fruit-bearing wood. From what I have seen of the behaviour of the Apricot in Cornwall you had better let your tree grow unchecked if you cannot lift the roots periodically as suggested.—J. C. C.

— The trees will make a lot of wood if they are grown in overrich soil, and when they grow too vigorously they do not fruit so well. As the tree has been root-pruned two years ago, there is nothing more can be done for it except to see that no manure whatsoever is given to it, and it will not make so much or such strong wood. When the tree gets into a good bearing condition, this will prevent its being too vigorous, and manure should be applied as a surface-dressing after the fruit is set.—J. D. E.

3348.—**A Sweetwater Grape-Vine.**—It is rather late to cut down the Vine now, as it might bleed to an injurious extent. The best thing to do is to rub off all the buds as they appear, except the two nearest the ground. As these grow train them vertically up the wall, and if the plant makes good growth these canes will be strong enough to bear fruit the next year. If you do not mind waiting a year longer for fruit a better plan will be to take the two canes down in a horizontal direction about 1 foot from the bottom of the wall, and in the following year train up a cane in a vertical direction about every 2 feet.—J. C. C.

— Bend the Vine down so as to get three eyes to break within about a foot from the bottom. If it was not so late I should say cut it down to within a foot or 15 inches of the base, and cut off all shoots but three. Of these leave the upper one perpendicular, and the other two right and left of the main stem at right angles about a foot from the ground. If the bottom shoots develop well, pinch the centre one when it has made 5 feet of growth, and let the bottom shoots make all the growth possible. From these bottom shoots will spring, in future years, other shoots which should be trained perpendicularly about 2 feet apart, and these will form the main bearing rods. It is a good plan to renew these from time to time by training up young shoots and cutting out a corresponding number of old ones.—E. H.

3326.—**Grape Groe Guillaume.**—Those who are fond of sensational bunches of Grapes should grow this variety. Bunches are produced up to 20 lb. weight, but one weighing even 10 lb. is a fine sight. The berries are quite round, but only of fair flavour. It is not nearly so valuable a kind to grow as Black Hamburg, neither is it so easy to secure regular crops. If the pruning is not carried out every year just right, so many of the growths are minna bunches, whereas in the case of Black Hamburg

every shoot more often shows two and sometimes three bunches. If "W. M." dooedes to restrain the cane, he should cut it down at once within two eyes of the base, to make sure of a stout growth. When the lower shoot can safely be said to be out of danger of stings, which are at times very troublesome, remove the top-growth, thus restricting the cane to one main rod. Encourage this to grow as far up the rafters of the house as possible the first year, pinching the point out of all side-shoots at the end of every second joint. In November next prune the cane to within 4 feet of the base. One of the side-growths pushing from the main rod will most likely show a bunch; this number will be quite sufficient for the first year. Continue the pruning of the leader in the same way until the limit is reached. Instead of pruning the side-growths every year to within an eye or two, allow every other to extend 6 inches long; from these the best bunches will be produced. The following year cut these back to within a single eye, and prune the others to 6 inches. By following this method of pruning every year a sufficiency of bearing wood is maintained. The greatest mistake cultivators make in growing this Grape is that of overcropping. If too many bunches are allowed to remain the berries will not swell to any decent size, neither will they colour satisfactorily. Even when the cane reaches the top of the house four good-sized bunches is an abundant crop, if these average 7 lb. each.—S. P.

— These who say that this Grape is not worth growing cannot have tasted examples that had been skillfully grown and ripened by the aid of fire-heat and kept to the following March, when it is very good and has a fine piquant flavour. At the same time, it is not a Grape that is suitable for general cultivation, and if you cannot give it the conditions I have indicated, and prepared to keep it until February at the earliest, you had better not attempt its culture. Young Vines bear indifferently, especially when the roots have the run of a deep and rich border.—J. C. C.

— This is the Grape usually grown as Barbarosa, or Black Barbarosa. Dr. Hogg found that the Barbarosa was quite a different and much inferior variety. It is certainly well worth growing, but it needs a high temperature, the same as Muscats, and plenty of room to grow. As the laterals push out to considerable length, there should be a space clear of 2 feet 6 inches on each side of the rod for the laterals to develop well. It produces very large bunches and larger berries, and although the flavour is inferior to some late Grapes, when well ripened there is not much to complain about in this respect.—J. D. E.

— This Grape is not equal to Gros Colman in any one point. It has a large, loose bunch, though the looseness may to a certain extent be remedied by shortening shoulders and cutting away the ends of the bunches. The Grape is a good setter, and may be grown in a lower temperature than Gros Colman. To make the Vines bear freely young rods should be taken up successively.—E. H.

3346.—**Caterpillars on Gooseberries and Currants.**—There is nothing like Hellebore-powder for ridding the trees of these pests. Sprinkle the powder over the trees in the evening, and vigorously syringe the trees with clean water in the morning to cleanse them of both powder and caterpillars. It is necessary to be careful in the use of Hellebore-powder, as it is poisonous, but there is not the slightest danger in using it if the trees are well washed afterwards.—S. P.

— Picking the caterpillars off is out of the question, and applying nostrums to the bushes is seldom effectual. As far as my experience extends, I believe the best plan is to dig the soil out from under the bushes and replace it with new soil from another part of the garden. This can be done in winter when the ground is being trenched in a part of the garden not too near the bushes. Bury the soil in the bottom of the trench, and replace it with soil free from the larvae of the caterpillar. Dusting with Hellebore-powder will soon kill them; but some escape from this and soon breed a numerous progeny.—J. D. E.

— As the saw-flies and meths, which are the parents of the caterpillars, are provided with wings, it is hopeless to expect by any process finally to get rid of these pests. You may also destroy caterpillars out of your garden one

year, but your next-door neighbour may neglect to do the same, and the insects produced from his bushes will lay eggs on yours, which will produce plenty of caterpillars for the following season. It is one of the singular facts about this world that dirt, disease, and vermin cannot be eluded away once for all by any process.—A. G. BUTLER.

3354.—Treatment of Peach trees.—No treatment could be better than yours, so far, providing you gave water enough at one time to reach all the roots. With regard to syringing, you may commence to do so as soon as the fruit is set; but do it gently at first, by which I mean do not use more force with the syringe than will nicely moisten the young foliage, or you may injure the tender skin of the young fruit. As the latter gets larger and the leaves stouter you may apply the water more vigorously, and if your trees are trained to a wall or on wires, get sideways when you ply the syringe, so as to get the water to reach the underside of the leaves. In the matter of shading, my advice is that you do not do as you propose, but let your trees have all the benefit of the sun, or the fruit will be sour instead of luscious and juicy. If your house is fully exposed to the afternoon sun you must vary your treatment according to the weather. When the sun is very

frame, and a few weeks later planted out where they are to flower. If your soil is light, you may succeed by sowing in the open. Three years in succession nearly all my stock have been killed by the frost, so that I am pretty well tired of trying to grow them.—J. C. O.

— Sow the seeds thinly on well-prepared beds now, either in shallow drills, or, if broadcast, cover with the sieve. Leave the plants to bloom where raised. They are bad things to transplant in a growing state; the check would probably prevent them blooming the first year.—E. H.

OUTDOOR PLANTS.

A FEW GOOD HERBACEOUS PLANTS.

MANY amateurs are deterred from growing any herbaceous plants by reason of the number of weedy, useless things that are highly extolled in catalogues, but bring nothing but disappointment to those who invest in them, while older, well tried subjects are hardly known. The following brief list, all of which ought to be planted without delay, are amongst the very best for good effect in the garden, or for providing material for the cut-flower basket—viz.:

ACHILLEA PTARMICA FL.—A beautiful plant that continues to flower all the summer, heads

summer, are strikingly handsome, the colours being soft and the petals beautifully serrated.

PHLOXES are too numerous to enumerate all the good sorts, but they are wonderfully improved of late, not only in finer bloom, but in dwarfier more compact habit of growth.

PYRETHRUMS, single and double, are amongst the best of all flowers for cuttings. Planted on good soil and the clumps divided at this time of the year, they continue to bloom almost the entire season.

PYRETHRUM ULIGINOSUM is a splendid late blooming plant, the spikes of bloom on good soil reaching 6 to 7 feet high. It is one of the largest of the Daisy-like flowers, and being pure white, comes in most welcome for harvest festivals and other decorations. Where large masses of colour are required, it likes rich, moist soil, and should be transplanted every year.

TRITOMA OR KNIPHOFIA is a grand autumn-blooming plant, its stately spikes of bloom being produced very freely. *T. Burchellii* is one of the best varieties for continuous blooming. Well-managed mixed herbaceous borders form the subject of the annexed illustration.

J. G., *Hants.*

3329.—Tufted Pansies.—These are what the name implies, *Pansia* with a tufted habit of



OUR READERS' ILLUSTRATIONS: Hardy flower borders in summer at Osmanthorpe House, Newark-on-Trent. Engraved for GARDENING ILLUSTRATED from a photograph sent by Mr. S. Kercheval Marsland.

bright close the ventilators at 5 p.m. instead of an hour earlier, and always syringe the trees at closing time, and in very hot weather damp the foliage again at dusk, so that the leaves remain moist all night. You may, however, be careful to open the house early enough in the morning (not later than 7 a.m.) so that the foliage may get dry before the sun reaches it. The corner of your house that gets so hot and dry must be specially dealt with, or red-spider will do serious injury. After well watering the border, cover the surface over 3 inches thick with a layer of sawdust or Cocoanut-fibre, and keep it regularly moist. Also syringe the wall and woodwork three or four times a day. As a further preventive measure against red-spider, get two or three slates and paint one side of them with sulphur mixed with milk, then suspend them so that the sun can shine directly upon them through the glass; the fumes given off by the sulphur are very obnoxious to these insects. If I can help you further, please write again.—J. C. C.

3330.—Anemones from seed.—I used to raise my stock of Anemones in the open ground by sowing in February or March, but I found the seedlings were so long in coming up that I now raise the plants in the greenhouse. My stock for next year is just coming up and when they are large enough will be picked off in other boxes, and afterwards placed in a cold

bed of pure white flowers, well adapted for any kind of floral decoration; it pushes out undergreened stems at this time of year, and soon forms large clumps.

CHRYSANTHEMUM MAXIMUM.—One of the very best of all hardy White Daisy or Marguerite-like flowers, as it continues to branch out and produce fresh blooms not only all through the summer, but right up to the time when frost cuts off all outdoor display.

HELIANTHUS MULTIFLORUS.—One of the best of Double Yellow Sunflowers, and, as its name implies, extremely floriferous; it makes a good background plant in mixed borders, and for cutting is excellent.

HARPALIUM RIGIDUM.—A very beautiful orange-yellow Single Sunflower, with very dark centre, attains a height of 5 feet to 6 feet in good soil, and continues to branch out and produce an unlimited supply of bloom.

IRISES, in great variety, are extremely beautiful plants, their fine foliage being very ornamental, while the colour of the blooms rival that of costly Orchids.

PRONIES have of late years become very popular, and deserve a place in every collection of hardy plants. The older sorts, with their massive crimson, pink and white blooms, are by no means to be despised; but the newer Continental varieties, that bloom mostly later in the

growth, which eminently fits them for adorning the flower garden and growing in a variety of ways. Since this came was given them they have become much more popular and many new kinds have been raised. Originally they were called *Violas*, and unfortunately many prejudiced people adhere to and use the old name, which, however, is unwarrantable, misleading, and confusing. Every true wild Violet or *Pansy* is a *Viola*, and one can find no justification for, but can see much confusion arising from, giving the true specific name to a particular race of garden hybrids of mixed parentage. The wild *Pansy* and many of the florists' show kinds have a loose, straggling habit of growth, but the Tufted *Pansy* covers the ground with a rich, more or less dense turf of shoots, and then becomes sheathed with blossom. It is quite one of the loveliest of spring flowers. Here is a selection of kinds, all of which I grow: *Abercrombie Gem* (clear, soft yellow with blue eye), *Archie Grant* (rich, plum-purple), *Ariel* (mauve-blue, one of the loveliest), *Countess of Hope-toun* (pure-white, without spot or marking), *Countess of Kintore* (purple and white, a striking kind), *Jackanapes* (upper petals crimson-brown, lower ones yellow), *Elegans* (laveder-blue), *Quaker Maid* (one of the best of all, soft mauve), *Skylark* (written with a distinct edging of blue round the petals), *Violetta* (white, dwarf, very tufted, very lovely), *Dand* and *Mrs. Grey* (crean-

white, an old but pretty kind. It is not usual to give the names of vendors, but as you ask for one in your district, with the Editor's permission, I might remark that in all probability you could obtain the kinds here enumerated at about 4s. per dozen in Mr. Barr's nursery at Long Ditton.—A. H.

INDOOR PLANTS.

3342.—*Euphorbia splendens*.—Preliminary speaking, this is a stove plant, but it will live through the winter in a warm greenhouse if the roots are kept dry from the middle of November to the end of February. The plant will, however, grow much faster in a higher temperature. It does not require much pot room, nor much water in the winter season. Good fibrous loam three parts, and sunnypat, is a suitable compost for it, and it must have plenty of drainage. When your plant gets large enough, train it loosely to a few sticks in a natural manner as you can. Masaly-bug is the only insect that troubles this plant.—J. C. C.

—This onion has exceedingly useful plant is naturally of a free and branching habit of growth, and may be trained in bush-form, a stout stick being placed to the main or central stem, and a few smaller ones to support the side-branches, as the head is naturally inclined to be heavy. I have also grown it with three or four stems only, these being not too formally bent round and tied to three or four sticks placed round the sides of the pot. It should be potted in light and rather poor and sandy soil, such as a mixture of loamy peat and sand, with a little leaf-mould and old mortar-rubbish. The drainage must be free, and the plant should not be overpotted. It succeeds best in the full exposure to the sun, no shade whatever being required.—B. C. R.

3317.—*Primula obconica*.—This grand plant is readily increased by division, and there can be no better time than when the bulk of its blooms are over. *Primula obconica* is almost perpetual flowering. Mine are being divided this week. They are also very freely raised from seed in the same way as *Primula sinensis*. I find the most suitable compost to be the following: Leaf-soil, one-third; loam, one-third; the remainder to be made up of broken charcoal, sand, and well-decayed manure. They enjoy a good supply of water, and are much best if kept partially shaded for a few days after division. There are few plants more easy to grow, or more generally useful for amateurs than this *Primula*.—P. U.

—The question is asked whether *P. obconica* can be divided? Probably it can, but the plants will do no good after. This species should be raised annually from seed, and, to do it well, it should be treated exactly like the *Primula sinensis* or Chinese *Primula*. I have tried it in frames and unheated houses, but it does no good, and should have a warm greenhouse. It is a very useful greenhouse plant, producing flowers all through the winter and early spring months; in fact, it is seldom out of flower. Pot the plants in a compost of loam four parts, leaf-mould one part, one part decayed manure, some sand, and a little fibrous peat. This seems to grow them admirably.—J. D. E.

—Divide *Primula obconica* when there comes a lull in the flowering, or, say, any time during April and May. Any good soil will grow this plant. It is very easy to manage; cold-frame treatment suits it best in summer, or it will do in the open air in a shady position. Plants from seeds sown now will flower next autumn.—E. H.

3324.—*Sedum Sieboldi*.—This *Sedum* was introduced from Japan in 1838. It is quite a distinct species, and makes a very pretty pot-plant, easily grown in any good soil. The flowers are produced in clusters at the ends of the shoots, and are pink in colour. The plants require the protection of a frame or cool-house in winter. It is easily propagated by cuttings, or by division of the root, or seeds.—E. H.

3352.—*Out-flowers for winter*.—Double White *Primulas* (Chinese), with *P. obconica*, *Gloxinia Snowflake* or *Her Majesty*, White *Cinerarias*, and the *Marguerite Carnation* "Snowflake" will be found very useful and easily raised from seed, which should be sown at once. Of the following cuttings must be inserted now or shortly—Double Zonal *Pelargoniums*, *Bouvardia Freelandi*, *Abutilon Boule de Neige*, *Paris Daisy*, and *Chrysanthemum*.

Snowdrops, and others. You had better buy young plants of the *Trees-Carnations*, and shift them into 6-inch and 7-inch pots.—B. C. R.

3347.—*A removable greenhouse*.—I should advise you not to use any brickwork at all, beyond just a single row of loose ones laid down for the timbers (or "plates," as they are termed) of the house to rest upon. These "plates," which should consist of stout quartering—6 inches by 3 inches is a good size for a small structure—must be "halved" together at the corners, and the posts or uprights mortised into them. Fill in the lower part of the front or sides and ends with stout match-boarding, and the upper portion above the staging with glass.—B. C. R.

3351.—*Building a greenhouse*.—Whether brick or stone will prove the cheapest depends altogether upon what part of the country you reside in. If within a few miles of a quarry, stone will probably be the cheaper; if in a clay district, brick will come less expensive. It is the cost of carriage more than of the actual material that tells. You will find it cheaper to buy machine-made sashes, &c., than to have them made by hand at home; but as regards the roof, much the least expensive method is to get the wall-plates and ridge in place; then cut the rafters (formed of stout ash-bar stuff) to the right length and shape at the ends, and simply nail them in place at the same distance apart as the width of your glass. Of course a house so constructed is not so easily removed as one formed of sashes, but it is much cheaper in the first place, and lighter as well.—B. C. R.

3343.—*Heating a greenhouse*.—I have never used the glazed socket-pipes for hot-water work myself, but I saw an apparatus fitted up in this way in a small house not long ago, and was given to understand that it acted satisfactorily. I do not know of any reason why this description of pipes should not answer the purpose, the joints being carefully made with Portland cement.—B. C. R.

3333.—*Plants for a cool-house*.—Provided the house is fairly light and well ventilated, and receives plenty of sun, Tomatoes will succeed in it very well during the summer and early autumn months. You may put out strong plants from the middle to the end of April, according to the weather, and they should commence fruiting in June, and continue until out off by the first sharp frost. Beneath the Tomatoes may be grown *Fuchsias*, *Begonias*, and, indeed, almost any cool greenhouse plants, from May till October; with *Chrysanthemums* in the autumn, Christmas Roses, *Lanrostinums*, *Violets*, &c., in winter, and bulbs of various kinds in the spring.—B. C. R.

—In a warm position Tomatoes will succeed in an unheated house if not planted too early. If the plants can be raised and grown to a good size before and kept in the house is heated it will be more useful, considering the character of the seasons of late years. One of the best ways of furnishing a cold-house is to plant it with *Tea* and *Noisette* Roses.—E. H.

3350.—*Treatment of Ten-week Stooke*.—This fault—a kind of "shanking"—arises from imperfect drainage and an insufficient supply of moisture. You should place a full inch of bricks, broken small, or fresh coal-cinders, in the bottom of the seed-pans or boxes, with some rough siftings over, and keep the seedlings quite near the glass, with plenty of air, and then there will be very little "shanking." I always succeed much better with these *Stocks* by sowing on a greenhouse shelf in February than in a hot-bed in March. Keep the soil moist, and if a few plants should go off in this way, shake a little dry sandy soil among them, and prick off as soon as possible.—B. C. R.

3323.—*Plants for a shelf*.—*Echeverias*, *Air-plants*, and *Ice-plants* would answer your purpose. As regards the last mentioned, I considered them so uninteresting and even ugly that I tried an experiment with mine to see what they would bear. I stood them on the floor near the hot-water pipes, and never watered them for about three months, yet they still looked healthy; in fact, so much so that a neighbour who admired their peculiar ugliness asked me to let him have them, and thus I got rid of them.—A. G. BUTLER.

—Many plants succeed admirably on shelves near the glass, particularly during the autumn, winter, and spring. Of such are the *Thick-rooted* and winter-flowering *Begonias*,

Gloxinias, *Primulas*, *Cyclamens*, &c., but all these must be regularly watered as required, or they will do but little good. Beyond the *Cactus* and a few other succulents, such as the *Crasulacae* (*Kaloesanthos*), *Rochea falcata*, *Sempervivum*, &c., there are very few things that will succeed if frequently allowed to become thoroughly dry at the root. Perhaps the *Ivy-leaved Pelargoniums* suffer less from occasional want of water than most others.—B. C. R.

—You might grow a collection of *Mesembryanthemums* (*Fig Marigolds*), of which there used to be many varieties in cultivation. *Aloes*, *Gasterias* (*Tongue-leaved Aloes*), and other allied genera may also be grown.—E. H.

3320.—*Pitcher-plant* (*Nepenthes Sedeni*).—This is a garden hybrid belonging to a genus of plants requiring a very warm temperature and moist atmosphere. They do require to be syringed to keep them clean; but I find they will do without it if they have the moist atmosphere and temperature of 60 degs. to 65 degs as a minimum, or even 70 degs. in summer. Water freely with rain-water if it can be obtained, rather warmer than the atmosphere of the house. They should never be quite dry at the roots, and succeed best in Teak baskets, suspended from the roof-glass.—J. D. E.

3334.—*Stove in a greenhouse*.—I do not see any difficulty in fixing a "Tortoise" stove so as to connect it with your existing flue, but whether the draught will be sufficient I do not know, and I am afraid that you would not get sufficient heat from a stove of a small size. Looking at the simplicity of the working of the "Tortoise" stoves, and the easy way in which they are fixed, I think your idea a capital one, and I thank you for bringing the idea to my notice, as should you find it answer it will be of great value for others as well as yourself. Anything that will increase the convenience of amateur growers always interests me.—J. C. C.

—Do you intend to use the "Tortoise" stove to supply heat (by means of hot-water pipes) to another structure? This can be done, but you will not obtain nearly as much heat from the flue in this way as with a brick furnace. The best kind of a furnace for a flue—at least, where coke is the fuel employed—is the deep square one I have so often advocated, and if a little heat is wanted for another purpose from the same fire I would make the surface round, and build in a small coil in the lower part.—B. C. R.

3355.—*Badly shaped Azaleas*.—If the plants are not old ones and the roots active, you may cut your plants into shape by removing the straggling growth, but I wish you to understand that there is a certain amount of risk in dealing with them in this way. Any plants in the condition I have stated would start into growth if cut back and afterwards placed in a temperature of 65 degs., but old neglected examples would be a longer time in recovering from such treatment. If you decide to cut them back you must do so as soon as the bulk of the flowers have faded, and place them in a warm-house at once, where they can be regularly syringed, and have a thin shade on the glass, and remain under this treatment until the young shoots have grown from 1½ inches to 2 inches long, when they will require more air to harden the growth and assist them to form flower-buds. Treated in this way, you should get a good show of bloom next year. If it was my case I should prefer to bring the plants into a better form by training the long outside growths to sticks so as to bring them more into the middle. If this is done when they go out of flower the plants would grow into a better shape before another flowering season comes round. This is the only way to make presentable specimens of such flat-headed varieties of *Azaleas* as youre.—J. C. C.

3325.—*Saccolabium Blumei* and *Dendrobium album*.—*Saccolabium Blumei* and *Dendrobium album* are both stove plants, and as regards temperature require about the same. *S. Blumei* may be grown either in flower-pots or Teak-baskets, planted in a depth of 3 inches of *Sphagnum Moss* and potsherds. If they are grown in flower-pots, the remainder of the depth should be filled up with clean crocks loosely placed in. The plants like to be grown near the glass roof, and to be protected from the sun by a thin shading. A temperature of 60 degs. suits them in winter, 65 degs.

to 70 degs. in summer; these are the minimum temperatures. They should be 5 degs. to 10 degs. higher in the day-time. *D. album* is misnamed; it is the *Dendrobium aequum* of Lindley, so named because of "its pale, watery-green flowers, quite destitute of colour." It was introduced first from Bombay by Messrs. Lodiges, and flowered in their nursery at Hackney in 1842. Dr. Lindley says it should be potted in rough, turfy peat, well mixed with pieces of broken pots. Fill the pots half full of peat-shards, and elevate the peat well above the rim, giving plenty of water in the growing season. Dr. Lindley's temperatures are right—50 degs. to 55 degs. in winter; 68 degs. in summer. It has been found quite recently by Major-General E. S. Berkeley, who found it on the Nilghiri Hills in Northern India, growing in quantities on old Coffee-plantations. The rainfall there is excessive, as much as 10 inches in a day. Grow it in pots or baskets, and the usual peat and Sphagnum compost.—J. D. F.

WHITE FLOWERS FOR EASTER.

The near approach of one of the annual festivals when white flowers are in great demand calls for extra exertion and forethought, not only in

DEUTZIA GRACILIS is one of the most useful of all white flowering plants for spring-blooming. Plants that have made strong growths of well-ripened wood in the open air should be lifted in November, potted in good loam, and set in any cold-house or pit until Christmas, when they should be placed in a genial growing temperature, and by Easter every shoot will be a perfect wreath of the most lovely white blossoms.

EURYBIA QUENNI, OR *OLEARIA GUNNIANA*, is a beautiful dwarf shrub, covered with white, star-like flowers, and needs very little artificial heat to get in bloom in March.

FREESIAS.—These beautifully scented flowers are now in great request, and if kept in quite cool-houses or pits will flower naturally about Easter-tide.

HYACINTHS, of all the pure-white sorts, are very effective either as pot plants or for cutting. For pot plants, three bulbs in a 6-inch pot look well; but for cutting, the bulbs grow just as well in boxes.

LILY OF THE VALLEY requires only a gentle heat to have it in perfection at Easter, and for cutting large clumps of good flowering crowns may be placed in boxes and brought on gently in any warm house. They start into growth best

useful of all decorative plants, or for supplying cut flowers in quantity; its light, feathery spikes look well and give a light, graceful look to any arrangement in which they are used. They are of the easiest culture, for with good clumps of crowns, potted in light, rich soil, and kept well supplied with water at the root, one can hardly fail to have good plants.

TULIPS are very effective, and easily timed to come in for any given date. They should be potted or boxed in November, and kept in quite cool quarters, and about a month before they are required can be placed in warmer quarters if not forward enough. White Van Thol, single, and La Candeur, double, are excellent kinds. JAMES GROOM, Gosport.

AUSTRALIAN FUCHSIAS (CORREAS).

My attention has been again called to these plants by the great beauty displayed by some specimens I have seen for three months in the dulllest time of the year. The colonists employ the leaves of *C. alba* for a drinking beverage, using them in the same way that we use Tea here at home; but those with gardening tastes love the plants of this family, as they remind them of the Fuchsias of the old country. With us here in England, some forty or fifty years ago, they were much sought after, their gay and brilliant flowers serving to decorate the greenhouse during the dull winter and early spring months; but of late years these plants have not found favour with the majority of plant growers, and it is only here and there we find places where they are grown at all, and, indeed, I think that the Messrs. Low, at their Enfield nursery, do more to promote the cultivation of the Australian plant than any other nursery firm in the country; but even there I hear great complaints from both employers and their salesmen about these and similar plants not finding a ready sale. One man said to me, pointing to some fine *Pimelea spectabilis* plants: "Even such things well laden with bloom as they are get a begging." But I hope that better times are coming, and that we shall again have the greenhouse plants as fine as they used to be shown by Mr. Green, Mr. Cole, and Mrs. Lawrence, and many others in their day; but then the atmosphere of London was better in those times than it is in the year of grace, 1893. These very pretty plants, the *Correas*, are evergreen shrubs, flowering mostly in the winter and spring months. They can be struck from cuttings, but the custom has become pretty general to graft them, because they do not appear to grow so vigorously upon their own roots. *C. alba* is a very fine one, and it has been fixed upon as the kind to select for a stock. When established they soon commence to grow, and to bring them into shape and make presentable they require to be frequently topped—that is, have the points of the shoots taken out; but as their natural habit is bushy, they do not want much training. They will require repotting soon, draining the pots well, and using for soil a compost composed of about two parts good peat, one of light yellow loam, and one of sharp silver sand. After potting they must stand in the greenhouse or the frame until they get well rooted, and after this they should be stood in the open air for a time, but protected from heavy storms of either wind or rain; but early in the autumn they should be removed indoors, where they will soon begin to display their charms, continuing all through the winter and spring. I should be glad indeed to see these and other Australian plants again become fashionable. The following are a few of the most commonly grown; but they are plants that readily cross-breed, and, therefore, new and fresh varieties may be easily obtained. *C. alba*: This is a somewhat small-flowered, white kind, which should always be kept in stock, as it is the best and freest-rooting, and should be used as a stock. *C. brilliant*: A fine habit, and large flowers of a rich bright-crimson. *C. cardinalis*: An abundant bloomer, but somewhat lax in its habit of growth, requiring some care in its pruning; flowers large, bright-scarlet, tipped with green. *C. Harrisii*: A plant of good habit of growth, and free in blooming; flowers of a vivid-scarlet. *C. pulchella*: As its name implies, this is a very pretty kind, being compact in habit, and its bright-scarlet blooms are freely produced. *C. magnifica*: This is a robust, free-growing kind; it produces the large white flowers in abundance.



Out-flowers of "Geraniums" or Zonal Pelargoniums.

forcing or hastening the blooming period of many kinds of flowers, but also in retarding others, so as to concentrate a large supply on a given date. The following kinds are well suited to the purpose—viz.,

AZALEA INDICA, in many varieties, are plants that naturally bloom at an early period of the year, and therefore require very little artificial heat to have them at their best for Easter. The old *A. indica alba* is a grand variety, but for pretty little plants, with fine semi-double blooms, having large round petals of the purest white, there are none to surpass *Danteche Perle*.

CHOISYA TERNAUTA (the Mexican Orange-flower) is a beautiful evergreen shrub that on open walls in the South of England blooms very early; but it is liable to have the purity of its lovely blossoms spoilt by late spring frost. For this reason I find it best to plant it as a wall climber in the back walks of vineries or any glass-house, where it will produce a splendid crop of bloom in spring.

CALLA (RICHARDIA) ETHIOPICA is essentially a spring-flowering plant, and at no period of the year are such quantities of bloom seen in the market as at Easter. Single crowns grown in medium-sized pots and kept in an intermediate temperature will flower splendidly, and may be hastened on or retarded at pleasure.

if placed under the stages, lifting them up close to the glass when the bloom-spikes push up.

LILIUM LONGIFLORUM and *L. Harrisii* are splendid plants for Easter decorations. Good strong bulbs should be procured in September, and potted singly in 5-inch or 6-inch pots, setting them in a cool frame, and keeping moderately dry until they start to grow, when they may be transferred to a shelf near the glass, in a temperature of about 50 degs. Keep a sharp look-out for green and black fly, as they soon spoil the purity of the bloom.

NARCISSUS of all the white kinds, if kept in a cool house, will be at their best for Easter. The double kinds are especially good.

PELARGONIUMS, Single and Double Whites, have been greatly improved of late, and having finely formed massive blooms, are very effective in floral decorations (see cut). *Queen of Whites* is probably the best of all Singles. A dry, moderately-warm atmosphere to keep the blooms from damping is the thing to aim at.

ROSES need only very gentle forcing to have them in bloom at Easter—in fact, a cold-house, if facing south, will usually hasten them enough. There are none to excel *Niphetos*, of which there are two distinct varieties, the climbing one being excellent for training on wires, close to the glass, and the older dwarf variety for pots.

STYLIS VARONICA, certainly one of the most

C. speciosa: This is also a good free grower and flowerer, but its tubular flowers are erect and bright-red. *C. vaustricosa* is a slender grower, but bushy in habit; the flowers are large, bright reddish-crimson, with the tips green. J. J.

HOUSE & WINDOW GARDENING.

PLANTS FOR WINDOWS AND ROOMS.

The spring season is at hand, when those who wish to keep their windows and rooms bright with plants will think of purchasing the most suitable things. I will point out a few plants that will live under such conditions, and by keeping to this selection much disappointment may be prevented. The fault is in buying from street hawkers little Orange-trees and exotic plants that are "made to sell" by being placed in strong heat to promote quick and apparently vigorous growth. But unfortunately it is this type of plant that when placed in a room or window, the temperature, of course, being much lower, soon presents a very woe-begone aspect. In a week scarcely a leaf remains, money is wasted, and sometimes plant-growing is given up as a troublesome, expensive, and disappointing pursuit. The true reason, however, is that an improper selection has been made, as there are several plants that will thrive in windows and rooms almost as well as in a plant-house. Where dust and dirt are less prevalent

The **INDIA-RUBBER-PLANT** (*Ficus elastica*) is one of the most popular things to grow in rooms, and when brought from a street barrow or shop care must be taken that at the commencement the plants are not exposed to cold draughts. Most probably they have been heated in a high temperature, and feel acutely the sudden change from strong heat to cold. The glossy, rich green-leaved examples one sees are nearly always thus treated before being sold, and they are lacking in hardiness and strength. As the India-rubber-plant is excellent for rooms, it is very easy to first place the plants in the warmest rooms of the house, so as to gradually inure them to their altered conditions. Always water with care, more mischievous results from improper watering than many are led to think, the soil being always kept moderately moist and no more. Also sponge the leaves occasionally to remove impurities from the surface, as in rooms, especially near large towns, they quickly get covered with dust and dirt. It will not be often necessary to repot the plants, as with careful attention in watering they will last a long time without need of disturbing the roots. An excellent soil when potting is needed is one made up of loam and peat, four parts of the former to two of the latter, with sufficient sharp silver-sand to render the whole fairly porous. Two or three clean crocks in the bottom of the pots will suffice for drainage.

ASPIDISTRA LURIDA and its variegated variety are the two best window room plants one can have. The variegated variety is the brighter in appearance, its broad leathery leaves being finely marked with cream colour. A well variegated example is as choicest as a flower. Under the most unpleasant conditions for plant life the *Aspidistra* will thrive, the great point being to give water judiciously, and keep the leaves carefully sponged. Sometimes the variegation on the variegated form departs, when the plants are grown in the shade, and, therefore, if the position is dark, select the green-leaved type. Even in shop-windows in London this Japanese plant will thrive with vigour. Ordinary heavy soil suffices, and constant repotting is unnecessary. The plant is of slow growth, and fine specimens are expensive, each leaf as a rule being valued at one shilling. On the Continent, where the *Aspidistras* are grown in great numbers, the price of the plant depends upon the foliage, this being reckoned at a franc each leaf. If only one plant is selected for the room or window it should be this *Aspidistra*.

ACACIA LOPHANTHA does not look much like a good plant for rooms, but it is excellent for this purpose, the beautiful feathery foliage and yellow flowers appearing to distinct advantage, even in rooms lighted by gas. When young pinch back the shoots occasionally to prevent the plants growing too tall, and always maintain the soil in moist condition. When in full bloom it is most attractive. The graceful *Cyperus alternifolius* and its variegated variety will live for years in rooms, and grow in a plant-pot

age. The growth is very graceful; and when placed in a bowl an excellent adornment for a room is gained. A large healthy specimen of *Cyperus* is of much beauty, and as it delights in moisture, this is one of the main requisites. If allowed to become dry, the growth soon gets unhealthy. It may be in the summer months almost stood in a bowl of water. A very useful plant for windows is the

AFRICAN ALOE, of which there is a very attractive variegated variety. The firm leathery leaves kept clean by occasional spongings of water, and if the latter kind is used sun is necessary to preserve the distinctive variegation. When potting make the soil firm, and ensure good drainage by providing plenty of crocks.

CORYPBA AUSTRALIS makes a good window Palm, and the same precautions must be taken as advised for the India-rubber-plant. Keep the leaves sponged well, and the soil not too wet. These are a few of the more useful house and window plants, because they invariably do well if reasonably attended to. *Yteris tremula*, and *P. cretica*, both the type and its variegated form, may also be made note of, and of flowering plants outside the usual things, such as *Pelargoniums*. One has a treasury of good window subjects in the Bell-flowers (*Campanulas*), especially *Campanula isophylla*, *C. carpatia*, and *C. muralis*. In many country towns the windows are made gay with these in hanging-baskets throughout the summer. They bloom with such profusion that often almost every leaf is hidden. C. T.

3275.—Flowers for a hall in winter.

—Yellow Winter Jasmine would not open its buds well in a hall, where there is usually but very little direct sunshine. It is a hardy climbing shrub, and grows best on the wall of a house; it might possibly be grown out-of-doors in a pot, but would not bloom freely in that way. A Myrtle (which, however, flowers in summer) might stand for a short time without injury in a hall in winter, and the evergreen foliage would be suitable; but if gas be burned in the hall, or the plant is too long without sunshine, it will become shabby and drop its leaves. Christmas Roses, grown in a large pot or a small tub, will also stand for a short time in a hall in winter without injury, but the buds would soon cease to open, and if the plant should be kept in a hall more than three or four days it will be completely checked. Palms are the best plants for hall decoration, and a few other foliage plants, such as the India-rubber-plant (*Ficus elastica*), and the Parlour Palm (*Aspidistra lurida*), both of which are very long suffering in the matter of semi-darkness and cold draughts, both of which are ruinous to all flowering plants, and to delicate Ferns. The best Palms for this position are the following: *Corypba australis* (the Cabbege Palm), *Phoenix dactylifera* (the Date Palm), *Scaevola elegans* (the Bungalow Palm), *Chamserops excelsa* (the Fan Palm), and *Chamserops humilis* (dwarf Fan Palm). The lovely Australian Silky Oak (*Grevillea robusta*), too, will stand for some time in a hall, if well established. Any of these plants can be procured in summer (avoiding specimens which have been forced for spring work), and thoroughly though gradually hardened out-of-doors. They may then be placed in the hall for the winter, and will only need regular watering and to have their leaves kept free from dust by sponging them every week.—I. L. R.

3206.—Ornamenting a parapet.

—Large seed-pans, well-drained and filled with a good compost, would do on the top of these pillars, and it might be possible to place a handsome pot-plant in the centre of each seed-pan, so as to get height for the middle plant. *Mimulus* and *Violas*, both of which will grow well without much sunshine, might be planted round the seed-pans, choosing strong plants well set with buds, and planting them in April. *Lobelia* (blue) and *Yellow Moneywort* might also be tried if the pillars are far enough from the house to get direct vertical sunshine; they will bloom in good soil. *Mother of Millions* (*Saxifraga tomentosa*) would make a beautiful trailer, and do well without much sun; this and the *Lobelia* should not be put out-of-doors till all fear of frost is over.—E. C. About the end of May. *Nasturtium* (the Tom Thumb varieties), especially those with dark-bronzy foliage and carmine blossoms, would look well; they should not,

however, have rich soil, or they will get too much to leaf. For the central pot, which should be sunk half-way in the seed-pan, nothing will be better than well-grown old plants of *Zonal Pelargonium* ("Geranium") of a good variety, which have been brought on in a sunny place or window until they are covered with bud or bloom, at the end of May. They will go on blooming for some weeks, and should then be replaced by a second set of pot-plants (*Yellow Calceolarias* will do well in the shade), and again set in full sunshine to form a fresh set of buds, being top-dressed with good soil at the same time. In this way a constant succession of flowers may be had through the summer even in a north aspect, using a south window on the other side of the house to bring the plants on.—L. R.

Iris Bakeriana.—This is a charming bulbous Iris, which may be grown in the open, in a pot for the greenhouse, or in a window-box. It has not been long introduced from Asia Minor, and is a relative of the well-known *I. reticulata*. It is free in growth, and the flowers are Violet-scented and richly coloured. They differ in one important particular from those of *I. reticulata*, in the lip or fall; the three lower segments of the flower are blotched with white, on which appear violet spots, differing in size in individuals. In some cases they are practically absent, and again the flowers are enriched with yellow in some individuals, whilst the violet margin to the fall varies in width. When out-of-doors the flowers should be protected in some way from the weather, otherwise they will suffer considerably. A warm, moderately light soil is best. Early in the year its flowers are most welcome, and it is not difficult to get the bulbs to bloom then with an ordinary greenhouse.—V. C.

3318.—Dissolving bones.—Place the bones in an earthen vessel. Mix one part of sulphuric acid with two parts of bones in weight. The acid should be diluted with its own weight of water. Stir the mixture occasionally for two or three days. When the bones are thoroughly dissolved add about thirty times their weight of water and use. When the mixture is made on a large scale the bones may be laid in a heap on a hard floor, and the acid and water poured over them, and the product afterwards placed in a tub for further dilution or to make into liquid-manure.—E. H.

3341.—A plague of Sparrows.—Keep a tame Hawk in your garden, or scatter some Oats on a small patch of ground prepared with hair-springs or limed twigs. Whatever you do, do not use poison, or you will destroy your friends as well as your enemies. To protect any special plants, black cotton stretched backwards and forwards just above or at the side of them is very efficacious, as the birds catch their legs against the thread, and are alarmed thereby.—A. G. BUTLER.

3331.—Lavatera arborea variegata.—These are very easily raised from seed in hot, and if not overpotted they soon get their true colour; therefore it becomes a question, where there is a command of heat, if it is worth while keeping leggy plants. If it is decided to keep them, cut the plants down near the bottom, and use the tops as cuttings. The roots, if healthy, will also probably throw out shoots from the base. The tops will strike best if the ends are inserted in a bed of warm, moist Coco-nut-fibre, and potted up as soon as roots form.—E. H.

—No doubt these plants will bear cutting down moderately if you keep the roots rather dry for two or three weeks afterwards; but I do not think the tops will form roots if put in as cuttings. Certainly, I would not throw the plants away, as if you plant them out in a rather poor soil, and where they get plenty of sun, they will make fine specimens during the summer. This *Lavatera* is also useful for large bouquets if it is given a rather large pot, and gets plenty of sun and air. The variegation is very clear and bright in the open air, but it is better under glass.—J. C. C.

3315.—Culture of Nertera depressa.—*Nertera depressa* (Fruitful Duckweed) is not difficult to grow. It is generally worked on in heat in spring; the intermediate-house, 56 days at night, will suit it till the flowers show. Then move to an airy greenhouse to set the flowers, as the seeds ripen chiefly in the fruit. In May move to a cold frame, and when hardened off plant out. It is mostly used as a cover plant in carpet bedding.—E. H.

ORCHIDS.

CATTLEYA TRIANÆ.

I AM asked by "James Martin" to give him some idea about how he should treat this plant; also to state if I think this a distinct variety? He has just got a box of them sent home by a friend, and he would like to grow them. Well, respecting the specific distinction, I must give an adverse opinion, because I look upon Trianæ, Mossie, Mendeli, giga, speciosissima, and others, as only forms of *C. labiata*, which was named by Lindley upon its first introduction, and has only been recently reintroduced to general cultivation by Mr. Sander, of St. Albans. These various *Cattleyas*, although they do possess evident distinctions in their flowers and in their time of flowering, yet they do not appear to give any proofs otherwise than that they are varietal distinctions, which have been brought about by climatic influence

of the roots; but depend upon it, the root rotting is caused by too large a quantity of water being given to the plant, and this frequently not well drained away, and that is the reason why Orchids require so much attention in the matter of drainage, because the water should pass rapidly away. *Cattleyas*, however, differ considerably under cultivation to the majority of Orchids, as they do not require much water. The roots should have just enough to keep them in a moist condition, and if they get more they will show signs of going wrong, and a great deal of water may be used in damping down the house, on the stages, and between the pots; but the roots should never have any given them unless they are really dry, and at the same time the water supply should quickly be carried away. Do not put these plants on blocks of wood, for although they will grow and thrive on these with proper attention, I do not like the plan. Therefore, I say, do not start them on blocks of wood, and whenever they

condemned, and for years we have really seen nothing of them in English gardens. On the Continent, however, these plants have been better looked after, and there I have seen from time to time many kinds flowering. I was also greatly pleased to see an order for one in a nurseryman's hands the other day, and also that he had a plant which he could supply, and on the same day a letter came from "Judy" asking for information about *S. tigrinum*. It was quite right to transfer it from a pot to a basket, as the flowers of all these plants are produced in a downward direction. There is no chance for them to be seen if grown in pots; but I prefer wire baskets to wooden ones, because these are plants which do not like to be disturbed, and the wooden baskets come to grief sooner than wire ones, and require renewal; but for that matter, if the plants grow out and over the sides of the basket, be it of wire or wood, they will not require another, or there is no necessity to replace with another, saving for appearance sake, and I may say that I grew for some years quite a collection of these plants without any receptacle at all, but simply ran a stout wire down through the bulb and fastened it below. This plan, too, I am persuaded, is more conducive to the production of flowers than putting them into baskets and surrounding them with a mass of soil. These plants are of easy culture, requiring to be hung up in the shade, where the leaves keep of a good colour and the plants grow freely. During the period of growth the plants should have a very liberal supply of water, both to their roots and overhead from the syringe; but during the resting season a period of dryness may be given with good results. They grow best in the heat of the *Cattleya* house, but during their rest they may be kept cooler. The soil should be a mixture of peat and Sphagnum Moss, but do not overload them with soil. The following are a few of the kinds which I have grown, but as their leaves and bulbs are very similar, they are not mentioned separately. Suffice it to say, they are strongly ribbed, tough, and somewhat leathery in texture, and evergreen. *S. Bucophalmis*: Flowers large, tawny-yellow, spotted and blotched, deep-blood colour. They emit a powerful aromatic odour, which, however, is not overpowering if the house is properly ventilated. It blooms during late summer and autumn. *S. Devoniensis*: Flowers produced in pairs, creamy-yellow, profusely spotted with deep-purple or crimson, lip creamy-white, having a deep stain of purple, besides being spotted with the same colour. It is very delicately perfumed, and it blooms during the late summer. *S. ebernea*: This is a very fragrant kind, which blooms during the summer months. The flowers are ivory-white, having the lip sometimes stained with dull purple. It is amongst the most rare of the kinds. *S. grandiflora*: This is another rare kind. The flowers are gratefully perfumed, and pure ivory-white, sparingly spotted with light crimson. It blooms usually about the end of the summer months. *S. insignis*: A beautiful and pleasing flower and very sweet-scented, the ground colour is creamy-white, being abundantly spotted with purple, the lip, in addition, being shaded with deep-purple. It blooms during the autumn. *S. Martianum*: This plant mostly produces its large flowers in pairs, having its large straw-coloured sepals dotted with reddish-brown, and the pure-white petals, which are much smaller, having a large blotch of crimson at their base, the upper portion being spotted and dotted with the same colour; lip white, stained at the base with dull crimson, and the thick column dotted with purplish-crimson. It flowers during the autumn, but I cannot speak favourably of its odour. *S. oculata* produces a many-flowered raceme, which is agreeably scented. The ground colour is soft lemon-yellow, profusely dotted with rosy-lilac, the lip white, having on each side a large eye-like spot of brownish-purple. It blooms very freely during summer and autumn, the varieties being numerous. *S. ornaticolma*: This bears exceedingly handsome flowers, and they are freely produced, the ground colour of the sepals and petals being orange, blotched at the base with dark-crimson maroon, and spotted with red in the upper parts; lip creamy-white dotted with rose; it is very agreeably perfumed, blooming late in summer. *S. radiosa* has somewhat small flowers, sweetly scented, they are suffused with



Flower of *Cattleya Trianæ*.

and position. Nevertheless, they retain their peculiarities and their markings, some few plants edging off at times into another form; but for all purposes of a garden plant the present *Cattleya* may be considered a distinct kind, and exquisitely beautiful. To grow this Orchid in a proper manner, first, all the plant must be trimmed of all the dead rubbish that is about it, taking care that the eyes or young growths are not injured, for now these will begin to become prominent, and the whole plant should be washed in lukewarm soap and water, which is a precaution often overlooked by the trade growers; but I always like (in a private place to see plants look smart and clean, and in observing this rule one often gets rid of some colony of peats, which would otherwise become a great source of annoyance. The plants should be placed in somewhat small, well-drained pots, using for soil a mixture of good peat-fibre and chopped Sphagnum Moss; for this latter I am a strong advocate, notwithstanding having heard such a long list of the evils it produces. Amongst the worst of these comes the rotting

are started, remember not to overload them with soil. The plants at this time of the year may be kept in a temperature not exceeding 65 degs., falling 5 degs. or more during the night; but later on in the season it may range up to 85 degs. with sun-heat, and at all times let there be a free circulation of air. I do not see why the plants should be compelled to live half their time with the fresh air excluded; they certainly are not so treated in a state of nature, and above everything, I say, avoid overwatering. Now I think my young friend, "J. M.," should succeed with his *Cattleyas*. If there is any other point not touched upon I should like again to hear from him. MATT. BRAMBLE.

STANHOPEAS.

I AM very glad to find these plants are again being taken into favour. When I was a boy Stanhopeas were largely grown, and their highly-scented flowers became quite a nuisance in the house; then came the fact that the flowers did not last long, and they were

lemon-yellow more or less spotted with crimson, the lip and basal part of the flowers brownish-orange; it blooms in the summer months. *S. tigrina* is a grand species, bearing its very large flowers in pairs mostly, but sometimes three or four are produced on the same raceme; they are very strongly scented, and are of a rich buff yellow, heavily suffused with deep portwine colour; it blooms in the late summer and autumn months, and is the largest kind that I know. *S. Wardi*: This plant must be reckoned amongst the most handsome, and it is very free in blooming. I have flowered plants with five and seven flowers on a raceme, the colour being rich golden-yellow, more or less dotted with purplish-crimson, and at the base of the lip is a deep velvety bluish. These and some others I have grown, and I hope "Judy" will grow them well also. If she keeps her house properly ventilated they will be a great source of enjoyment to her.

MATT. BRAMBLE.

3300. — *Funkia subcordata grandiflora*.—This is the proper name of the variety to which "Black Bess" refers. There is no variety of subcordata under that name, but this kind is a fine species, and a native of Japan. It is so pure and sweet in blossom, and so lovely withal that a well-grown pot of it is hardly inferior to a pot of *Eucharis amazonia*, with this advantage, that it is more generally within the reach of all who wish to have it. I have no doubt that "Black Bess" has the plant true to the above name, and let me say on the special difficulty attaches to its culture either out-of-doors or in pots. If so many gardeners have failed with it in the case mentioned it must be because they did not do all that might have been done. In a previous situation I had a great quantity of this plant. At first all was outside, there being several groups upon a border of Bamboos growing in partial shade to sandy loam. The peculiarity of this species is that it flowers in late summer and usually too late to open in perfection. I had the satisfaction of seeing an abundance of spikes appear in September, but not one flower in twenty opened to perfection before autumn rains and early frosts destroyed them. I was advised to plant some plants if possible on a mound of sandy loam in an open sunny spot to encourage early flowering, and this was done with success. If "Black Bess" plants has small leaves it is evidently under some unfavourable influence. Soil may be too heavy, and wet or dry, or impoverished with roots of other things running through the ground. I also potted some up. They were given good sandy loam, and grew to so ordinary greenhouse. They produce magnificent leaves and fine flowers, which opened to perfection and lasted well. The flowers have a delicious fragrance. I think if "Black Bess" trees, success will be achieved, and though it is a hardy plant it merits all the trouble that might be bestowed upon it, and repay the cultivator in proportion to the care he takes of it.—A. H.

3327. — *Pig-mannre in the garden*.—This manure is excellent for all kinds of vegetable crops, and if used at the time of planting should be in a decayed state. The best way to use it is to dig it in when the weather is fine in the autumn wherever ground is ready for it. All the Cabbage tribe revel in it.—J. D. E.

— This is very good manure on light land. If used at the time of planting it should be thoroughly blended with the soil, and not come in direct contact with the roots of anything.—E. H.

Catalogue received.—*Fancy Fancies, &c.* Mr. A. Bailey, Jun., Silvanor-lane, Sunderland.—*Alpine Plants, &c.* Messrs. James Backhouse & Son, York.—*"Seed Potatoes."* Mr. John Watkins, Pomona Farm, Widdicombe, near Hereford.—*Clovers, Grasses, &c.* Messrs. W. Chilton & Son, Market-street, Manchester.—*Bulbs, &c.* Messrs. E. H. Krelage & Sons, Haarlem, Holland.

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RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the EDITOR OF GARDENING, 37, Southampton-street, Covent-garden, London. Letters on business should be sent to the PUBLISHER. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experiences is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appeared.

3360.—*Aranaria imbricata*.—What is the best method of raising this from seed?—I. R. W.

3370.—*Onions for show*.—Will someone kindly give me a few hints on the culture of Onions for show?—J. W.

3371.—*Cinders and ashes*.—Are these injurious to coniferous trees, and Evergreens if dug in near them?—L. H. C.

3372.—*Roses on Brier cuttings*.—Will someone kindly tell me how to grow Roses on Brier cuttings?—SYLVANUS.

3373.—*Sweet and Savoury Herbs*.—Will someone give me the list of—1, the Sweet Herbs generally in use; 2, the Savoury Herbs?—M. H.

3374.—*Parsley in winter*.—Will anyone kindly say what is the best method to adopt to secure a constant supply of Parsley during winter?—I. B.

3375.—*Potato disease*.—I have been told that sulphate of copper will stop disease in Potatoes. Will someone kindly tell me how to use it?—CARRA.

3376.—*Manure for Roses, &c.*—Where obtain manure cannot be got, what kind is the best to use for Rose-trees and flowers generally?—MRS. BROWN.

3377.—*Treatment of Carnations*.—How can I get Carnations to have a strong, sturdy stem? Mine always being their heads and look straggly.—REVVERCO.

3378.—*Chrysanthemum "Cyclone"*.—Will "E. M." be kind enough to tell me what kind of Chrysanthemum is Cyclone, as I cannot see its name in any catalogue?—G. A.

3379.—*Violets and Lilies of the Valley*.—When is the time to plant these, and what are the best kinds for planting in the open air without protection in the winter?—MRS. BROWN.

3380.—*Ants*.—Ants are troublesome in my stove-house. Is there anything I can do over the pots or the mould which would stop their getting on to the plants, and not hurt the latter?—ENQUIRER.

3381.—*Creeper for a chalk bank*.—Will someone kindly give me information as to what creeper would answer best to cover a bare chalk bank? Would *Nasturtium* be likely to grow?—M. A.

3382.—*Treatment of Anemone Mollis*.—I shall feel obliged for directions how to treat *Anemone Mollis* after flowering—viz., should the shoots be cut back to 3 inches or 4 inches and then be planted out?—BAKER.

3383.—*Sulphuric acid and weeds*.—Some time ago I saw it stated that a solution of sulphuric acid in water would destroy weeds on a path. Will someone kindly give me the proportions to use?—PRINCESS.

3384.—*Tarring wood*.—I want to tar some wood borders in my garden. What can I mix with it so that it will dry in properly, and not to come off on one's hands or clothes on being touched afterwards?—ENQUIRER.

3385.—*Treatment of Spiraea japonica*.—Will anyone tell me how to treat *Spiraea japonica* after flowering? Should they have any water, or be allowed to die down at once, or should they be put out-of-doors?—BEGINNER.

3386.—*Vegetables for show*.—Will someone kindly tell me what would be the best vegetables to show in a collection, limited to eight varieties, the last week in July? I can grow well Tomatoes and Cucumbers.—MILL VIEW.

3387.—*Violets for outdoor culture*.—What are the best Violets for outdoor culture, and when should they be planted? Can I increase my Violets by subdividing my plants, or do they increase more by being left undisturbed?—CAROLINE A. OATES.

3388.—*Rose diseases*.—I should be obliged if someone will kindly tell me the cause of, and, if possible, the cure for, the brown patch which surrounds the stems of Roses, killing the bark and, of course, that part of the shoot above it?—A. SPENCER.

3389.—*Budding or grafting Ash trees*.—I have two Ash-trees I want to bud or graft with weeping cortex which would be the best way? They are each about 5 feet high, and have four branches to each top about the size of a man's finger.—W. G., Essex.

3390.—*Choice Primulas for show*.—My employer tells me that a friend of his who exhibits Chinese Primulas successfully does not show them the first season of flowering, but selects the best plants and shows them next year. He wants me to save some plants now in bloom and prepare them for exhibition by November. Will anyone kindly oblige me with particulars as to how they should be treated? I have always raised fresh plants every year, and, after flowering, thrown them away.—H. J. RST.

3391.—*Liquid-manure*.—We small suburban gardeners have not room for a tank to keep this in. Would ordinary bedroom slops, properly diluted, do as an efficient substitute? I think many hundreds of readers would be glad to know also.—LENNARD.

3392.—*Pheledium anreum*.—My plants looking very bad, and I found there were wireworms in the pot. I watered it with lime, and then repotted it with peat, good mould, and silver-sand. Ought I to cut it down to allow it to shoot again?—MISS M. CURMING.

3393.—*Cyperus alternifolius variegatus*.—I have lost several plants of this, notwithstanding I kept them in a stove temperature and well watered and with good drainage. The foliage turns brown and dies away. Can anyone account for it?—ENQUIRER.

3394.—*Culture of Pelargonium*.—Would anyone kindly inform me as to culture of Pelargoniums? I have got some fine plants of Regalis, and they are not doing well. Full directions needed as to culture and training for show purposes?—JOHN COWIE.

3395.—*Azaleas after flowering*.—Will anyone give me some information about Azaleas after flowering? Do they require any pruning, and should they be put out-of-doors in summer in North Yorkshire, or kept in the coolest part of the greenhouse?—BRANKNER.

3396.—*Rose in a greenhouse*.—I have a Rose in my greenhouse, and am told that I must let the young wood grow close against the glass. Is this right? If so, how am I to get it below the wires next winter? I am also afraid the leaves will get scalded?—ANXIOUS.

3397.—*Orchids and Cacti*.—Will someone kindly give me the names of a few strong Orchids (not expensive ones) suitable for growing to a small glass-house devoted to Cacti, where, of course, the temperature is very high in the summer-time, and a minimum of 50 degs. in the winter?—CACTUS.

3398.—*Grapes in a lean-to house*.—Can I get a good crop of the best in a lean-to house, by 12 feet, facing due east, and getting the morning sunshine unintercepted? Angle of roof, 45 degs. In heating will ordinary water pipes and cement joints do, or are expansion joints indispensable?—JESSEMAN.

3399.—*Work in orchard-house, &c.*—I should be obliged if anyone will be good enough to say what sized orchard-houses and hot-houses a man might be expected to work single handed, when required to do nothing else, save occasionally to advise as to other parts of garden?—SUBSCRIBER X.

3400.—*Black Raspberries*.—I have several American Black Raspberries. They grow differently from the English, and do not appear to seed up shoots from the roots, and the roots do not spread. How can I propagate them? Would slips or cuttings strike, and when should they be put to?—BLACKBERRY.

3401.—*Sowing Grass seed*.—I intend sowing Grass seed to renovate my tennis-lawn next week, and should wish to know if, after the seed is sown, I may still continue to roll the lawn with a light roller, as I do not know whether the roller is injurious or beneficial to the tender blades of Grass?—LAWN MOWER.

3402.—*Beds on a small lawn*.—I have three flower-beds on a small lawn, which I want to look gay this summer, but they are shaded. I should like to know which will be best to plant them with, as they are just in front of my dining and drawing-rooms. Any information will greatly oblige.—MID HURON.

3403.—*Rose "Her Majesty"*.—I have had a Rose "Her Majesty" for two or three years, which has only once had one bloom on it, and is frequently covered with mildew. Is there anything I can do to make it flower and be more healthy? I syringe it frequently with paraffin oil and soap, but with no effect.—REVVERCO.

3404.—*Asparagus plumosus*.—Will anyone kindly tell me the best, quickest, and cheapest way to work up a stock of this for cutting purposes, by seed or by cuttings, and the best method by carrying out the same? I have the *Asparagus plumosus nanus* any advantage over the larger sort for cutting purposes?—A. BUSCAIEN.

3405.—*Salting an Asparagus-bed*.—I should be much obliged if someone will let me know if it would do to sprinkle salt over an Asparagus-bed that has only just been planted, so soon as the heads begin to show themselves through the surface of the soil, as I believe Asparagus likes salt, and it is destructive to insects and weeds?—W. K. B.

3406.—*Gloxinia seedlings*.—I have some late *Gloxinia* seedlings of last year, which have been growing all the winter, and are now about 3 inches high, in small pots. How should they be treated? What soil, position, and temperature do they require? Do they want much water, and what sized pots should they have for flowering?—JOKRAMUS.

3407.—*American Blackberries*.—Will anyone who has been successful with the American Blackberries kindly favour me with cultural directions? What pruning do they require in order to fruit well? I have grown one up the front of a house, which it has covered. The aspect is south. Should I leave it as it is or prune it? I do not get much fruit.—BLACKBERRIES.

3408.—*Plants for a flower-box*.—I have a flower-box over the porch of my front door. I have arranged for a Clematis on each side of the trellis, and think some pretty flowering trailing plant would be suitable for the box. Will someone kindly recommend me something to answer my purpose, as I want to have something nicer than *Nasturtium* or *Caery Creepers*?—J. GOURN.

3409.—*Names of Chrysanthemums*.—I should feel obliged to "E. M." for the names of ten dozen Chrysanthemums, divided as follows: One dozen of the largest blooming varieties, named separately; one dozen Japanese reflexed; and one dozen incurved. These latter two dozen to be such as will produce a fair number of flowers of good colour when grown on the natural stem. As to colour, I should like several good whites and yellows, but I do not care for magenta or shades of magenta. I did from experience there are some few varieties (I forget the names) which, although they receive the same treatment as the rest of the stock, produce nothing but large leaves and stems, and do not flower at all. I should like these excluded, if possible.—MARCUS.

3410.—Christmas Roses—Will anyone tell me if there be any means of preventing some varieties of Christmas Roses dying within a few hours of being poked and put in water? The tall growing greeny-white and rose-colored ones will not last for ten days. It is nearly useless growing some of the varieties for the above reason. Could I put anything in the water?—V. B.

3411.—Arms not flowering—Will someone bid kind enough to advise me what to do to make my Arums flower? I keep them in pots in a small greenhouse. Last year I stood them out during the summer, and out them down; they are green and flourishing now, but do not show any flower-buds. The year before I planted them out in summer and potted them again in autumn, but still they did not blossom. One did flower two years ago, but not since. They are of different ages.—C. H.

3412.—Winter Aconites not flowering—The year before last I planted a considerable number of Winter Aconites in my borders and also in the turf; the next January they flowered well. This year, however, January passed without a sight of them, and when the Snowdrops had been in flower about a week, the leaves of the Aconites showed themselves, but without even a bud. What is the reason of this, and what should I do to have them flowering next year? All the leaves are large and healthy. Locality: London, S. Kensington.—FLORA DE LYA.

3413.—Marchal Niel Rose in a greenhouse.—I have a Marchal Niel Rose growing in a box in a greenhouse, immediately over the heating pipes. It flowered well last year, and had every appearance of doing so this year, as it is literally covered with buds; but within the last week a different complexion has come over it. The buds have ceerily all drooped, and the leaves, instead of having the healthy appearance they had, have now a very withered look, and the younger growths are all shrivelled. I have not seen them at night, but there was no frost to talk of. One of the buds that have expanded are very small, and give off an unpleasant smell, and some of the buds are dropping. What shall I do?—O. P.

3414.—A Gloire de Dijon Rose.—Would anyone please to inform me to what I should do with a Gloire de Dijon Rose I have growing in a greenhouse. The roots are planted outside at the end of the greenhouse in a bed made on top of the boiler-flue, and covered with soil. Last year I had some fresh manure placed on top of the bed, thinking to benefit it, but instead, with the frost raised, it told seriously on the health of the Rose. The leaves turned yellow and fell off. After that I cut away all the dead wood, but it has scarcely made any growth, although buds have appeared this year, but when they expand are very small, with scarcely any smell, and covered with green-fly, in spite of frequent fumigations. In the same house are also two Black Hamburg Vines, and a mixed collection of plants.—Rix.

3415.—Double Fuchsias, &c.—Will J. C. C. tell me the reason of my Double Fuchsia of last year coming single this? Mine have done so for years, old plants as well as cuttings. Last year I took a quantity of cuttings, all from double flowers, but find most of the blooms at present are single, and most of the old plants (2 years old) that were double last year, and have flowered this, have come single. I have had plants with some single and some double blossoms on the same stem. I have them repotted every year, and in the best mould. Also can J. C. C. tell me the cause of a little white maggot, about as thick as cotton, and a quarter of an inch long, coming in the mould in pots? They always attack my Herbaceous Calceolarias, and when once they get the plant never grows, but gradually dies. I shook a plant out of the pot the other day that was looking sickly, and found a quantity in the mould and round the roots. They destroyed nearly all my early Cauliflowers from seed sown at Christmas in the greenhouse; they eat all round the stem under the mould just after the young plant comes through the ground, and so makes them drop and die. They also destroyed nearly all my Cactus Dahlia seedlings in the same way. I have been troubled with them for years. Soot has no effect on them.—OLD SUBSCRIBER.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

3416.—Orchids from Brazil (July).—When you put them in a moist house, moderately heated, and then let me know what you have got, and I will answer with all possible dispatch.—M. B.

3417.—Zosterostyles arachnites (J. Hemsale).—The specimen you send is undoubtedly of this plant. I received it from Cayton and found it some thirty years ago, but I have never seen it since. It appears to also come from Java and some other islands in the Indian Ocean. One species only seems to be recognised. The plant should be potted in a mixture of peat and loam made rather sandy, and it should be kept nearly dry when it is at rest and dormant.—M. B.

3418.—Ottolya Warneri (M. Maxwell).—There really is no reason why this plant should be called the summer-flowering labiate any more than C. Mandall and some others, for all are recognised as belong varieties of labiate. The one that really did have the name of the summer-flowering labiate was what is now known by the better name of C. Gekallusa; but if you object prefer the longer title to the name of O. Warneri, well and good; let him use it. But, since you ask me, I do not think he can find any authority for this title.—M. B.

3419.—Oleandra indivisa.—J. Heron sends me a specimen of this plant, which is an abundant plant in New Zealand, where it clothes and festoons large trees on the outskirts of the forests. It is an admirable plant for a cool conservatory, and it always blooms abundantly at this season of the year. I used to fasten the shrub with its flowers at Easter for many years, and for this purpose they are excellent. I recently saw the plant flowering freely in quite a small conservatory, but with the complaint of free blooming qualities; but when it is allowed to stand in a room on the roof of a conservatory, it is a sight never to be forgotten. It should be grown by a person who has a convenient place.—J. J.

3420.—Three good flowering Acoacias.—J. Franklin asks for the names of the three most beautiful of this family? I do not say these are the best, but they are very beautiful kinds, and well deserving a place in any garden. A. Drummondii. It has pinnate leaves of a rich green hue, and long cylindrical spikes of bloom of a citron-yellow in colour; it is a Swan River species, and blooms all through the months of March, April, and May. A. pubescens is another very handsome species, with bright-green leaves, and bright-yellow flowers, which are massed at the end of the branches. It flowers through April and May. A. Rocioana grows and flowers freely as a small pot-plant, but is seen in its greatest beauty when trained up the rafters of a greenhouse. It has narrow, dark-green leaves, and forms masses of soft, yellow flowers. It is a Tasmanian plant.—J. J.

3421.—Odontoglossum Cervantesi.—F. H. M sends me two specimens of this species, which have appeared, he says, upon the same plant, but the I much question. I am very pleased to find him so enthusiastic in his love for Orchids, but I am only sorry to find him spending his energies and his time on such wretched forms as these. Were you can have got such wretched forms from I cannot conceive. No; you should grow the species in its normal form and its variety decorum, not such extreme alpine varieties. Get a plant or two of O. Rosea majus and some others, for you really deserve to have a few flowers worth looking at—some that will please, and give you some return for your situation and care. These flowers are certainly of no value to me. I know your town well, and I am astonished that in such a place you can have been contented.—M. B.

Names of Plants and Fruits.

* Any communications respecting plants or fruits sent in must be accompanied by the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C.

Naming fruit.—Reader who desire our help in naming fruit must bear in mind that several specimens of different stages of color and size of the same kind greatly assist in its determination. We can only undertake to name four varieties at a time, and these only when the above directions are observed. Unpaid parcels will be refused. Any communication respecting plants or fruits should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C.

Names of plants.—H. S.—Acoacia armata.—P. J. G.—Omphalodes verba.—Reader.—Omphalodes verba.—James Knight.—Oleandra indivisa apparently.—Bodger.—Acoacia Drummondii.—General Hawker.—We regret being unable to name the Desmodium sent, but the flowers were too much shrivelled.—Ernest Bacon.—Specimens dried up and insufficient.—East Grinstead.—It is quite impossible to name Strawberries from the leaves only.—G. R.—Cannot name the Mosses from such poor specimens.—Mrs. B. Fox.—No. 8 is Diomea arcoloida. We should like to hear from you again as to the Orchids and other plants. Cocoon name from specimens sent.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

Anxious.—Apply to Mr. J. Groom, Seafield Nurseries, Gosport, Hants.—Mrs. Brown.—Apply to Messrs. Birkenhead, Sale, near Manchester.

BEES.

SEASONABLE NOTES.

In examining hives in spring to ascertain the condition of brood, it should be remembered that on the death of a queen, and when the Bees have not the requisite means of rearing another, fertile workers will deposit eggs in the cells, but lay their eggs very irregularly, sometimes two or three in one cell and then mixing several cells, whereas the queen lays her eggs in patches, rarely missing a cell. Should, therefore, brood-cells be found dotted about the combs instead of being regularly and compactly placed, queenlessness may be suspected. Only drones are produced from eggs of fertile workers. Should it be observed that but a small quantity of pollen is being carried into a hive, while other colonies are very industrious, it may reasonably be suspected that the hive is queenless, and no time should be lost in examining the hive. It being too early in the season to introduce a fertile queen, the only thing to be done with a queenless colony is to break it up, dividing it amongst strong colonies having fertile queens. It is found that queenless colonies retain their drones in the hive through the winter.

GENERAL MANAGEMENT.—Care should be taken that stocks of Bees do not run short of provisions at this time. Large quantities of food are now being used in the rearing of brood. Where the Bees of some hives are seen flying abroad while the rest of the hives in the apiary are in a state of repose, the former will in all probability be found to be very low in the store department—almost at starvation point, being lured out by hunger in the vain search for food. Any bars of honeycomb preserved from last

season will now be found very valuable to supply to needy stocks. They should be slightly warmed before being introduced into the hive, or the temperature of the hive will be much lowered. All causes of dampness must be removed as soon as discovered, and damp quilts replaced by dry ones. March is the best month in the year for purchasing stocks of Bees. Colonies having stood through the winter, there is, of course, less risk of losing them than there would have been had they been purchased in the autumn. If a stock is in a healthy and prosperous condition, numbers of Bees will be observed on a fine day carrying into the hive large quantities of pollen, which is at this time collected to be used in the rearing of the young Bees. In the early spring the Crocus and the various kinds of Willow yield large quantities of pollen, the colour of which varies according to the kind of flower from which it is gathered. The Bee, foraging in the flowers, becomes powdered with the pollen, which it brushes from its body with its front legs, and collects and kneads into little pellets, and transfers them to the hollow in the hind legs provided for its reception and transportation. Before purchasing a stock of Bees the inside of the hive should be thoroughly examined; in the case of a straw skep this can only be done by inverting it, after having blown some smoke into the entrance to clear the floor-board of Bees and drive them up amongst the combs. The combs can then be gently pressed apart and the condition of each carefully noted. They should be built straight and be free from damp or mould, and contain six or seven seams of Bees forming the cluster. The sealed honey will be found in the top of the combs and should be 2 inches or 3 inches deep, while sealed brood-cells should be found in patches on the central combs. Stocks of Bees should be removed in the evening or early morning if in straw skeps; the skeps may be carried in an inverted position with a piece of coarse-cloth tied over, and for better security to combs a pointed stick may be passed through the sides of the skep so as to pierce each comb. If this is done a day or two before removal the Bees will secure the combs to the stick and make all safe for moving.

DYSENTERY.—This disease is caused through dampness inside the hive, and also by the pertaking of unsuitable food by the Bees, such as unripe or fermented honey. An undue consumption of food and excitement in the hive, brought about by the disturbance of the Bees through unnecessary manipulation during cold weather, will also tend to encourage this complaint. Hives found to be foul from dysenteric discharges should have the combs and Bees transferred to fresh clean ones, all soiled frames being scraped and washed over with a weak solution of carbolic. The Bees should be supplied with a cake of candy, a comb or two of sealed stores, or a very good food made by mixing liquid honey and finely powdered loaf sugar together to the consistency of putty. This can be laid upon the frames in the form of a cake, and is readily taken by the Bees. It can be introduced at the feed-hole in the case of straw skeps. The hive should also be protected well from cold and damp, and the Bees disturbed as little as possible. S. S. G., Parkton.

POULTRY & RABBITS.

QUERIES.

3422.—Chloekens and an Incubator.—I should be pleased if anyone would give me some particulars of breeding chloekens in an incubator, the cost of it, and how heated? I propose having a large room, well heated, to place the chickens in when hatched, but suppose the incubator would have to be placed in another compartment? Any other particulars would be most acceptable.—LENO.

3423.—Chickens dying.—Will someone kindly tell me if the seeds of the Laburnum-tree is poisonous for chickens, as I have had several mope and die in a short time after being put near to the Laburnum-tree?—S. R. S.

3424.—Blood in the yolk of eggs.—Will "Doubting" or some other correspondent kindly tell me why the yolk of my Black Moorcock hens' eggs sometimes contain blood? They are pullets of last spring's hatching, seem very healthy, and have laid well since November.—MRS. PAYNE.

REPLY.

3270.—A poultry house.—The best description of poultry-house is one which fits into any corner of the premises which happens to be at liberty. In other words, no hard-and-fast

rule can be laid down, but sometimes one kind or at other times another will prove the most serviceable. A fowl-house is intended principally for housing the stock at night, and should contain from 8 inches to a foot of perch-room for each adult bird which roosts in it. The perches should be a yard apart at least, and be all of the same height. This will give plenty of room, and there will be no fighting for the best places. "Beginner" can work out the dimensions for himself from the above figures. He must bear in mind that a small house is unhealthy for the fowls and inconvenient for those who have to attend to them; it is, therefore, much the best plan to err on the right side. Attached to the roosting-place should be a lean-to shelter under which the birds can rest during the day. It is best on the south side, and as to secure all the possible sunshine at mid-winter. In this shelter the resting-places may be arranged; fowls dislike to enter a roosting-place for this purpose. So much for the house, &c., for the adult stock. Chickens are best provided with a residence for themselves. A house 6 feet by 4 feet, if well ventilated at the gables, will accommodate twenty-five birds fit for killing. A wooden floor can be put in or not, according to the taste of the owner. A run for twenty-six adult fowls may measure some 26 yards by 12 yards, and as much larger as one likes. It is scarcely fair to pass an opinion on the merits of advertised poultry-houses; but "Beginner" may rest assured that movable wooden houses will answer very well in this country if made stout enough at first and covered with felt in exposed situations. Sometimes they are really too warm when thus protected. I have never found them odd or difficult to keep wholesome and clean; of course the crevices are more numerous than in a brick or stone built house which has been plastered, but when whitewashing is resorted to once or twice a year, and disinfectants are used now and then, the place is really cleaner than most permanent structures. I am in favour of these movable houses, as they enable one to use fresh ground at pleasure and keep the fowls from the garden and the back door.—DOULTON.

BISMARCK.—Grand new Apple, immense pyriform, high-coloured fruit. Bristles freely on very young trees. 2s. each; 18s. doz. Bosty of Bath: Delicious and very pretty early fruit, 1s. 3d. each; 12s. doz.—WILL TAYLER, Nurseries, Bournemouth.

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DEVONSHIRE FERNS.—40 rare roots, 16d.; 10s. 100 sorts: Maiden-hair, Polystichum, Ceterach Adiantum, &c.—H. ANDREWS, Shute, Axminster, Devon.

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URBANA-CHAMPAIGN

GARDENING ILLUSTRATED.

No. 734.—Vol. XV.

Founded by W. Robinson, Author of "The English Flower Garden."

APRIL 1, 1893.

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CHRYSANTHEMUMS.

CHRYSANTHEMUMS ON WALLS.

ONE of the methods a person can adopt who has no glass accommodation, and who yet wishes to have a show of Chrysanthemums, is that of growing the plants at the foot of a wall. One with a south aspect is decidedly the best; in the absence of this a fair aspect of oncuses may be expected from east and west walls. If some means could be devised whereby a temporary covering could be given to the plants in case of frost, success is then assured. A broad coping-board fitted to the wall at the time the petals are expanding will be extremely useful in preventing the blooms becoming soaked with wet by continual rains or heavy fogs in the month of November. It is by frost following quickly after rain that the bulk of the flowers are spoiled. The chief point to observe is to plant varieties that are more suited to flowering out-of-doors. For instance, the reflexed sorts are much the best, the water not lodging readily amongst the florets owing to their imbricated form. The reflexed Japanese varieties and the Pompons are good, the latter especially flowering freely, and last in a good condition a long time. Now is a suitable time for putting out the plants. The old roots or stools that flowered in pots last year are preferable to plants raised from cuttings this season, owing to the extra number of shoots produced at the base, and are better furnished with branches to begin with. Remove part of the old soil from the roots, and plant close to the wall at a distance of 4 feet apart. If the soil is fairly good add some manure, but if rich give none, as a gross growth is more likely to be injured by frost, and is not so productive of flower-buds as that which is moderately vigorous, yet matured. Tread the soil firmly about the roots; a loose rootlet medium is not conducive to a desirable growth. At the distance named, plant the large flowered varieties; between each of these plant one Pompon or single flowered variety, which will cover the bottom part of the wall. If the plants were of good size the previous year they will start into growth with many shoots. Select six of the strongest on each plant, removing all the others, except the Pompon, which may have eight growths. When the branches are long enough spread them out thinly and fasten to the wall either with nails and shreds or with a wire run along in front of the shoots and fastened occasionally to the wall, constantly securing them as growth proceeds. Do not top the branches. When the first break takes place select two of the strongest shoots on each original stem, or more if space will allow, some kinds requiring less space than others owing to the length of their foliage. The shoots may be trained as close together as possible, consistent with allowing the foliage just sufficient space without overlapping. If the wall is less than 6 feet high, and tall-growing sorts like the Maid of Guernsey or Maiden's Blush, for instance, are planted, the shoots must be

trained in a slanting direction, or the flowers will be above the top of the wall. If the Pompons have to cross the stems of the large-flowered section near the base, a portion of the leaves of the latter should be removed to prevent overcrowding and give light to the small-flowered section. As soon as the roots have taken possession of the new soil apply liquid-manure in a weak state, and clear water liberally during dry weather. After a hot day thoroughly syringe the plants, this greatly assisting in keeping the foliage clean and in a healthy condition. Constant attention in training the shoots produces a much better effect than allowing them to hang from the wall, rendering the branches crooked and unsightly.

E. M.

3378.—**Chrysanthemum "Oyolone."**—This family belongs to the Japanese section; in colour cream.—E. M.

— This is a Japanese variety, and described as so enormous flower. The central petals creamy-white, arranged in whorls, and composing a boldly shaped bloom. It has been shown as much as 11 inches across.—C. F.

3409.—**Names of Chrysanthemums.**—"Medicus" will find the following varieties suitable, although I hardly know what is meant by the "natural system." What I suspect is required are varieties that will produce a goodly number of fairly large blooms without restricting their number to the orthodox three flowers to a plant, but still managing them somewhat after that style. Plants grown under the big-bloom method will very easily give, say ten fairly sized blooms to a plant, by selecting the terminal buds and allowing five shoots to remain instead of three when the plants make their first natural break in April or May, as the case may be. When the next break occurs in August by the formation of another flower-bud each shoot must be allowed to retain two growths instead of removing all and retaining the flower-bud, as in the case of extra large blooms being required, and but three to each plant. The first twelve are selected from the largest and best sorts: Avalanche (white), Stanstead White (white), Sunflower (golden-yellow), Edwin Molyneux (crimson and gold), Mrs. Falconer Jameson (cheat-out-bronze, tinted and striped yellow), Miss Marie Hoate (creamy-white), Puritan (bluish-white), W. W. Colea (bright-red), W. H. Lincoln (pale-yellow), Mrs. E. D. Adams (white, faintly blushed), Florence Davis (greenish-white), Col. W. B. Smith (old gold, tinged with terra-cotta), Japanese reflexed: Maiden's Blush (bluish-white), M. William Hoimes (cheat-out-red, inclined to dark crimson), Val d'Andorre (orange-red), Edwin Beckett (golden-yellow), Mrs. E. Beckett (bluish-white), W. K. Woodcock (deep-crimson), Bouquet de la Dame (white), Eyesford White (white), Mrs. J. S. Fogg (chrome-yellow), Miss Lacroix (white), Sarah Owen (golden-bronze), Gaiete de Rocher (bright orange-amber, flushed crimson). In-curved: Empress of India (white), Golden Empress (golden-yellow), Lord Alcester (pale yellow), Golden Queen of England (pale yellow, veined bronze), Miss Gifford (pale yellow), Lady Dorothy (pale cinnamon buff), Princess Teck (bluish-white),

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Mrs. Heale (creamy-white), Mrs. Norman Davis (rich golden-yellow), Queen of England (rosy-blush), Jeanee d'Aro (bluish-white), Mrs. Robinson King (golden-yellow).—E. M.

3183.—**Sulphuric acid and weeds.**—Sulphuric acid is a powerful poison, and requires using with great care for the destruction of weeds. If the acid is diluted with thirty parts of water and applied to weeds on gravel-walks when the surface is fairly dry it will kill them. You will, however, find that sulphuric acid is more costly for this purpose than the ordinary liquid weed-killers that are often advertised in GARDENING.—J. C. C.

— Half a pint of the acid to a gallon of water will destroy all weeds. The acid and water is applied through a rose pot, enough being given to moisten the surface of the gravel. It is very destructive to water-pots and metal pots of all kinds. Shoes and clothing also suffer if the acid is not carefully used.—E. H.

3313.—**Culture of Nertera depressa.**—This charming little berry-bearing plant is of easy culture. It requires plenty of moisture at the roots, and a considerable amount of atmospheric humidity during the growing season, with protection from hot sun. A compost of loam and peat in equal parts suits it very well, and the pots must be well drained. From the seed of June till October the best place for it is the north side of a wall or hedge. This cool treatment gives colour to both foliage and berries.—J. C., *Byfleet*.

3330.—**Anemones from seed.**—Sow in oces in pans or boxes in light sandy soil. Place in a cool frame or cool greenhouse till the young plants appear. Be careful never to allow the soil to get quite dry. When the seedlings are large enough to handle, plant them out carefully, 4 inches apart, in ground that has been well stirred and enriched with rotten dung. Keep them watered in dry weather, and many of them will bloom in autumn, and all will be strong enough to make a show the following spring.—J. C. B.

3384.—**Tarring wood.**—I do not think you require anything to mix with the tar to induce it to dry. In fine dry weather it will dry sufficiently in a few days to handle; a little benzoline used with the tar will make it work better when using it. The benzoline will not mix with the tar—it will float on the top—and sufficient care be taken up with the brush each time to make the tar work as easily as thin paint, and does away entirely with the tiresome and expensive plan of heating the tar.—J. C. C.

— Tar dries so well and does not come off upon the hands when mixed with pitch, except in hot sunshine; but the best way to treat a wood border is to sprinkle the tar thickly with coarse white sand as soon as it is applied. Throw the sand against it violently in small handfuls until the wood is thickly coated with it. The sand hardens upon it, forming a hard permanent surface, which lasts well and prevents the tar coming off.—J. D. E.

— When the tar is applied hot in dry weather it soon dries. The best way to treat a temporary displace with bricks, and boil the tar in an old iron pot. If the sand is coarse and a little more of turpentine of tar. This will facilitate drying.—E. H.

GARDEN WORK.

Conservatory.

This shade will be beneficial now for plants in bloom. The sun is sometimes very hot in cloudy days in March and April, and to keep flowers in perfection as long as possible shade is necessary during the hottest part of the day. Spireas in bloom and coming on will require water several times a day, or, better still, stand them in saucers or pans. Shift on Chrysothamnus and place in cold pit or house. All they require is protection from frost, and this can generally be obtained by coverings at night. Give all the air possible when mild and calm. The best potting material is old turf with the fibre still in it, but the Green roots dead. This is broken up with the beds into small pieces and mixed with a third of old manure with a little sand and a small portion of calcined oyster-shells; broken ones will do well for this shift. Later on the compost may be a little richer, either by the addition of some artificial manure or a little bone meal. A light sprinkling of soot is also useful. Pot firmly and leave plenty of room for water. As regards stopping the shoots, where specimen blooms are required, stopping is not recommended, but for conservatory decoration these long unstoppped plants are not so satisfactory. A fine bloom that requires to be examined from the top of a pair of tall steps is not generally satisfactory. Plants for furnishing out flowers or for the conservatory may be stopped in due time, but stopping and pinching the shoots should ever be done at the same time, the why and whereof of which scarcely needs any explanation, as the principle runs through everything and may be freely stated—never give more than one check at a time. Cuttings of Chrysothamnus rooted now will do useful work, though the flowers will not be large. Plants in less-to-bones should of course be rooted so that they may not become needed or naked at the bottom. See that all inside borders are moist. Give liquid manure to Roses planted out and in pots. Plants of Campanula pyramidata, white and blue, should be shifted into their blooming pots. These will vary in size according to size of plants. Large plants may have 8-inch pots, next size 7 inches, and the small ones 6-inch pots. These are sown at the end of summer and in autumn; they are easily raised from seeds, and if well attended to they will flower the second year. A group of Gladioli coming into bloom is always attractive. These are worth more attention. Large plants in good condition need not be reotted annually, as vigour can be kept up by the moderate use of stimulants. Ivy Pelargoniums grown into specimens are always effective. Some degree of training is necessary, either by using stakes or wires. Three or four wires bent over and both ends thrust in the pot, so as to form a cone shaped trainer from 2 feet to 3 feet high, is a simple, easy mode of training. Named Cinerarias which have done blooming should be moved to a cooler pit to develop the suckers at the base. Primrose seed which is now ripening should be looked after.

Stove.

The stove as a rule does not require much ventilation at this season, though no hard and fast rule should be laid down, as these structures vary so much in size and character, and each house in the matter of ventilation, shading, &c., should be especially studied. Too much shade is always injurious, and too much cold, dry air rushing in drinking up all the moisture is even more so. At this season, when the days are bright and the air cool, it is better to temper the sun's rays with a thin shade than to keep down temperature by much ventilation. It is difficult to avoid overcrowding in this house now, for plants are growing freely. If there are mealy-bugs on any of the plants it will be a mistake to seek relief from overcrowding by moving any of the plants to the Veranda. This is sometimes done, but it is very risky. It will be found far better to throw out a plant or two than run the risk of filling Verandas with mealy-bug. Ailanthus and other flowering climbers must be grown in the light to obtain a good crop of flowers on the young wood. The usual way to train the shoots near the glass on trellis or strings, and when the frames of blossom can be distinguished to take them carefully down and fix them on the wire trainers. Basket-plants will require a good deal of water now. When a thorough soaking becomes necessary, take them down and dip in a tub or tub. There should be a tank for supplying water with the chill off in every stove.

Unheated Greenhouse.

When Tuberos Begonias are wintered in pots, or celloars, or other frost-proof buildings, they may be kept brought back now to the greenhouse. I should not report yet. Let the growth start away first, and when the shoots are an inch or two long shift into larger pots, removing a little of the old soil without disturbing the roots overmuch. Very pretty are these Auriculas now. The outline of choice Primulas and Polyanthus may be combined with Auriculas, as all thrive under the same conditions. It will, of course, be borne in mind that this family requires good hum, and they cannot bear much hot sunshine. Tree Ferns are bright and showy, and may be grown well to pots. A collection would be most interesting and should be plunged outside in summer, after the wood had been hardened a bit, and the house then given up to Lilies, Fuchsias, and Tuberos Begonias, with a few odds and ends thrown in.

Mushroom-house.

New beds may still be made up to the house, but the season is at hand. Mushroom beds will do as well in the open air, as unless the house stands in a very cool position, Mushrooms in summer will get maggoty and be useless. The best stimulant to revive flagging Mushroom-beds is dilute of soda, half an ounce to the gallon, and it should be applied warm. All roots of Ribwort, Sea-kale, and other things, the produce of which have been used, should be taken out. Old Mushroom-beds as they become exhausted should be cleared out also, as they lead to the increase of woodlice and other insects.

Sowing Greenhouse Annnale in Hot-bed.

Many things may be raised from seeds sown in hot-beds now that will be useful for the greenhouse later. Cocks-combs, both the old-fashioned kind and the lathery plumose varieties, and Celosias can be grown to a very

useful size to a short time from seeds. Mignonette, Balsam, Thunbergia alata, Cobaea scandens, and Mirandraya Barclayanii, Gloriosa, and the various Begonias may be sown now also Primulas and Cinerarias in Blue Gums and Cannes, especially the new large-flowering varieties. If the seeds of the Cannes are soaked in warm water 24 hours they will germinate immediately.

Cold Frames.

Tender plants will require warm covers at night. Two thicknesses of mats will be required if mats are used, but straw covers are cheap and very efficient in keeping out frost. Water only in the mornings of fine days at pressure, and it is better to keep the plants on the side of dryness at the roots for awhile, until there is a marked change in the weather. As soon as the seeds of Stocks, Asters, &c., have germinated move to cold frame, and ventilate to keep growing steady.

Window Gardening.

Pelargoniums will soon be coming on, and every effort should be made to get rid of green-fly before the plants open a flower. Roses are not much grown as window plants; the reason is, probably, they look but a short time, and the plants in the half-stated condition in which they are generally seen are not good to look at. Very many hardy plants grown for early blooming (Roses among the number), are much injured by being turned out before the growth has been ripened. Where Roses are grown to windows at all, the Polyantha roses will give satisfaction.

Outdoor Garden.

Evergreens may be safely transplanted now. A good deal depends upon the way in which the land has been prepared. Where the ground has been trenched and priviered by exposure, trees and shrubs will stand a much better chance of growing than if holes are dug in unworked land. When shrubs or trees are moved from a sheltered to an exposed position, it is always desirable to afford some shelter the first month or two, or until the period of cold winds are past. There are cheap and simple ways of doing this. Stout stakes driven to on the windward side, and evergreen or other branches used to form a shelter by winding them between the stakes. A few sometimes used a double hurdle to break the force of the wind, and these answer very well. Brush faggots with the thick ends fixed in the ground form a good shelter. Groups of Tricomas are very effective near masses of shrubs on the lawn, jut out from them as it were. They offer a striking contrast to groups of Pampas Grass and masses of Polygonum cuspidatum. All of these things may be planted now; better let the Grass grow close up to the plants without any formal or exact margin. Very pretty in the borders have been several large groups of Oxycodons, Lucille (Cory of the Snow). These may be sown in the spring. Hepaticas at this time should prepare the ground by working in a plenty of leaf-mould with sand, if the ground is heavy. A shady spot suits them best, as it does also Cyclamens and Dog-tooth Violets. Divide and replant Violets cornuta and V. lutea. Plant out totted and other Panicles still in cutting beds. Plant out edgings of hardy plants, these will include Bedum Saxifrage, House-leek, Lavender Cotton, &c. Book work may be altered and extended now. Sow hardy annuals in quantity.

Fruit Garden.

Pines should now receive the spring shifting. Those specimens which require larger pots should receive present attention, and the bottom-heat should be overhauled and, where necessary, renewed. Most Pine-growers have soil choppers up to the plants, and these should be covered days before a start is made. Pots also of the most perfect kind prepared, so that when the weather is suitable the work can be rapidly executed. Where Pines are grown largely the shifting at this season and the renewal of the bottom-heat or plugging beds must be done very promptly. Good turfy loam, more or less enriched according to quality, will form the basis of all Pine growing. A little old manure or bone-meal with a sprinkling of soot is always useful. Press the soil firmly in the pots and where possible remove a leaf or two from the bottom of the plants so as to drop them a little deeper in the pots, and encourage the production of new roots. Give the final thinning to Peaches in early house which have finished stooled. As a rule, I do not recommend many surplus fruit to be left on so long as this, still, a final look round should be given and where too many fruits have been left reduce the numbers. Small Peaches have but little value in a commercial or, indeed, any other sense, and this means rather severe thinning. One to a square foot may be taken as the correct distance apart. Peaches will be a good deal of nourishment in the way of stimulants, but they will not be cooling or too long of the flavour may suffer. When the first lotting of colour appears discontinue the use of stimulants. Grapes hanging to the room must be looked over frequently. A good stock of Lady Down's in good condition would be worth money now, though Grapes are very cheap owing in comparison with what they were thirty years ago. Keep up the succession of Strawberries by introducing the requisite number of plants at fortnightly intervals. Continue to do grafting and look carefully after the blossom of fruit-trees.

Vegetable Garden.

Successional crops of Peas, Beans, Horn Carrots, Spinach, Lettuces, and small salads should be sown as required. Good Peas for pre-sock sowing will be found in Duke of Albany, Walker's perpetual, No Plus Ultra, and Victor's Perfection. Doubtless there are many other sorts of good quality, but not better than those mentioned above, and the cost of the seeds will be 50 per cent. more. The Green Woodcock is a good Bean for present planting. The Beans are a better colour when cooked than the broader varieties, and I do not think the very Broad Beans have much to recommend them for the table. The Herb garden may be rearranged now. Cuttings of Sage, Thyme, Mint, &c., will root now if planted firmly and supplied with water till rooted. If desired, seeds of Sage, Thyme, Lavender, Rosemary, &c., may be sown in many new beds of Mint, if the young shoots are out with a knife, a couple of leaves beneath the soil the out shoots will easily lift out with good roots, and it planted in beds 6 inches apart there will be Green Mint for gathering to a very short time. It is a good plan to have Mint in different aspects so as to have fresh Green Mint all summer. A patch in a warm sheltered spot will come in early, but the best supply will be under a north wall. Sow main crop of Beet about the middle of April generally. In very early districts the

sowing may be delayed till the end of this month or first week in May. Main crop of Carrots should be got in now, sow on six or seven rows. Carrots may be sown in small quantities till middle of July for drawing young. Sea-kale coming on in open air must be covered entirely to keep the air and light from it. Earth up Cauliflowers and Cabbages. Drain soil to Peas and Beans and place sticks or other supports in good time before the tendrils start away. French Beans may, if desired, be started in boxes for planting on a warm border. Cauliflowers which have been raised in heat must be well hardened before planting out, and it is better to plant in rather deep drills. Tomatoes, both for sowing in cool-house and also for covering walls or fences outside, should be kept moving, being shifted into larger pots as required. Cucumbers and Melons in frames will need careful management now, avoiding all checks either by injudicious watering or ventilation. E. HODGKIN.

Work in the Town Garden.

At the time of writing the weather is exceedingly bright and warm in the daytime, but with frosty nights, necessitating the use of a good deal of fire-heat for tender plants under glass. Under such circumstances evaporation is very rapid, and a much larger supply of water is necessary to keep them in a healthy and growing condition. At this season the forenoon is the best time to give water, or, at any rate, the chief part of the supply, though the stock, and particularly those in small pots, should be looked over a second time during the afternoon, especially in warm houses, where the pipes have to be kept hot during the night. After a thorough supply has been given to all plants showing the least signs of dryness, in the early part of the morning, the whole of the contents of the house should be liberally sprinkled with a fine spray of clean water, with the chill just taken off—set warm. Without an abundant supply of moisture plants in pots cannot make a healthy growth; and if the drainage is free there will now be but little danger of giving too much—that is, if no more is applied as long as the soil remains moist. Small seedling plants in boxes or pots must now be shaded from bright sun during the middle of the day, such as have been recently pricked off, in particular; shade is not necessary for all outtings in process of striking. The best of established plants, such as Stocks, Snowdrops, Pansies, Fuchsias, Patulias, and other wall, however, be all the better for full exposure to all the sun there is at present; but take care to ventilate freely and in good time, so as to avoid a stuffy atmosphere. Cinerarias and Herbaceous Calceolarias should be lightly shaded on bright days, and if the foliage will, it is better to sprinkle them liberally overhead than to deluge the roots with water, though if the soil is found to be really dry this must be rectified also. No time should be lost in potting tubs of the Tuberos Begonia, and planting in a healthy position to start, even with no more heat than that of an ordinary greenhouse; most of these are already on the move. If they can be plugged in a gentle bottom-heat for a time they will form roots more quickly and plentifully, but keep the tops near the glass with light shade from bright sun. Prick off seedlings into extra well-drained pans or boxes of lightly rich soil, leaf-mould and sand mixed, and keep them close and regularly moist. Tomatoes must be pricked off as soon as they can be handled. Keep them moderately warm, but not near the glass. Sow early in a frame or box Phlox Drummond in a frame or in boxes on a greenhouse shelf. B. C. E.

THE COMING WEEK'S WORK.

Extracts from a garden diary from April 1st to April 8th.

Prepared a piece of ground for planting with Violets to raise plants for growing in autumn. Maria Louisa is the earliest grown. Some good flowering has been worked in. Shift plant Violets from middle of month. I find they make the strongest and best growth when planted in quite an open situation away from wall and buildings. The mats thing is to plant early, and keep them moving till it is time to plant in frames, which with us is about middle of September. Water will be given should it be necessary when the weather is hot and dry. Watered newly-planted trees and shrubs; they are, perhaps, not exactly suffering, but it is best not to wait till they are better at this, and to give them a little water. They were much when planted, and will be difficult to keep the soil near the roots moist. Sowed main crops of Beet and Carrots. Prepared trenches of late Peas. These are isolated with other crops between. Peas do so much better when the light falls on all sides. I prefer where possible to run the rows north and south, as the sun shines on both sides. Prepared trenches for earliest Celery; only just a row or two will be planted of this first crop. The plants are coming on to small pots, and in the meantime the main crop of Celery with the soil. Celery has been planted on the ridge. Sowed New Zealand Spinach in pots under glass. Two or three seeds are placed in the centre of each pot, and when the plants are hardened off they will be planted in patches a yard apart in a warm, sunny spot. Picked off Capsicums. Sowed in boxes Basil, Marjoram, and summer Savoy. Made ome bed of Mint. A good deal is forced, so new beds are made annually to get the roots strong, and to always have plenty in stock. Cucumbers under glass are growing rapidly now. Lights top-dressing in a given frequently, as where the plants are doing well the white roots soon work through, and I would rather use little and often than put on a heavy top-dressing at one operation. Set early Melons. Thinned Grapes in second vintage, and dis-huddled and tied down young growths in late houses. I was much afraid our house of young Vines had been over-cropped last year. However, the Vines have broken well, and are showing plenty of bunches, so I suppose no great harm was done. They had one thing in their favour—they had received a heavy dressing of Silurian manure. Sifted soil among Pansies, Pinks, Carnations, and growing plants generally. Moved bedding plants into cold frames, and all cover with straw mats at night. Sowed Cucumber and Melon seeds for raising plants to fill pits and cold frames when the bedding plants are set out. Sowed a few more Vegetable Marrow and Ridge Cucumber seeds. Thinned Potatoes in early beds, but Alexander Manure and Waterloo have come out better than expected. It is not often these varieties are so good, but they will be required; but this season

* In cold or northern districts the operations referred to in "Garden Work" may be done somewhat later to a fortnight later than is here indicated with equally good results.

there has been a considerable number to pull off. Tied down young wood in Peach-house. To have *Sax. Peaches* they must have generous treatment, and only carry a moderate crop. I should have been glad to have taken bedding and other plants out of this house earlier, but could not manage it. Planted out Hollyhocks, Gladiolus, and remainder of Carnations. Rolled and mowed lawns.

OUTDOOR PLANTS.

FINE GRASSES.

We regret that the noble Pampas Grass (here figured) is not more frequently seen than it is at present. When the plant came to the country first it was—perhaps because, being put in choice positions, and in good soils, it was more satisfactory—more common than it is now; doubtless, too, the very hard winters that we have experienced have sometimes caused its destruction. Its striking and handsome appearance make it worthy of a position in every garden, and as this is a good

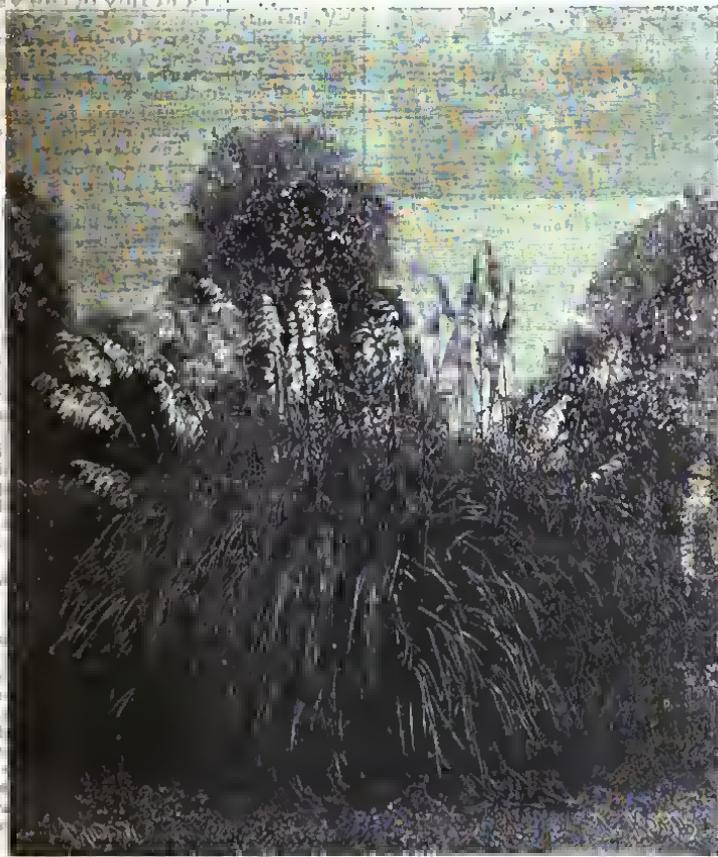
were one or two forms of it in cultivation, and then there was the Yellow Nymph, a good thing in itself, but now so infinitely surpassed by Yellow Hybrid Water Lilies that it is not fit to occupy space in the same sheet of water. In any case it should not be where it comes into competition and contrast with the lovely things described below. Now we have Water Lilies with the flowers nearly 8 inches across, and the colours embraced are white, flesh, pink, rose, carmine, and yellow, and all, let me impress upon my readers, as hardy as the common kind. For a long time tropical kinds had the monopoly of brilliant hues, and those who have seen the Lily house at Kew must have longed for some such coloura for the outdoor ponds, where the flowers might be enjoyed without the fatigue of enduring hot temperatures. It is true the tropical kinds with blue flowers have no counterpart among hardy kinds, but then we have two yellow varieties, and this colour hitherto

and is well adapted for small pieces of water, but its value is diminished through the increase of fine hybrids. Then there is Caspary's Water Lily, which some call a distinct species, and others make it a variety of *N. alba*. At any rate, it is exceedingly beautiful, and I think I may say rare and very expensive, for the new kinds are offered at a much cheaper rate than this, although it grows wild in Sweden. It begins to flower earlier, and with the water at a lower temperature than any other kind. Its flowers in size and shape are like those of *N. alba*, but they are of a deep rosy carmine colour. It comes with a flush of flowers in May and June, but ceases in summer. There are many kinds to succeed it, however, and its earliness is a great point in its favour. The Sweet Water Lily is *N. odorata*, an American species introduced 100 years ago. It differs in many respects from our native kind, flowering profusely in deep or shallow water from June till autumn. Its flowers are white and sweetly scented. Some plants of this species have a decided red tinge in their flowers at the base of the petals, and one well-marked variety has been discovered in America, and called the Cape Cod Water Lily, having been found near Cape Cod, Boston, Mass. It is called *N. odorata rubra*; but the latter name is a little misleading, as one cannot truly call it red. It is, however, distinct from the Swedish kind, its colour being pure rose at the base, shading to pink at the edges and tips of the petals. It is a profuse bloomer, and the flowers open widely. Last year my group of six plants was not without flowers from the time they first appeared in June till late October, when the days became too dull and the water too cold for numerous bulbs then showing to develop.

N. TUBEROSA is a North American species, limited in its natural distribution, and uncommon in cultivation. It has not the long, thick, fleshy root-stock peculiar to most Nymphæas, but instead a thick, fleshy tuberous mass of roots; hence its name. It is, however, easily increased, and should be more commonly cultivated. Its flowers are white, larger, longer and broader in the petal than those of other wild species, whilst one distinct trait it has is that its flowers are thrown up above the water several inches, those of most Lilies floating on the surface.

N. FLAVA is the only yellow kind ever found wild, and exists in Florida. It was for a long time a puzzle to the botanists, who supposed it to exist, but they did not know where. It was introduced into this country about twelve years ago, and although tolerably hardy, it has not proved very desirable in cultivation. Instead of having a thick rhizome, it has a mass of fibrous roots, and in addition it sends out long, runner-like shoots after the manner of a Strawberry, and these form young plants. The flowers are canary yellow. From its habit it could hardly be grown in a confined space, but there is no need to trouble about it. Doubtless it was one of the parents of M. Marliac's yellow hybrids, and we have its charming colour embodied in plants that stay at home, and for months keep sending up magnificent and immense flowers in unbroken succession. The last true species that has come under my notice is a pigmy kind, but a gem for tiny fountains, or for culture in a manner suggested below. It is called *N. pygmaea*, and hails from Siberia. Its leaves are about the size of the palm of a man's hand, and the flowers, which merely consist of four white petals, besides, of course, the inner parts, are, when open, only about 2 inches across. Now we come to the hybrids, that will do so much to make the whole family popular in the near future and greatly sought for. They seem to belong to two distinct types. One lot, to which M. Marliac has given his own name, has flowers larger in all their parts, and altogether considerably in advance of anything hitherto known or seen among Hardy Water Lilies. Another section in odour, and size, and shape of flower, without a doubt comes from the odorata type, and the name has been retained, adding another descriptive of colour. The giants of the family are the Marliacea kinds.

N. MARLIACEA ALBIDA surpasses all the white kinds in existence. It has great vigour of growth and leafage, and is yet a most elegant ornament in themselves—being purple-red when young, becoming a rich lustreous green with age.



Olyseterium argenteum. Pampas Grass (*Olyseterium argenteum*).

time for planting it, our illustration may have some effect in enforcing its claims upon our readers. It should be given good and deep soil.

HARDY WATER LILIES.

From time to time questions appear in GARDENING as to what to grow in water. In the issue of March 15th, query 3299 refers to the subject. Now water flowers are very numerous, but the Water Lily is the queen of all, and having regard to the fine kinds of recent acquisition, I have not the least doubt that when they are better known, all who have a pond of any size will want them. Few flowers are more satisfying. Tea Roses, Carnations, and other favourite flowers are charming, but they need constant care and attention; but our Water Lilies need no care at all, and they have a blooming season that begins in May and ends in November. I cannot say too much in their favour, nor praise them too highly. It is only the work of recent years that justifies making these flowers a prominent feature. The old White Water Lily always had plenty of admirers, for none could fail to be pleased with its simple beauty and spotless purity. There

only existed in a kind little grown, because of its peculiar habit, but now is embraced by two of the best sorts in existence. It is to the labours of M. Latour Marliac we are indebted for these acquisitions. Their actual parentage at present remains somewhat—in fact, entirely—obscure; but that is of little moment to those who have a sheet of water to adorn. It is far more important to know what has been done and how we can avail ourselves of things provided. Before describing the newer varieties I will say a few words concerning the older species, and this is essential in order to classify the hybrids, and refer them to the sources that their characteristics seem to indicate.

THE COMMON WHITE NYMPHÆA ALBA is known to all, being a native of ponds and rivers. It often is in flower before May is over, and in a wild state is usually finest where there is a depth of from 2 feet to 3 feet of water over the crown. Being so profuse and widely distributed it might be expected that natural variations would occur, and there are several varieties of it in cultivation, one being named *minor*, its flowers being very double, with many more petals than those of the type. Another kind named *minor* has small flowers,

The flowers are simply immense, like great white deep saucers floating on the water, 7 inches in diameter, with a rich bright-yellow centre. The outer petals are very long and broad, but they gradually shorten towards the centre. Everyone who can grow a Water Lily should have this bold and handsome kind.

N. MARLIACEA CARNEA and *N. Marliacea rosea* may be described together, for they are counterparts of the preceding kind in vigour of growth and leafage, and holdness and immensity of bloom. The names rather indicate the colour, the first-named kind having flowers suffused with a pale flesh tint, and in the other the colour deepens into a rosy-pink. Last, but not least in this section, is the

CANARY WATER LILY (*N. Marliacea chromatella*). It is full of character and interest. The leaves, at first purplish-red, change to deep-green, with distinct and most beautiful marblings of a dark brown-red, whilst the flowers in size are like those of the kind above mentioned, but of a soft yellow hue, with a rich centre. It is now one of the commonest of the choice new varieties, and I note with satisfaction is becoming cheap, for all should have it.

N. ODORATA SULPHUREA is the other yellow variety and it is hard to say which is best. Certainly anything more lovely than this was with me through the latter part of last summer and autumn is inconceivable. It differs in many ways from the preceding kinds, but has prettily marbled leafage. The long pointed buds suggest a spear-head as they pierce the water, and they are quite 4 inches in length, opening into immense spreading flowers nearly 8 inches across. The last flower of this kind cut towards the middle of October last year was, when measured, of the dimensions here given, and its scent was most delicious. The colour in addition is deeper and more decided than that of the Canary kind, whilst the petals being long, narrow, and pointed, open widely and reflex, giving the flower a very starry appearance.

N. ODORATA ROSACEA is a perfect gem of exceeding loveliness, though considerably less in size of flower than the above named kinds. The flowers are about 4 inches across; it is very free blooming and the colour a clear bright soft-rose with yellow centre, and the sweetest of odours perfumes the flower. The petals are much narrower than those of the *Marliacea* series, and the flower is a perfect pink star, floating among rich-green leaves.

N. ODORATA EXQUISITA is the deepest-coloured kind that has yet been sent out, but otherwise it did not appear to me quite as lovely and attractive as the pure rose and yellow-hued sorts. There may be something in colour fancies, however, and, giving it its due, it is certainly the greatest advance in colour that has yet been made, the flowers being deep rosy-carmine—in fact, almost red—at the base of the petals. The young leaves are of a very rich-purple tint, becoming green when full grown. I believe the illustrious raiser of these lovely Lilies has further added to them, and doubtless fresh enterprises may be in store, but I speak only of those I know and have grown, and the pond will be beautiful indeed that is planted with them all. In my case, the pond was only an asphalt one, with a padding of clay inside of it. In order to isolate the Lilies from Typhas and other strong weeds present, concrete boxes were made for the plants, each one being 4 feet square and about 18 inches deep. This expense is rarely necessary, as a pond with a few inches deposit will support the plants, and they can hold their own against the smaller water weeds; it is the vigorous Rushes and Reeds that must be kept down and, if possible, exterminated. A simple and expeditious way of planting is to put the plants with soil in some shallow baskets and sink them to the bottom. Before the baskets have rotted the plant will have fixed itself to the bottom with fresh roots. The best season for planting is that now at hand—the spring. Plants put in in May even of a comparatively small make sufficient progress to flower before summer is gone; the only exception in

my experience has been the Canary Lily, and this, in two instances, did not flower till the year after planting, but grew strongly nevertheless. A word might be said as to arrangement. It is best to have the pink ones nearest at hand, where they can be seen closely, and the yellow associate well with the pinks, whilst the whites may be in the distant parts, if such there are, as they are effective wherever placed. I imagine more will long for these Lilies than have means, or rather opportunities, for growing them. There is nothing like a lake, stream, or



Primrose "Munstead White."

pond, but, falling these, one may resort to other things with an amount of success. I have seen aquatic plants really well grown simply by sinking tubs in the ground and half filling them with soil and then filled up with water. Those who could afford it, too, might make brick and cement tanks in the same way as the boxes above mentioned, only to be sunk in the ground to a depth of from 2½ feet to 3 feet. These, with a foot of soil and the rest water, would grow excellent Lilies. It is a valuable quality these hybrids have in not wanting a great depth of water over their crowns. In the pond in question there was little more than a foot, and summer evaporation on several occasions reduced it to 8 inches or less, but still the plants kept flowering. It would be well, however, to arrange that at least a foot might cover them in winter, and then they are virtually safe from disaster. Possibly they might not be killed if frozen with the water, but I avoided the risk, because they were precious things, and expensive, too, when I first planted them, although they are reduced in price as the stock increases. Early in the season they manifest strange vagaries as to opening and closing; the opening being a short day of from 8 a.m. to 3 p.m. Later, however, they lengthen their day to nearly 12 hours, and open daily whether bright or dull, although at first they await clear sunshine before expanding, and on a dull day remain perfectly closed. I first found this out through a friend calling in the summer, and it was pouring with rain. I told him with regret he would not be able to see the Lilies, but, to my astonishment, upon going to the pond before 9 a.m., more than a score of splendid flowers stood wide open. A. H.

A USEFUL WHITE PRIMROSE.

The grower of a large batch of seedling Primroses of a good strain may always expect some pleasant surprises. Among seedlings of white and yellow hunch Primroses a few years ago appeared one of the plant of which a small group is shown in the above woodcut. Though from *Polyanthus* seed, it is a true single-stalked Primrose, of a clear white colour with yellow eye. It was once conspicuous from its very early and dense bloom, a character that its divisions always maintain, and it has proved one of the best for masting for spring effects. It is known as *Munstead Early White*.

3402.—*Beds on a small lawn*.—If not too much shaded, Tuberos Begonias would succeed well, as they are not adverse to partial shade, but will succeed also well in the full sun. There is now such a charming series of colours in a good selection that I think you will get

much pleasure from the flowers, and they will maintain a gay display until the autumn. It is too late now to raise seedlings for flowering this year, but you may purchase bulbs or young plants, which will not be very expensive, as the beds are not large. You might plant them with sub-tropicals if the space is not too small; but I think Tuberos Begonias would succeed best. An edging could be formed of the Variegated *Daotyliis*, Golden Moneywort (*Lysimachia Nummularia aurea*), *Loebelia*, Golden Feverfew, or Tufted Pansies if the position is not a shaded one. Of course, if the beds are where the sun never shines, it is unreasonable to expect a gay display of flowers through the summer months. —C. T.

—The best thing you can do will be to plant the beds with *Violas* in belts somewhat as follows: centre—*Counicee* of *Hopetoun*, followed by *Bina Bell*, *Golden Queen*, *Admiration*, *Counicee* of *Kintore*, *Golden Prince Improved*, and *Bronze Queen*. This arrangement would have a very pretty effect and with a little attention would last throughout the summer. —A. G. BUTLER.

3379.—*Violas and Lily of the Valley*.—*Violas* may be planted and readily increased during April and May. Use the healthiest and strongest runners from old stools, placing these about a foot apart in the row, and the rows one and a half feet from one another. *Lily of the Valley* should be planted early in March, just as it commences to grow, but before the crowns show any green. The old variety of *Violet* named *Czar* is a good and sweet-scented kind. So, too, is the improved variety; this is larger, but does not bloom so freely, nor smell quite so sweet. *Marie Louise* (deep lilac), and *Comte de Brazza* (pure white), are good double varieties, that are perfectly hardy. Choose a moist and partially shady place for the *Lily of the Valley*. —P. U.

—The present is as good a time as any to plant the latter, and the former may be transplanted as soon as good rooted runners can be had. These always make the best plants, and if put out a foot apart in good rich ground and a fairly open position, every one will make a good flowering clump by next winter. The best *Violas* are the old Russian, *Victoria Regina*, *Welshiana*, and *argenteoflora* (single); *Marie Louise*, *De Parme*, and the *Neapolitan* (double purple), and *Comte de Brazza* and *Belle de Chateaux* (double white). All are quite hardy, and in a moderately warmed bed will produce flowers, more or less, during the whole of the autumn, winter, and spring. Always plant quite firmly. —B. C. R.

—The best time to plant *Violas* is immediately after blooming is finished, usually in April. *Lily of the Valley* should be planted not much later than February. The hardiest and best *Viola* for open-air blooming are the Russian, of which there are several varieties, including the *Czar* and the *Oiant*, both of which have larger flowers than the common variety. In warm situations the double blue *Marie Louise* flowers fairly well, but in severe weather the flowering ceases. I have often cleared the snow off the Russian *Viola* and gathered flowers in the depth of winter. —E. H.

3385.—*Treatment of Spiraea japonica*.—After flowering the roots should be cut in two if more plants are required and planted in good soil in any open position out-of-doors, where they may remain to complete the whole of the next season's growth, after which they can be taken up and potted again. *Spiraea* do not flower nearly so freely, neither do they make such good foliage, if grown in pots every year. They need a rest of at least a whole year. —S. F.

—If you turn the plants out of the pots just as they are (but having previously hardened them off) into a bed of rich sandy soil, and keep them well supplied with water, they will flower again next spring either in the ground or if lifted and potted in December. But they would do better still if divided into pieces with about three eyes each, and allowed a year's growth undisturbed. Or you may keep them in the pits, plunging these in ashes outside, giving plenty of liquid-manure through the summer, and repotting into a rather larger size about the end of the year. —B. C. R.

—It is much best and least trouble to turn these out in the border after flowering is over, but it will not do to expose them to too great a change in temperature. Keep the plants abundantly supplied with water while growing,

and stand them in a frost-proof pit or frame until the end of May; then plant them out in deep loamy soil, giving them one thorough soaking as soon as possible. After this they may be allowed to die down naturally, and will make good crowns for lifting the following season. If they receive a severe check, either from drought or cold, while in full growth, the crowns are of no use the next season. Few plants require more water than this Spiraea.—P. U.

This plant requires a great deal of water both before and after flowering, and, being a hardy herbaceous plant, it may be planted out in the open border, or, if it is intended to grow them in flower-pots for early forcing, they can be shifted on into larger pots, and will flower splendidly the following season, if they are not neglected during the growing season. Plants in 6-inch pots should be shifted into others 8 inches diameter. Use good rich potting-soil, such as is well adapted for Pelargoniums, Fuchsias, and plants of this character. The plants do best out-of-doors after the month of May. If they are planted out the thick mass of fibrous roots which have grown into a hard ball must be disentangled a little. Prepare a piece of fine, rather sandy soil, enriched with some decayed manure, water the plants well before turning them out of the pots, and plant firmly. Water them well until established.—J. D. E.

The plants should be well supplied with water until the growth ripens off naturally. The best plan is to harden the plants off and plant out in new soil and keep supplied with water. By the planting-out system less water will be required. Much with old manure or leaf-mould.—E. H.

3387.—Violets for outdoor culture.—In my opinion no variety beats the old and new Czar Violet, as far as single blues are concerned. Marie Louise is the best double blue, and Comte de Brazza (syn. Swanley White), the finest double White variety. April and May are the best times for making new Violet beds, and I find them much better if done annually. Choose showery weather if possible, and have your ground all ready, so that a good opportunity may not be lost. Healthy runners are the best. Place these 1 foot apart in the row, and 1½ feet row to row. Keep all runners off during the summer, so as to form a stouter crown, when they will mature and flower better. I leave a few to make runners at will, so as to form good sets for next season. Few subjects are increased more readily than Violets, every runner making a plant.—P. U.

By far the best plants are those obtained by planting out the rooted runners in April. This should be done annually, when splendid clumps for flowering the following winter or spring will result. If allowed to grow "at their own sweet will" they become overcrowded and starved in time, and then the flowers will be few, small, and poor. Rich, firm soil and plenty of water in hot weather are the chief secrets in obtaining plenty of fine Violets. (See also reply to 3379.)—B. O. R.

For purely outdoor growth the single kinds are the best, being more hardy than double varieties; but if a cold frame can be had the latter are much preferable for winter flowering. The rich mauve-levender-blue flowers of Marie Louise, the pale lavender-purple of De Parme, and the pure white Comte de Brazza are more appreciated than the single-flowered kinds, of which the Czar, or Russian, is the more hardy and free in flowering. All kinds are better for being divided and planted afresh annually. Violets will succeed in almost any situation, although much depends upon the character of the soil. What is known as sandy loam produces the best results and with the least trouble. Heavy, retentive soil is the worst; the plants do not make growth sufficient in that to enable them to flower freely. The soil ought to be moderately enriched with manure; too much induces too great a crop of leaves at the expense of blossom. Whatever manure is required should be added early in the autumn, when the soil is dry. In the case of that which is heavy it ought to be laid up roughly to receive action of frost, which tends to ameliorate it considerably. If a position facing south can be secured more blooms will be produced during the autumn and early spring. The middle of April is a good time to plant, either for extended plantings or for renewing the old. Plants that have flowered this season provide suitable plants for next year's supply. By pulling them in pieces every

bit with roots attached will grow, although, where a plentiful stock is available it is not wise to make the new plants too small. A space of 10 inches between each is sufficient. Showery weather for planting is best, the labour of watering and shading is avoided, it being necessary to do both during hot, dry weather. The same treatment in raising the plant is necessary in growing double-flowered varieties for the frames up to the second week in September, this being the best time for transferring the roots to the frames.—S. P.

FRUIT.

FRUIT AND FRUIT GROWING.

I WAS pleased to see "Salesman's" remarks on this subject (see page 740, Vol. XfV.), for although he says he cannot agree with some of my former remarks he fails to point out where I am wrong, and it is hardly to be expected that a grower like myself, who entirely dispenses with the salesman's aid in disposing of his goods, and have always both by precept and example urged my brother growers to do the same, as far as possible, should agree on all points with one of these, who would find their occupation gone if growers acted more as their own salesmen, for nothing in my opinion so checks the fruit-growing industry as the exorbitant charges for railway and market expenses. No wonder that some have given up growing fruit in their disgust when they find that after the whole year's toil and anxiety the returns are more than half taken up by deductions from the sale hill. I am fully alive to the fact that it is only a small minority of growers that live close to a large provincial town, and can, therefore, sell their own goods either direct to the consumer or to the town fruiterer, thereby saving both carriage and commission; but I should like to point out that land is at least double the rent close to towns for which it is going begging in rural districts. "Salesman's" principal objection to my advice is that relating to Apples, and I certainly stated that they are the sheet anchor of the English fruit-grower, and in spite of all he says about foreign or colonial competition being more severe than in any other fruit, I am every day more firmly convinced of the soundness of the advice I gave, and as a practical proof of that I plant more Apple-trees every year than all other kinds of fruit put together, and for this reason—no matter how plentiful

Apple well, and my idea is, that if Apple-trees had half the care that is lavished on Grapes under glass, they would repay it at least double. It is not that we are exempt from foreign competition, as the barrels or cases are unshipped in eight of where I live; but no matter whether they are Gravensteins, of which "Salesman" writes so enthusiastically, they cannot compare with our home-grown ones, that are like a golden wax, streaked with crimson, and covered with a bloom equal to Grapes. Northern Spy and Baldwins do not succeed so well with me, but nearly all the other kinds enumerated come to great perfection here, and I cordially endorse all he says in their praise; in fact, it is not want of good sorts, but which to select from such excellent sorts, or rather to find space for them, that is the only difficulty I have with Apples. By-the-way, the Apple "Stirling Castle" (hero illustrated) is an excellent early and free-bearing kind, and does well in bush form. With regard to Peare, I am pleased to see that "Salesman" agrees with me, for I am more hopeful than he appears to be about the climate of this country in its most favoured parts, admitting of very excellent fruit being produced even in the open air, for in this locality Pitmaston Duchess is certainly as clear skinned and handsome from open bush-trees as they are in less favoured districts on walls, and the same with other good sorts, such as Baurré Superfin, Baurré Bosc, &c. Cherries are certainly a precocious crop, like Plums, for if you get a heavy crop, the chances are that everyone else has heavy crops too, and you find by the end of the season that you have not cleared so much as you have done from a light crop. Prices vary considerably, and with Cherries, the best paying crop, like White Heart, will be entirely spoiled by a spell of wet weather when fit to gather. For these reasons I never advise extensive plantings of either. Bush fruits are safe crops, very rarely failing, but the prices realised and expenses of gathering do not leave any great margin of profit, for it is only what is left over the cost of production that one has to look to for profit. Raspberries depend entirely on the suitability of the soil; it is too dry here for them. Strawberries are, in my opinion, different to any other fruit, for the immense quantity grown a few miles from here realise a high price, not because they are better than those grown in Kent and more inland counties, but because they are fit to gather at least a fortnight sooner, and it is on the first few pickings that the profit is made, for as soon as they are ripe in other parts we get cartloads hawked about at 1s. a gallon.

JAMES GROOM, Gosport.

3399.—Work in orchard-houses, &c.—It would be miserably unfair for a stranger to the garden in which the houses are situated to answer this question without more information than the inquiry contains. To give one instance out of many that could be advanced would be the possibility of giving an answer that would be fair, I may mention the water supply. If this water has to be brought from a distance, say fifty or a hundred yards, that would make all the difference in the labour—and hard labour too. Then, again, would the same man have to clean out the stove-holes, attend to the fires, and get the fuel ready? I may, however, mention that glass structures generally require a lot of labour, all through the spring and summer especially, and there is a great difference in the way in which they are furnished. One man will be wise in time, and limit the number of plants in pots according to the available labour, while another in his anxiety to please will grow double the number in the same space. I advise "X." to consult a disinterested and thoroughly practical man on the spot to give the information he



Apple "Stirling Castle."

imported Apples are, we can always sell home-grown ones at a higher price than the imported kinds are realising, and certainly our Apple-trees repay our care better than Vines or Peaches. I do not think the purchasers here are any different to other places; they certainly do buy the imported fruit, but in nine cases out of ten it is because they cannot get really good English grown ones, or they would not mind paying a price at which English growers could afford to grow their

the fuel ready? I may, however, mention that glass structures generally require a lot of labour, all through the spring and summer especially, and there is a great difference in the way in which they are furnished. One man will be wise in time, and limit the number of plants in pots according to the available labour, while another in his anxiety to please will grow double the number in the same space. I advise "X." to consult a disinterested and thoroughly practical man on the spot to give the information he

requires, or possible injury may be done to a deserving man.—J. C. C.

3398.—Grapes in a lean-to house.—A house with an eastern aspect is not a good one for Grapes, and I should not attempt to grow any variety of Grape-Vine in it except the Black Hamburgh. A west aspect is the best after south. Fairly good Black Hamburgh Grapes can be obtained from the house, and if it is well heated so much the better. Cement joints will do for hot-water pipes, or india-rubber rings may be used.—J. D. E.

— Yes, you may grow good crops of Grapes in a house facing due east if you utilise the sun-heat by careful ventilation. Such a house will want the ventilators open early in the morning, especially during the early summer months, when the foliage is rather tender, and the skins of the newly-formed berries liable to injury if the internal air gets overheated, and it will want closing early, according as the temperature declines after the sun has left the house. Three o'clock p.m., except in very warm, still weather, would not be too early to close the ventilators, and in the morning a little air should be given at the top of the house as early as six-thirty. If it is inconvenient to open so early you had better leave a little air on all night by opening one or two lights at eight or nine o'clock in the evening. With regard to heating, ordinary hot-water pipes and Portland cement joints will do very well, but expansion joints are better than cement. Forty-five degs. is a snitching angle for the roof; indeed, for an east aspect it is better than a sharper pitch. For training the Vines place the wires 14 inches from the glass, or in such a case the leaves will get scorched.—J. C. C.

ROSES.

MARECHAL NIEL VERSUS CLOTH OF GOLD ROSE.

As to hardy-climbing Yellow Roses, there is no doubt that our gardens have suffered since the advent of *Marechal Niel*, for as soon as the latter was introduced everybody planted it and ignored altogether the Cloth of Gold Rose. In eight cases out of ten the *Marechal* is a failure in the open air—at least, it is a failure so far that it neither grows so vigorously nor flowers so freely as the other. I am, of course, aware that the character of the Cloth of Gold is somewhat "milfy"—that is, it is rather tender, and will only flower satisfactorily on a wall or building with a south aspect—het given these conditions, and budded on the Standard Brier as a stock, it is altogether a far more reliable Rose than *Marechal Niel*. I am free to admit that the Cloth of Gold is one of those Roses on which the cultivator must be prepared to exercise a little patience, as it does not make a vigorous growth until the roots have got well established in the soil. When the latter is provided with a fairly warm root-run it frequently makes shoots 6 feet and 8 feet long, which, if insided in their whole length, will produce a good number of flowers the following year. These blossoms, if not quite so fragrant as the *Marechal*, are superior both in size and form, and of that rich golden colour which once made it such a favourite. Seeing that the Cloth of Gold is hardy enough to live for twenty years on a pillar in an open but sheltered garden, no one need hesitate to plant it against a wall, as only in very severe winters does the growth of the pillar plant I have alluded to get injured by frost, and then only the soft green tops of the shoots are touched. It is very evident that residents in the North of England appreciate the hardy character of the Cloth of Gold, as an extensive grower of Roses in the West tells me that for several years past he has sent a considerable number of plants to different places in that part. These, however, have been all dwarf plants worked on stocks suitable for Teas Roses. From my own experience I cannot write favourably of the behaviour of these dwarf plants; but when they are worked on the common Brier as a dwarf standard I never knew a plant to fall if given a little time, and, so far as my knowledge goes, it is not subject to canker like *Marechal Niel*.

3414.—A Gloire de Dijon Rose.—has it not occurred to you that the bed of soil for the roots being on the boiler-flue is in a most

unsuitable place for any plant to grow? The roots must be often too warm, and in all probability too dry. You had better find a position away from the flue to make up a bed of soil for the roots, and put in a fresh plant at once. Should you be troubled with green-fly in future you had better dissolve two ounces of soft-soap in a gallon of water, and well syringe the Rose once a week. Femigating where there are Vines is attended with danger, besides being costly.—J. C. C.

— You are trying almost an impossibility when endeavouring to grow any Rose under such circumstances as you describe. A bed of soil upon top of a boiler flue, and then covered in by a frame, afterwards having efficient manure placed upon it to cause heating, is altogether against reason in growing Roses. They do not want such strong and uncertain bottom-heat, as your plant must inevitably often receive. I would strongly advise your giving up the attempt. Plant elsewhere, and if the roots must be outside give them the protection of plenty of loose straw. Treat them, in short, the same as your Vines, which, as you do not complain, I presume are doing well. Anyhow, you are trying far too many and varied subjects in the same house.—P. U.

3398.—Rose in a greenhouse.—Rose foliage does not scald very readily, even when against the glass. It is often difficult to avoid its touching, but I should certainly not try to secure its touching, as your adviser states. I much prefer the Rose-growth to be made the lower side of any wire supports, as the wood is easier to get at, and is then kept fairly away from the glass, allowing more air and better light around the whole.—P. U.

3413 — Marechal Niel Rose in a greenhouse.—Your plant is attacked with canker, either below or above ground, and you cannot do better than to root it out and put a young one in its place; but previous to doing so, take away some of the old soil and supply its place with fresh. Do not use much manure. A good heavy loam is what suits it best. I have no doubt you think it strange that your plant should fall so suddenly. That, however, is easily explained—when the flower-buds are forming the tax on the resources of the plant is the greatest, it is then that a sudden collapse takes place.—J. C. C.

— You have stated your difficulty very well and fully, except for saying whether the soil has been kept extra wet or allowed to become too dry. Either of these, as well as over-feeding with liquid-manure, would have just such results as you describe. Which is it? Or it may be that your plant is attacked by canker. If the latter is the case, you will find a warty protuberance where stock and Rose join, and your plant is of no further service. Seeing the plant is over the hot-water pipes, I am inclined to think the roots have been very parched some time recently.—P. U.

3387.—Rose disease.—A bad attack of mildew will sometimes cause the brown patches of which you complain. The mildewed spot appears to develop into a kind of canker. A little dry sulphur rubbed on the affected parts as soon as the mildew appears will prevent the injury. The *Marechal Niel* Rose is very subject to be attacked in this way, especially at the base of the flower-buds. I should lose many fine blooms every season if I did not watch for these mildewed spots and apply the remedy I have suggested, or a little liquid soft-soap applied with a brush.—J. C. C.

— What "Sufferer" complains of is so disease; it is simply the result of bad treatment. His plants, if under glass, have been kept in much too moist a atmosphere; in this case they will often rot and damp off as he describes. It is the open air, untempered wood sometimes goes that way from frost. However, this last is very seldom; not so, unfortunately, with the young growth under glass.—P. U.

3375.—Manure for Roses, &c.—It would be somewhat difficult to decide upon the best manure without knowing the class of soil it was to be applied to. Roses like almost all or any manures, but which is most suitable depends entirely upon the soil. For light soils, heavy and close manures, whether of natural or artificial composition, must be used. For a sample, say your soil is light and sandy, then do not use soot or wood-ashes, nor thoroughly dry stable-manure from a spent Mushroom or Cucumber-bed. If heavy, use manures that will

tend towards making it lighter. Cow, swine, and all animal manures are good for light soils; so, too, is a light-soil, when well intermixed with decayed weeds or vegetable refuse. Guano, crushed bones, and all manures are good; but, as previously remarked, it depends on the soil.—P. U.

— I have used the native guano for Roses, *Gisdiolas*, and many vegetable crops with the best results. It promotes a steady and not too luxuriant growth, which shows that it retains its fertilising properties for some time, but there are others perhaps equally as good; at the same time there is nothing equal to stable or farmyard manure. I applied a dressing of rag-manure—this is the refuse from a mill where rags and old carpets are worked up again for other purposes—four years ago to one part of my garden, and I still find some of it present in the soil. Roses, fruit-trees, and other crops like it, as is evident by the presence of roots where any of the stuff is found.—J. C. C.

— An excellent manure for Roses is Clay's Fertiliser. It is sold largely, and must be used carefully according to the directions. The great thing in using artificial manure is not to overdose the plants, otherwise they will suffer injury.—C. T.

— One of the best manures for Roses is made from sheep-droppings. These are collected and put into a tank or barrel (sunk in the ground), which is then filled up with water and allowed to stand for some weeks. The liquid is then dipped out and used with a certain admixture of pure water, according to its strength, about twice a week. Well rotted pig or cow manure is also used for digging in at the roots of Roses, often with very satisfactory results.—A. G. BURTON.

3403.—Rose "Her Majesty."—Your plant of this Rose will produce more flowers if you do not prune, or at the most only to cut off about 3 inches of the young shoots every spring. I have a plant trained to a pillar which gave me several early blooms last year, and two or three more in the autumn. This Rose is subject to mildew under all conditions of growth, and I regret to tell you that I cannot tell you what to do to destroy it more than you have already done, except you paint the stems now with the mixture you are in the habit of using.—J. C. C.

— Grand as this Rose is, it is a most disappointing one. No variety is more subject to mildew, and few flower less freely. Peg down any long shoots and do not tend too liberally. Bottle against mildew from the first, using the remedies so frequently recommended in these pages.—P. U.

3372.—Roses on Brier cuttings.—Roses are grown just the same on this as upon any other dwarf stock, say, the *De la Grifferaie*, *Manetti*, or *Stooding Brier*. The cuttings of Brier should be made up in September or October, cutting the ripened wood of the same season into lengths of about 9 inches to a foot. Insert these firmly three-fourths of their length in the ground, and about 2 inches to 3 inches apart in the rows. Next autumn lift and trim the stocks, afterwards planting them out 1 foot to 2 feet apart in the rows, according to the strength the variety of Rose you intend working upon them possesses. In planting the stocks do not cover the bottom part more than 2 inches. It is necessary to bud as close upon the base of the stock as possible, in order to avoid any suckers from dormant Brier eyes. Make the Brier-cuttings similar to the Currant or Gooseberry. They strike root more freely if planted deep, and by lifting them and replanting you save much annoyance as regards suckers, besides facilitating deep budding.—P. U.

— Briers from cuttings when strong and well-rooted make very good stocks either for budding or grafting. So far as regards open-air culture, budding is the proper method to adopt, and this should be done in July or August, the bud being inserted close to the ground or even a little below the surface if the weather is hot and dry, as by the removal of a little soil moist bark that will work freely can generally be found. The usual way of raising Brier-stocks from cuttings is to plant the cuttings in the autumn in rows somewhat thick, as all will not root. Give one season's growth, and the following autumn lift, remove latent and other buds from the base, and plant in nursery rows 2½ feet to 3 feet apart, and 1 foot apart in the rows. The land for Brier-stocks must be good, so as to get strong growth, as the bark on puny stocks always works abnormally. In planting out the rooted cuttings keep them up as much as is consistent with free rooting. If planted deep there is not quite so good a chance of getting the bud quite so close to the roots.—E. H.

OLD HOUSE AND SURROUNDINGS.

The annexed illustration represents a beautiful old house surrounded by a garden of quite an unconventional type, and is the property of Sir George Wemhwell. The building shows one part of the original hall inhabited by the Colvill family, who lived there at the time of the Norman survey. Such specimens of pure old English architecture are now so rare that peculiar interest attaches to them apart from the historical associations that are generally connected with them. The quiet colour of the weather-beaten and Lichen-stained old walls is enhanced by the luxuriant trees and shrub growth that reaches almost to the doors and windows, and this is one of the chief differences between old and modern country mansions. Old houses almost invariably nestle peacefully amidst unrestricted tree-growth; new ones, as a rule, stand on a treeless level, often amid a maze of pattern beds and gravel, and are rarely accompanied by a raised terrace, with its excessive array of statuary and other formalities. We fear that architects, not landscape gardeners, are often responsible for this state of things. They seem to have an abhorrence of greenery of any sort approaching their handiwork. The prevalent practice among architects

bright and green in summer by using the bedroom slops upon it without any expense.—J. C. C.

— Diluted bedroom slops have a certain value, and might be more often utilised, but they are not equal in fertilising power to the best artificials which can be used without creating the least unpleasant smell. A tablespoonful of guano or nitrate of soda in a gallon of water will be profitable if any stimulant is required, as would also blood-manure, Ichthemic guano, and Clay's Fertiliser. In actual practice there will always be a certain amount of trouble and difficulty in collecting and applying bedroom slops, and my experience has been that without personal supervision is given, the chamber slops are more likely to be cast down the drains than used in the garden.—E. H.

— I do not think you would find the bedroom slops at all a safe or satisfactory substitute for other liquid manures. It would vary so much, and as you do not possess a tank in which to make a good mixture, it would be much more trouble than it is worth. Liquid manure made from guano would not be half the trouble, while it is much more agreeable and safer. Use it at the rate of three-quarters of an ounce to a gallon of soft water. If soft water

dose to kill them outright. To test this matter, I advise you to give a few cuttings of the double varieties to some friends and let them grow them to see if there is any difference in their behaviour under the treatment of others. With regard to the maggots of which you complain, it is evident your soil is infested with them. In future I advise you to make the soil before using it by placing it in a moderately warm oven for a couple of hours.—J. C. C.

3381.—Creeper for a chalk bank.—The best creeper I have seen on the chalk banks at the south coast railway stations is St. John's Wort (*Hypericum calycinum*). This has covered several of the slopes most beautifully, and always looks well. It is evergreen, and for a long period bears immense quantities of deep-yellow flowers, beautifully set in green foliage.—P. U.

— I should recommend a combination of Speedwell, Creeper Jenny, and the various forms of Stonecrop; the smaller *Periwinkia* would also probably do well, but do not try the large variety, it is too smothering.—A. G. BUTLER.

3410.—Christmas Roses.—Varieties like *Helleborus atrorubens*, for instance, rosy pink, with long flower-stems, the flowers of which droop a little at all times, will not last fresh beyond a few hours in water when cut, owing to a weakness of the stem near to the flower. Nothing will prevent such as these flagging, I might say prematurely. The variety *H. niger*, the common Christmas Rose, is the one alluded



OUR READERS' ILLUSTRATION: Old house and surroundings. Engraved for GARDENING ILLUSTRATED from a photograph sent by Mr. Fowler Jones, Quarrybank, Malton.

now seems to be that of raising the floor line of their houses seldom less than 2 feet above the natural ground level; consequently, the surrounding soil has to be made up to it at great expense, or you get the alternative of the conventional terrace, with more or less steep bank having no connection with the outlying ground. It is, therefore, a great pleasure to come upon such a house as that here represented after visiting those of the modern stamp. One can picture to one's-self the charms which the old garden in connection with such a house must present at every season of the year. It would be brilliant with flowers in spring, shady in summer, glowing with the rich hues of the decaying leafage in autumn, and sheltered and snug-looking in winter. G.

3384.—Fowls in a garden.—Bring an action in County Court against the owner of the fowls for damage done. See former reply, 3rd December, page 562.—O. R., &c.

3391.—Liquid manure.—In the absence of anything better, the slops to which you refer are useful, but the difficulty is to know to what extent to dilute them. The mixed slops would perhaps require one-half of clear water added. Urine alone requires ten parts of water, and both should be kept in some vessel in the open air for a week or ten days previous to use. May a poverty-stricken suburban wren might be sent

is not available let any other water stand in the air for a few hours. If you mix up, say, a pound of guano in a gallon of water and use a sixteenth of this to a gallon of other water, previously stirring the solution, you can have liquid manure to hand always, and undoubtedly in a much pleasanter form.—P. U.

— Even bedroom slops ought to be kept for a time in a tank before they are used in a diluted condition, though for Fancies I have used them in a fresh state without injurious results.—A. G. BUTLER.

— Certainly, there is nothing better. For plants in the open ground there is no necessity to dilute bedroom slops, &c.; but for pot plants an equal quantity of water should be added. In any case it is advisable to expose anything of this kind to the action of sun and air in an open tank for a day or two before using it.—B. O. R.

3415.—Double Fuchsias, &c.—I cannot help thinking that there is some mistake in this case. Occasional instances of reversion from double to single flowers are not uncommon; but if the facts are as is stated in the inquiry it is quite of an alarming character, and opposed to all previous experience. One requires to have fuller information as to past treatment before an opinion can be formed. Have you been in the habit of giving the plants strong stimulants? I hardly think so, as no plant sooner recovers excitable fertilisers than the Fuchsia. I have known a moderate application to cause all the leaves to fall from the plants, and a powerful

to by "V. B." The flowers are pure white, erect, very freely produced, and exceedingly useful in a cut state. Blooms of this will last longer in water if the end of the flower-stem is slit upwards an inch or so long; a greater surface is exposed for absorption of water by this means. The first named is useful for the decoration of the borders.—S. P.

— The reason is that the flowers of the Christmas Rose, as you call them—but which are really the Lenten Roses, varieties of *Helleborus orientalis*, aboriginal, celobious, &c.—require to be actually immersed in water at least once a day. They quickly flag when merely placed with their stems in water like the ordinary *H. niger*. Try this plan, and I think you will find that it will answer. Until I did this I could not keep the blooms at all fresh. The nodding, quietly-coloured flowers are very pleasing in a large bowl. The flowers of the Christmas Rose will last well; but there is greater substance in them than in the *Helleborus* that bloom at this season.—C. T.

3380.—Ants.—These are very troublesome in plant-houses, especially when they are in the Orchid house, as they dirty the flowers often. A very good plan to get rid of them is to cut Apples in halves, remove a portion of the inside, so as to make a hollow basin, and lay them about in the places where the ants congregate. Look

at the hits of Apple vary often, and you may catch large numbers in this way. Even hollow bones have been found useful, and it is an easy matter when everrun with nnts to dip them in boiling water. This will prove an effectual remedy, and another commoner plan is to put some treacle and moist sugar into a bell-glass, damping the latter, and they will be enticed to the trap, and may readily be got rid of. Small pieces of sponge soaked in a sweet substance are also good traps.—C. T.

INDOOR PLANTS.

3394.—**Culture of Pelargoniums.**—The old-fashioned show Pelargoniums are not nearly so well grown generally as they were about thirty years ago. The reason for this, they have gone out of fashion and are thus neglected. In the old days a house was usually given up to them, and in its arrangement of etages, &c., the plants were placed in the best possible position for making sturdy growth. A light, moderately warm, sufficiently ventilated house is essential to do them well, and with proper convenience in this respect, and some good holding loam freely enriched, there should be no difficulty in growing good, well-hloomed specimens; but, at the same time, it does require a considerable amount of skill to have them ready on any particular day for the exhibition tent. It will take three years to grow a fairly good exhibition Pelargonium, say, a yard across, but when the framework of the plant has been obtained it is quite possible to keep it in good condition for several years. As a rule, a yearling plant may be bloomed well in a 5-inch pot. When the flowers fade the plants are placed in the open air to ripen, less water being given to assist the maturing process. About the end of July or first week in August the plants are out down to within a couple of eyes of the base, and are kept dry till the eyes start away. When the young shoots are an inch long the plants are shaken out and repotted in clean pots usually of the same size. In winter they are kept on shelves near the glass in a warm greenhouse, with a night temperature of 50 degs. or so. Watering all the winter must be carefully done, keeping the roots generally moist, but not rashly using the water-pot. In January or February shift into the flowering-pots, which may be 8½ inches to 7 inches in diameter, according to size and vigour of plants. Use rough turfy compost, and pot very firmly. I always think Pelargoniums require to be potted as firmly as hard-wooded plants. Commence training in good time by opening out the shoots, either by linking them down to the rim of the pot or by placing in a few small stakes. Use the syringe freely on fine days in spring, but always have the foliage dry before night. Fumigate in anticipation of the flies, and give liquid-manneo when the pots are filled with roots. The second year the plants will require larger pots, but otherwise the treatment will be the same.—E. H.

— These are so easily cultivated that the treatment must have been wrong if they are not doing well. Established plants after flowering need a season of rest. They are kept comparatively dry at the roots, and may be placed in the sun out-of-doors in June and July. Cut them down in August when the roots are quite dry; this prevents bleeding from the cut portions. Water them in two or three days, and they will start strongly. I leave them out-of-doors until the shoots have grown an inch or two, and they are after that taken in to be repotted; the roots are greatly reduced, so that the plants can easily be repotted into a size smaller than they were growing in before. The plants when growing should be placed near the roof glass of an airy greenhouse, and they must be kept clear of green-fly by fumigating and from mildew by dusting with dried flowers of sulphur. The potting-soil should be formed of four parts loam, one of leaf-soil, and one of decayed manure.—J. D. E.

3411.—**Arume not flowering.**—The treatment has evidently not been right; in fact, it was wrong to out them down. When the leaves die off they must be removed, but at no stage of the plant's growth should be out down. The summer and autumn is the time for the plants to make their growth. I encourage them to the open air in May, and as soon as they are established plant them out in the

open garden. They like plenty of water, and to make sure they are not neglected, I plant them in Celery trenches. They will make strong, vigorous plants, and are but little trouble. Dig them up and replot them in September, when they will speedily begin to grow freely and produce flowers abundantly during the winter and early spring in a warm greenhouse. They like rich, open soil, and plenty of water when growing.—J. D. E.

— These plants should never be out down nor yet dried off. Keep them growing all the year round, if possible—in summer with rich soil and plenty of water, and during the winter in a moderate warmth, and they can scarcely fail to flower well. I always find that after having been planted out-of-doors for the summer (in rich soil and kept well watered, of course) and lifted and potted at the end of September, they burst into bloom almost directly with the aid of a genial warmth and continue to produce flowers at intervals until late in the following spring. Do you give them water enough?—B. C. R.

3393.—**Cyperus alternifolius variegatus.**—This is a delicate or "miffy" subject, and requires very skillful culture to do well. I think it grows best in sandy loam and peat, and it should be kept in a mild stove or intermediate house, with a constantly humid atmosphere, light shade, and a regular supply of water at the root. Try watering it with a weak solution (half an ounce to the gallon) of nitrate of soda once a month.—B. C. R.

— This plant requires rather lighter soil and better drainage than the green-leaved form. Probably your soil is too heavy; try rough sandy peat and leaf-mould. If the soil gets sour the leaves will die off in the way described.—E. H.

3408.—**Gloxinia seedlings.**—If the pots the plants now occupy are becoming filled with roots they should have a moderate shift at once, say into 3½-inch or 4-inch pots, as growth will now be more active. Use a mixture of peat, loam, leaf-mould, and sand, and drain well. Keep the plants on a shelf or high stage near the glass in a moderately warm and constantly humid atmosphere. The temperature of a cool stove suits them well at this season. Give a free supply of water as soon as the roots are fairly at work again, and when sufficiently advanced, shift the plants into 6-inch pots. In these they will bloom well, especially if some weak liquid-manneo is afforded once or twice a week after the roots have filled the pots. Shade lightly from direct sunlight at all times, and ventilate moderately in mild weather only.—B. C. R.

3390.—**Choice Primulae for show.**—The method suggested—that of keeping the plants over till the second year—is undoubtedly the way to get large plants and an abundance of bloom, but the plants are not so shapely as those from seed sown the first season, and if sown in March they can be got 18 inches to 24 inches across by November. You should pick all the flowers and buds off some of the best of the plants now in bloom, selecting two or three times as many as you wish to exhibit, as all will not do equally well. After giving them free ventilation remove them to a cold frame, matting up well on frosty nights. At the end of May remove them to a lightly shaded position out-of-doors, and always keep moist. About the end of June replot them, and when established and growing give them a shift into 8-inch or 9-inch pots, and you will have glorious masses of bloom presently.—B. C. R.

— Many persons grow Primulae the second year, and exhibit them successfully; but they are often beaten by those who grow them well from seed the same season. It is easy enough to grow two-year-old plants. Keep them near the glass after flowering in a heated greenhouse, and turn them out into ordinary garden frames in May. They pass through a sort of resting period at this time, requiring but little water. Replot them about midsummer, and grow them on in the same way as seedlings of the current year. I would grow some both ways, and see which are best.—J. D. E.

— When Primulae are sown early in February, and grown steadily on, they will be a large size by November. Still, if Primulae are treated in the same way as Cyclamens usually are now—i.e. the seeds sown as soon as ripen in June, and the best of the plants

selected for growing on—they will, if well done, make very large plants in 7-inch or 8-inch pots by the second autumn. When very fully developed plants are required, I have sometimes pinched the flowers off the late-sown plants and kept them growing all the winter. The same thing is sometimes done with Double Primulae when very large specimens are required for a particular purpose. Still, this does not alter the fact that very useful decorative stuff can be grown in fine seasons from seeds, and though it may seem a wasteful method, I believe the majority of cultivators do throw the old plants away and raise young plants annually. Plants which have exhausted themselves by flowering, and possibly also by seed bearing, lose colour and are not always so useful as young plants.—E. H.

3404.—**Asparagus plumosus.**—Seedlings are much more easily raised than plants from cuttings, and they grow and do better in every way. Sow the seed in heat, and grow the plants on quickly in a cool stove temperature, with abundance of moisture both at the root and in the atmosphere. The difference between the ordinary *A. plumosus* and *A. p. nenus* is not great, the latter being merely a selection of the most compact growing form. Even the latter, if planted out and heated liberally, will "run away" sooner or later, and for cutting I should prefer the larger form, as it grows more quickly and strongly. Train it on wires near the glass.—B. C. R.

3395.—**Azaleae after flowering.**—When these have finished blooming "Beginner" had better first pick off the seed-pods, or these will draw much nourishment from the plants. The next question is—do the plants require fresh potting? As a rule, amateur overpot Azaleae. Unless badly drained, or in very small pots, they will only need a dressing of pure peat-sock—say half an inch deep in a 32 sized pot carrying a fair-sized plant. Keep them in a warm and moist greenhouse temperature, frequently syringing them overhead, and taking great care that they do not suffer from drought. This point will need close attention, because the root is very deceiving. I would prefer them to go out-of-doors for a short time in the autumn, as the air and dews help them so much. Do not bring them out too suddenly, nor stop their genial treatment until the growth is somewhat developed. From the early part of August until the middle of September they will be quite safe out-of-doors. Azaleae do not mind a cold night so long as their growth is matured, and no more than three degrees of frost touches them; in fact, cold, dowy mornings help them very much at this latter stage.—P. U.

3382.—**Treatment of Azalea mollis.**—These always produce the healthiest young growths from just under the flower-trusses, and unless the flowering-shoots are very long and straggling I would not advise your cutting them back. The earlier growth is made and matured the better will be the results next season. Keep the plants in a genial atmosphere until June. Amateurs seldom study Nature sufficiently, and do not bear in mind that the time such forced plants are out of flower must naturally correspond with warm summer weather outside. Yet they frequently neglect to afford their plants anything approaching natural treatment after their first flush of beauty is over. Any plant that has been excited into bloom prematurely must not be turned into extreme cold while still in full growth. You should afford them ample protection until the end of June, when they may be planted or plunged out-of-doors in a warm border. Here the growths will mature and set flower-buds for next season. These satisfactory results cannot possibly be obtained if the plants receive a severe shock directly after flowering is over and much young growth is active.—P. U.

3317.—**Primula obconica.**—Pieces of the old plants may be potted singly and grown on as before, but such divided plants never do so well as seedlings. The best sort for this species is a nice, free, or sandy loam, with a third each of leaf-mould and old hot-bed manure; if the loam is at all rough or coarse, add a little peat. Drain the pots well and make the soil firm. It succeeds best during the winter in a light and rather well ventilated greenhouse at 45 degs. to 55 degs., but in summer a cool and shady position outside must be given it. Keep the soil always moderately moist.—B. C. R.

ORCHIDS.

BEST WINTER-FLOWERING ORCHIDS.

Ceologyne cristata.

This plant (flowers of which are here illustrated) is now too well known to need much description. It is a magnificent Orchid for winter blooming; it should be grown in a cool stove, and in the autumn placed in a little extra warmth to finish up the bulbs and induce them to push out their racemes of flower, which in the sepals and petals are pure-white, stained in the lip with orange. There are now numerous varieties of this species which differ more or less in the breadth of sepals and petals, that known as the Chatsworth variety, sometimes called maxima, being the best. In the variety Lemoniana the flowers are broad, as in the Chatsworth variety, but the lip, instead of being broadly stained with yellow or orange-yellow, is of a faint pale yellow;

flowering plants should be taken into a cool-house with a dry atmosphere. Here they may be allowed to remain all through the season, and until the young shoots again show signs of life, when the plants should be removed to warmer quarters and a moister atmosphere. It is an Orchid which I used to grow in quantities upon blocks of wood, and in the temperature of the cool-house all the summer, keeping them nearly quite dry; and I used to flower them freely in or about the month of April or May, but I found if they were too late in the season before the flowers appeared, that they did not last long, but they were soon past and gone, and that plants that flowered early in April lasted in bloom better. The culture of Orchids upon blocks of wood, as used at the present time, I do not like, because I do not think it is congenial; but in the place of blocks of wood, I recommend the use of small earthenware pans or baskets, and into one of these plant the

her plants of it are now flowering beautifully. She has three plants bearing nine spikes of blooms, one of which she sends me, and hopes to see a note of it in GARDENING, and she adds "it ought to be grown by everyone having a stove." This last statement I heartily endorse, and I have often wondered why persons with the accommodation of a stove-house do not grow many of these small growing Orchids. *Angraecum citratum* was first brought home from Madagascar now nearly thirty years ago by the Rev. Mr. Ellis, and it first flowered with Messrs. Veitch of Chelsea, and it remained a scarce plant for some years in our collections, but the Messrs. Low now have a great stock of it flowering beautifully; but I noticed when recently at their establishment the numbers were considerably less than they were some two years ago, so that the plant has evidently been drawn upon largely. I remember Mr. Ellis telling me that this Orchid is very common in its native country, and that the flowers are much used by the natives for personal adornment. It grows in the coast-line, that portion of the country which is so inimical to the health of Europeans, and is found upon the under shrubs, always in the shade. Here it abounds; but from the fact of its being a small plant, and that it is always being in a wet condition, it has been hitherto found a somewhat difficult plant to import in a good condition; but yet we have now got it well established in this country, and it is fairly reasonable in price. This plant should be well drained, and planted in living Sphagnum Moss, carefully removing any that becomes dead or sour, for although it likes an abundance of water, nothing of a dead or sour nature must lie about its roots. Place it in a small hanging earthenware pan or basket, and place it in such a position where the sun does not shine upon it; yet I have observed when exposed to the influence of the light the flowers come much whiter than the plants in the shade. The raceme is about 6 inches to 9 inches in length, the flowers being dense, and furnished with a long slender spur. They are white with a pale straw colour pervading them; but in the deep shade they are of a dull citron-yellow, which is their colour at home in their native home. I have found it to revel in water during the summer months; but I have always kept it well drained, and during the winter, although a considerable reduction is necessary, the plants must be kept nicely moist.

MATT. BRAMBLE.



Flowers of *Ceologyne cristata.*

DENDROBIUM LUTEOLUM.

SOME flowers of this plant came to me from "Jane Beckett," who says a friend gave them to her, and told her he had brought them from Rio. She asks for the name, and wants to know something of its treatment? Well, in the first place, I think "J. B." must have fallen into an error in making the assertion that her friend told her he had brought this species from Brazil, because there are no *Dendrobiums* in that country. Labels are very easily transferred either by accident or otherwise, and if a person is not acquainted with the distribution of genera and species it leads to an awkward episode. Now, for instance, this *Dendrobe* comes from Burmah, whence it was introduced by the Messrs. Low, of Olispton, with whom it first flowered in the spring of 1864, or nearly thirty years ago. The plant has slender, erect growth, bearing deep-green leaves, which are persistent until after the flowering season is over. The flowers are produced on short racemes, usually in pairs; sometimes, however, these are produced together, and I have seen even four borne upon one raceme. These are about 2 inches across, and of a pale yellow or soft primrose colour, faintly streaked with red on the lip, and of a pleasant fragrance. Besides this, the typical plant, there is a variety called *oblongocentrum*, which does not differ much, but it has some greenish, short, woolly hairs on the centre of the lip, and there also a stain of orange colour. Both plants thrive under quite the same treatment. It should be grown in hanging baskets, which require to be well drained, and the plants should be well exposed to the sun and light, shading only from the hottest sun through the middle of the day; and it must be kept well supplied with water, both overhead from the syringe and also to the roots. They should be potted in a mixture of good brown mould peat-fibre and chopped

MATT. BRAMBLE.

ANGRÆCUM CITRATUM.

FROM time to time I am surprised by some of my readers sending me blooms of plants which I should not have thought of recommending to their attention, and this is one of them, not because it is not a beautiful species, but because it takes a great deal of attention, and likes warmth and moisture all the year round, and would not be showy enough to please the majority of growers. But here I have flowers of this plant from one "Bessie Lookwood," saying

whilst in the variety *alba* they are of the purest white, without a spot of any colour. It is found growing wild in Northern India at an elevation of 5,000 feet to 8,000 feet. M. B.

DENDROBIUM CAMBRIDGEANUM.

IT is now over sixty years ago since this plant first flowered with Sir J. Paxton at Chatsworth. It had been gathered the year before by Mr. Gibson when collecting plants in Northern India for the Duke of Devonshire. A flower of this Orchid is sent me by "Nemo," of Glastonbury, for a name, who states that he has a small plant with thirty blooms, for which he may be thankful. The rich, golden-yellow flowers, with a deep, velvety, blackish-purple blotch at the base of the lip, will make the house gay and cheerful for a short time. This plant, which is more correctly named *D. cobretatum*, is one of the kinds which flower from the young growths before they are fully matured, and with the green leaves upon them; and after

Sphagnum Moss, but not too much of it, for I find this plant to grow for the best when extra well drained and with but little soil about its roots. As the growths ripen the plants require to be moved to a cooler position, where they may be dried off and rested, but by no means allow the bulbs to shrivel, or you may have great difficulty in restoring them; but having nursed them through the winter with care restore them to their summer position about the beginning of the year, and about this time, or even later, the flowers will appear in great abundance. I think this is about all I know of *D. luteolum*, and though it cannot lay claim to being one of the showy species from this land of Dendrobiums, it may fairly be called a very pretty and a most interesting plant, and it flowers, too, at a very dull time of the year.

MATT. BRAMBLE.

DENDROBIUM LINAWIANUM.

HERE is an old plant which was first introduced to our gardens just upon seventy years ago, and in spite of the number of plant-collectors that have traversed the East, no one appears to know the exact spot from whence it comes. It is said to be a native of China, but that is a large country, and in days gone by no one would be able to reach some parts of the country that they can now. The plant, from being said to come from China and Japan, was confounded by Lindley with, and named by him, *D. moniliforme*, and under this name it was abundant in collections in my younger days, when it was much prized for its beauty and for its early flowering. In growth it much resembles *D. nobile*, but the bulbs are more compressed and flatter, and I am asked by "J. Macfarlane" to tell him if it is a *nobile* without the spot at the base of the lip? Here again is another instance of the long life of Orchids, the species in question having never been known to have been imported but once or twice, and that some sixty years ago; but we have plenty of it growing in our gardens to this day, and growers too that do not know it when they see its flowers, these being borne in twos and threes together on a short erect raceme. They are of a rosy-lilac or cerise, the centre of the lip white, and having two crimson spots near the centre. I have had this species blooming at Christmas, and also in the month of May, but not from the same specimens; but from plants that had been purposely retarded the May flowers were produced, whilst the earlier ones were borne by plants that had been forced. This plant is much like *D. nobile* in general appearance, and yet one can easily pick it out from amongst the last named, and it thrives well under exactly the same treatment. *D. moniliforme* is now in cultivation. It is a small white-flowered plant, not nearly so handsome as this species. A very pretty hybrid from *Linawianum* I saw exhibited in the Drill Hall, Westminster. It was called *Burfordiense*, and it was really a charming thing, and I hope to see it again.

MATT. BRAMBLE.

3325.—*Saccolabium Blumei*, &c.—*Saccolabium Blumei* decidedly requires stove treatment, accompanied, however, by plenty of ventilation. This plant grows in thousands on the trees surrounding the Rice-fields in Burmah. During the rainy season the Rice-fields are under water, and irrigation is continued until the Rice ripens, about December, when the water is run off. The evaporation from these fields of water leads the air with moisture, so that with the heavy rains and humid air the plants are kept in full growth up to December; they then pass through a very dry season until the first showers fall, about the end of March. There are, however, heavy dews at night during the dry season, which keep the roots plump. Plenty of water and heat during the growing season and moisture in the air in winter are the best for them. On no account, however, must the leaves be syringed in the winter; the air must be kept moist by damping the floor of the house and stages. This plant does not like the roots disturbed. If the potting material gets sour it should be picked out, and fresh moss, mixed with broken crocks, should take the place of the old material. On no account should peat be used in potting this class of plants. *Dendrobium album*:—This plant growing in quantity on the coffee bushes of the deserted Coffee plantations at

Wella-ghaut, west coast of India. Here the rainfall is enormous—during the rains often 10 inches a day, the annual rainfall amounting to 650 inches. In consequence of this enormous downpour all the Coffee plantations on Wella-ghaut have had to be abandoned, and the roads being overgrown and the country infested with wild elephants, it is very difficult to get into it to collect the plant. This plant therefore requires great heat and moisture during the growing season. During the dry season, January to March, the plant is exposed to the full rays of the sun and loses all its leaves, starting in growth again with the first shower in March.—E. S. BERRELEY, *Speicheley-Bitterne, Southampton.*

FERNS.

HARDY FERNS IN PLEASURE GROUNDS.

IN most gardens there are situations which, owing to perpetual shade through buildings or trees, are found extremely difficult to embellish satisfactorily. Places of this description occur frequently in the neighbourhood of the dwelling-house, and are often a source of vexation, as the majority of flowering and fine-foliated plants will not thrive therein. For such localities hardy Ferns are the most suitable occupants, inasmuch as the self-same conditions which prove so fatal to the well-being of the majority of ornamental plants are just those

the occupants fail to obtain that luxuriance which constitutes one of the greatest charms of the Fern tribe. Although something in the way of hurra, stumps, or sandstone is necessary to keep the soil open, yet this kind of material should be introduced merely to effect that purpose, leaving as great a bulk of mould as is consistent with good drainage. The cheapest material that can be employed is the rootstumps of trees. They are admirably adapted for the purpose, and not only serve to efficiently drain the soil in which they are placed, but appear to retain in themselves a certain amount of moisture, even in very dry weather. Root stumps are often objected to on the ground that they ultimately rot away. That is, however, no detriment in the present case, as by the time they do so the plants will be well established. As regards soil there is no necessity to be particular. If some turfy loam or rough peat can be easily procured, the Ferns will be benefited by an admixture of it. Ordinary garden soil, with some of the roughly sifted portions of the refuse heap, will meet their requirements. No garden can be considered properly furnished without Ferns of some sort, and many a dark, dingy corner may be simply and almost inexpensively beautified by them. Where winter verdure is desired, the evergreen kinds need only be employed. In a general way, however, they should be used with the deciduous ones, as they contrast so beautifully when hurrying into growth in spring. T.



Royal Fern and Male Fern in the garden at Killeger, Killshandra, Ireland.

which enable them to maintain themselves in health and luxuriance. The construction of a fernery is often supposed to entail a considerable amount of labour and expense, and it is in this consideration which deters many from undertaking the culture of hardy Ferns. The Fern tribe is a large and varied one, and if it is desired to cultivate a large variety, then undoubtedly a good amount of forethought and care will be necessary to ensure success. There is, however, a considerably large class which is really hardy in every sense of the word, inasmuch as they will thrive in almost any situation, and require but an ordinary amount of care to be taken in planting. Amongst these are fortunately to be found great variety and exquisite beauty; they are, therefore, all that can be desired for our purpose. Many varieties of *Lastrea*, *Asplenium*, *Scolopendrium*, *Polypodium*, and the Royal Fern will flourish in the most ordinary garden soil, and can hardly be excelled in elegance of form and diversity of growth by the more tender kinds. They may be easily procured at a cheap rate of any nurseryman, and some of them, such as the common *Polypody*, the Male and Lady Fern, are generally plentiful in moist hedgerows, from whence they may be safely removed in early spring before growth commences. These varieties are mostly strong growers; they should, therefore, be planted so that they are not crowded in the way of nourishment. Ferneries upon a small scale are apt to become dried up in hot weather, and

3302.—*Phlebodium aursum*.—This Fern, when it gets into bad condition, takes some time to work round. Warm-house treatment would suit it better. The old discoloured leaves may be cut off; but the plant is a true evergreen, and the green leaves should be allowed to remain till the new growth starts away.—E. H.

3377.—Treatment of Carnations.—A great deal depends on the culture the plants receive as to whether the flower-stems will be stout and carry the flowers up well, but much more upon the variety. Some sorts have weak peduncles—too weak to carry the flowers erect, consequently they hang down. Many raisers of seedlings have merely an eye to obtaining good single blooms for exhibition, and make habit and constitution a secondary consideration only; but this is not what the general public want. Seedlings ought not to be raised either from weakly-constituted varieties or from weak-stemmed sorts that cannot hold the flowers erect. Sorts that hurt the only badly should also be discarded. A few of the best border Carnations to grow are Germanias, Purple Emperor, Mrs. Muir, Rose Celestial, Emma Lakin, Ruby, and Mary Merris amongst selfs. A few of the best flaked and bizarres are Robert Houlgrave, Joseph Crossland, Rifeman, Edward Rowan, William Skirring, H. R. Meyer, James Douglas, Mayor of Nottingham, Matador, Thalia, Sybil, and Jessica.—J. D. E.

The best plan is to grow the plants, from the cuttings or layers always, in the open ground without any protection whatever. By this means strong, stocky plants are produced with stout stems and blooms, which rarely burst their stems.—A. G. SUTTON.

THE KITCHEN GARDEN.

3363.—**Vegetables for show.**—The following will make a good selection of eight varieties (Cucumbers should not be grown in a collection limited to eight varieties): Tomatoes, Peas, Cauliflowers, French Beans, Potatoes, Onions, Carrots, Turnips, Vegetable Marrows, and Cabbages. I have included ten varieties, as it is just possible one or two of the others may not be in first class condition on the show day. I should attach more importance to having first-rate samples than any particular variety; for instance, a first-rate Cabbage or Vegetable Marrow may carry more weight than very inferior Cauliflowers or badly-grown Turnips. Whatever is shown should be as good as can be grown, and a common variety really at its best is of more value in a collection than anything looked upon as choice at its worst.—E. H.

The two kinds mentioned, Tomatoes and Cucumbers, will do very well to be included in a collection of eight; but is the collection limited to eight kinds or eight varieties? because if the word variety is used two dishes of distinct varieties of Peas may be exhibited, or a dish of kidney and a dish of round Potatoes; but in a collection of eight varieties even, the greater number of kinds exhibited the better. I would show good Marrow Peas, Potatoes (a good white kidney), Cauliflowers (three good heads in a dish), good intermediate Carrots, and Onions from autumn-sown seed. Dwarf Kidney Beans always tell well when exhibited in good condition. Scarlet Runners and Broad Beans may be grown for extra.—J. D. E.

—In addition to Tomatoes and Cucumbers the following should be added: Potatoes, Peas, Onions, Cauliflowers, Carrots, and Globe Artichokes.—S. P.

3271.—**Good King Henry.**—I have a bed of the above growing in my garden that has been planted over 20 years. It is planted 16 inches apart each way. I notice that J. D. E. advises it to be planted only 9 inches apart, but it is impossible to grow good roots so close together, as some of mine are over a foot across by the time the shoots are ready for use, and I think it is the most useful and profitable early vegetable we have in the garden. It requires a deep rich soil to grow in.—Q. E. D.

3374.—**Parsley in winter.**—To have a good supply of Parsley in winter, there must be protection in bad weather. One of the best ways of securing a stock is to take up strong roots in August. Cut off most of the old leaves and plant in a very warm position. I have had it do well in a narrow border in front of a forcing house or at the foot of a small wall, or a bed may be planted on a border and be covered with a frame before frost sets in, or sheltered with straw mats. Sometimes a sowing is made in July for winter use. The plants must be thinned out well or the leaves will be small and tender.—E. H.

3375.—**Potato disease.**—A solution of sulphate of copper and lime mixed and applied with a syringe or proper spraying machine before the disease has attacked the plants to any extent will check its farther progress, and ensure a healthy growth and a sound and abundant crop. The best proportions are 22 lb. of the sulphate and 22 lb. of lime to 100 gallons of water; this is sufficient for an acre of ground. The lime must be perfectly fresh and quick, and the sulphate of copper the purest obtainable. The best way is to give one dressing before the disease appears at all on the foliage, say, in the first or second week in July, and a second one about three weeks afterwards. Mix the liquid well, and apply in a fine spray so as to wet every leaf thoroughly.—B. C. R.

3370.—**Onions for show.**—Onions for show should have been sown some time ago. Those who wish to obtain large bulbs frequently sow in gentle heat in February, and when the Onions are 3 inches high harden off, and towards the end of March or beginning of April plant out in row 1 foot apart and 6 inches apart in rows. The ground for Onions must be well prepared by deep digging, and the manure supply must be liberal. If the ground is loose and open pressure must be applied to firm it. I usually tread it over twice. The surface must be dry when this is done. Fowl-manure may be used profitably for Onions at the rate of a couple of bushels to the square rod. This manure is more bene-

ficial on heavy land than light, as it is of a warm nature. When the seeds are sown in the open ground, the same care should be used in the preparation of the land, and the drills drawn 1 foot apart and about half an inch deep. As soon as the Onions appear above ground, dust with soot, and pass the hoe between the drills to loosen the soil and check weeds. When large enough to thin, draw out the smallest and leave the strong plants 6 inches apart. During growth stir the surface occasionally, and use about twice at intervals of several weeks. A light dressing of nitrate of soda, or the nitrate may be mixed with Ichthemic guano, at the rate of six pounds to the rod. It is not generally necessary to water Onions in our climate. Still, it is beneficial if there should come a spell of bright, hot weather to give a thorough soaking of liquid-manure ones or twice as weak as loog as hot weather lasts. Water in the evening, and stir the surface the following day.—E. H.

—The large Onions seen at the summer exhibitions are usually produced from autumn-sown seeds. Those exhibited in Lancashire at the autumn exhibitions are produced from spring-sown seed. The Red Onions are grown of the largest size. A single Onion has been grown to weigh 34 ounces; the white variety to 24 ounces. The seed is sown in January in small flower-pots, a single Onion only being allowed in one of the small pots. The plants are grown on in frames and afterwards carefully planted on richly-manned ground, which is also well trenched to a considerable depth. Decayed pig and cow-manure suite them well; manure from fowl-houses is excellent for Onions, but it is very rich in quality, and should not be put on thickly.—J. D. E.

3373.—**Sweet and savoury Herbs.**—The most useful sweet Herbs are Knotted Marjoram, Basil, Summer Savory, Chervil, Balm, Borage, Pepper, Mint, Pennyroyal, Winter Savory, and Tarragon. Pot or savoury Herbs most in use are Thyme in several varieties, Sage, Common or Spear Mint, Fennel (sometimes used as a sweet Herb), and Parsley, though Parsley is generally grown by itself in some position where it can be easy of access in all weathers. Basil, Knotted Marjoram, and Summer Savory are generally treated as annuals, the seeds being commonly sown in heat in spring, and when the weather has settled down the young plants are pricked out in a warm border.—E. H.

Potatoes for heavy land.—"E. H." says on page 16 that "Myatt's Prolific and Impertator are two of the best Potatoes for strong, heavy land." My experience, at any rate, of the latter is just the reverse. Myatt's I have never grown to any extent, but of some score of the leading varieties Impertator gave the worst results of any, the land being a very stiff clay loam on a subsoil of pure clay, but well worked to the depths of nearly a foot. Even with good culture Impertator produced about three tubers to a root only, two of which were diseased. I do I have given it up altogether. The much-vaunted Bruce also turned out very badly. Magnum Bonum, growing alongside it, producing fully three times the crop, and sounder and of better quality also. The best Potato I have ever grown on this soil is Reading Giant, which turned out at the rate of eighteen tons per acre, affording fine large tubers almost perfectly free from disease, and of excellent quality when cooked. Satisfaction (Sutton's) also does remarkably well here, a large proportion of the tubers running 1 lb. to 1 1/2 lb. each, perfect in form, of delicious quality, and capital keepers. Beauty of Hebron crops well, and the new white variety even better. Duke of Albany yields abundantly, but keeps badly, and is of such inferior quality that I do not now grow it. My best early kind is Sharpe's Victor. All the Ashleas get so badly diseased as to be almost useless.—B. C. R.

TREES AND SHRUBS.

3369.—**Araucaria imbricata.**—It is too late in the season now for you to have much success in raising this grand Chilean Pine from seed in a former garden. I saved, from six or seventeen bushels of seed, annually, and raised many thousands of seedlings.

After several trials, both of growing them in boxes with slight heat and in cool pits, together with sowing in autumn and spring, I decided there was a great advantage in sowing the seed as soon as possible after it was matured. Years ago, when imported seed only was to be had, and the transport took much longer than it does now, one often got only a small percentage to grow. As soon as the cones burst and seeds drop, they will commence to germinate at once if placed in sandy loam. I found a cool pit much the best structure. Use a deep soil of an open nature, and press the seeds down deep enough to cover the wing. Of course you must place them point downwards. Mice are the only enemies you need fear. Do not keep them close except during frosty weather, when a mat thrown over the frame is all that they need. Many Araucarias bear cones, but unless the two sexes are adjacent, they do not get fertilised. A good seed weighs as much as a large Acorn, and even in sound cones there are a great number of thin, wafer-like seeds that are of no use whatever. The cones mature during the second autumn after impregnation. On no account use heat, as you then make the seedlings tender and gain hardly any time. Likes most of the Pines, this Araucaria roots very deeply in the seedling stage.—P. U.

—Sow the seeds now in sandy peat, leaf-mould, and loam, in pans or boxes, and place in cold frames. Cover about one-eighth of an inch. Keep equally moist and shade from hot sunbines till seeds germinate. When young plants appear ventilate a little at first, and increase the ventilation gradually.—E. H.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in *GARDENING* free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of *GARDENING*, 27, Southampton-street, Covent-garden, London. Letters on business should be sent to the PUBLISHERS. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as *GARDENING* has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and manure vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in *GARDENING* should mention the number in which they appeared.

3425.—**Growing Balsam.**—Will someone please to give me some information about the growing of Balsam?—EXETER.

3424.—**Planting Clematises.**—I have just planted three Clematises, and at the time of planting watered them. Is this right?—A. M.

3427.—**Rabbit-manure.**—Will someone be so good as to let me know if Rabbit-manure is a good thing for flowers?—CONSTANT READER.

3428.—"Anapargus" Ferns.—I want to propagate some "Anapargus" Ferns. How should I proceed? What heat do they require?—A. READER.

3429.—**Treatment of Ferns.**—Should Adiantum and Pteris Ferns be put, when at rest, into a lower temperature than they are grown in?—A. READER.

3430.—**Annals for show.**—When should annuals like *Conium*, *Aligostea*, *Coppies*, &c., be sown in the open to be ready for a flower show on August 10th?—A. Y.

3431.—**Keeping rats out of a garden.**—Will anyone kindly advise me as to how would be the best way of keeping rats out of a garden? Is there any other means except poison?—E. T.

3432.—**Peach tree losing its flowers.**—I have a Peach tree, *Lata Admirable*, that is dropping its flowers, which are fully expanded. Would anyone kindly tell me the cause of it?—J. E., *Fortyshire*.

3433.—**Grub in Apple-blossom.**—Would someone kindly tell me of a good remedy for stopping flies from blowing Apple and other kinds of fruit blossom so as to cause the grub in them?—ORANTH.

3434.—**Early Chrysanthemums.**—I shall feel obliged if anyone will give me the names of twelve Japanese Chrysanthemums, which will flower out-of-doors not later than the end of September?—B. S. T.

3435.—**Constructing a Tomato-house.**—I am just constructing a Tomato-house. Would anyone kindly tell me how high the beds should be in the inside, and if the hot-water pipes should run below the beds or outside the beds? I will have a walk through the centre of the house. Should the pipes run round the walk, and how high should they be from the ground? Full particulars will much oblige.—JAMES MONTGOMERY.

3435.—Garrya elliptica.—I want to have a Garrya elliptica to train on a south wall. When would be the best time to plant, and when might I expect some catkins on it? I should buy an established tree from a nurseryman.—E. H. S.

3437.—Height of Cupressus Lawsoniana Intea.—What is the average height of the largest of these trees? I have one 12 feet 7 inches. If anyone who has larger ones would give their height it may be of interest to others besides.—H. S. S.

3438.—Nerine sarniensis.—I have two roots of Nerine sarniensis which have never flowered, though I have had them five or six years. The leaves come up well, and they are rooted in good soil. Should they be reported each year?—E. H. S.

3439.—Clematis (Constance Elliott).—I have a Passion-flower Constance Elliott; it made about 9 feet long and bore flowers at every point last year. Should I cut it back or let it remain as it is—it is beginning to start again into growth?—O. M. S.

3440.—Weeds on a gravel-path.—I shall feel obliged if someone will kindly tell me what is the best thing to use to kill weeds on a gravel path close to a box edging? Is carbolic acid a good thing, or would it injure the Box? I do not want anything injurious to animals.—C. S.

3441.—Tropolium therosum, &c.—I am anxious to know if Tropolium therosum and Tropolium speciosum are one and the same, as I am under the impression that they are? Are they propagated from division of the roots or seed? If the latter, will they flower the first year?—E. H. S.

3442.—Ferns, &c., in a greenhouse.—Will someone kindly tell me why the young fronds of my Maldeohair Ferns turn brown? My greenhouse is on the north side of the house, is heated with hot-water pipes and kept about 50 degs. I should also be glad to know what flowers will bloom best in it?—M. C.

3443.—Fruit trees on Oak fencing.—Will someone kindly give his experiences as to the kinds of Apples, Pears, or Plums that do best when trained on such fences, aspect east and west? Although nominally close fences there is considerable draught between some of the palings which I fear may interfere with the setting of the fruit.—B. W. L. K.

3444.—Chrysanthemum cuttings.—Would "E. M." or someone kindly inform me of the cause why so many of my Chrysanthemum cuttings have started the crown bud? Should the bud only be removed leaving the other three shoots to grow on, or pinch back the plant to a lower joint? Will it be the same when an exhibition bloom? I cannot afford to throw out all the offenders as of some sorts every cutting (4) has played this trick. Cuttings were struck in December and January in the usual way. Route d'Or, Forey's, Stensted White, and Deleane are the principal delinquents.—E. H. P.

3445.—Fear Bishop's Thimble.—Will anyone kindly inform me why my Bishop's Thimble rose on the tree before they are ripe? I have several trees of them in my garden; the trees look very healthy, and there is, as a rule, an abundance of blossom on them; but invariably when the fruit has nearly reached its full size, and, of course, some time before they are ripe, the majority of them commence to rot at the eyes, and soon those which do not rot on the tree commence to rot at the eyes after being picked a short time, and before they are fit to eat. What should I do to remedy this?—K. Y. Z.

3446.—Height of Chrysanthemums.—Will "E. M." kindly tell me about what height the following Chrysanthemum plants grow to, measuring from the bottom of the pot: Mons. Baroed, Bouras d'Or, Bouquet Felix, W. Robinson, roseum superbum, Maiden's Blush, Val d'Andorre, Peter the Great? I intend stopping these twice to get a nice lot of blooms. Also Miss. Marthe, Golden Mlle. Marthe, Elise Dordon, Black Douglas, Automne, Marie Stuart, and Mms. Montale. To be grown six blooms on a plant. All of the above plants were rooted by the first week in March. Also what is best to use for worms in the pots? I was very careful last year about trying to keep them out, and kept them standing on boards; but when I turned the plants out there were fine fat ones, that I supposed had been gorging my stimulants that I intended for my plants. I heard once something about lime-water being used for it, but I do not know what strength, or how often it should be applied. I shall be much obliged for advice.—W. D.

3447.—Failure of hot-bed to heat.—Will someone kindly enlighten me as to the reason of my hot-bed not heating? I have had a new brick pit built, size about 7 feet by 6 feet, and 4 feet deep, which I have had filled with horse, pig, and cow-manure (principally the former), the whole being well trodden down. This I have done three weeks ago, and as there was absolutely no heat arising from it at the end of two weeks (nor had there been at any time during that period), I decided to try a plan recommended by one of your readers—viz., to take out nearly half of the manure and out a lot of Grass and put in the middle, replacing the manure on the top. Strange to say that, although the manure when placed in a heap on the ground showed unmistakable signs of heating (in fact, it got quite hot in the course of twelve hours), after the bed had been remade, with the Grass in the middle, it has shown no signs of heating whatever. Will anyone tell me where the fault is? Here I trodden it too much, or put in the wrong kinds of manure, or what?—X. Y. Z.

3448.—Roses all the year round.—I am anxious to be able to out a few Roses all the year round. I have plenty of garden space protected from north and east to grow outdoors. Roses outdoors should, I fancy, take me on to October. In a lean-to greenhouse facing south (30 feet by 12 feet) I have a Gloire de Dijon and Marechal Niel, which give me flowers at end of February. It is fitted with heating apparatus, which I only use in very cold weather. Then I have a small house (16 feet by 7 feet) in which I could force pot-Roses to bloom from November to February inclusive. Will "J. C. C." or "P. U." tell me how to treat pot-Roses for my purpose? Should I let them flower now? I suppose that I may put them out of doors in July. When should I prune them, and what should I take them into, first, the cool, and second, the hot house? I suppose that I can keep some in the cool house and transfer to the hot when some of those in the

hot-house have finished flowering. I have bought plants of most varieties recommended in GARDENING lately, but will get any other kinds if I can accomplish my desire to be able to cut some, say every Sunday in the year!—A. M. K.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

3149.—Indian Filbert (J. Muir).—Yes, this is the name the seeds are known by, and they are the seeds of a Leguminosae plant called Eotada scandens, which climbs to a great height, and the pods sometimes reach 7 feet and more to length. I do not know if it is in cultivation.—J. J.

3150.—Odontoglossum Malus.—J. Ebdon sends a flower which is evidently this plant, but I do not consider it at all a pretty flower; at any rate, I have seen much handsomer forms with a better lip. The plant named Malus usually produces a branched spike, or it does, say, when the plant becomes sufficiently strong, and so, perhaps, may yours when it becomes robust.—M. B.

3451.—Monkey Bread.—J. Muir asks what is that it is the fruit of an African tree called Acaouine digitata, which grows nearly as thick as it is high. It is considered to be the oldest tree upon the earth; some existing specimens are said to be five thousand years old. The fruit is oblong, nearly a foot long. Another species of this family is found in North Australia, but its fruits are very much smaller. I do not know if they are in cultivation.—J. J.

3452.—Easter Palm.—J. Muir says I should like to know from what tree the Palm usually worn at Easter is obtained? The flowers that are worn so much at Easter time and vulgarly called Palm are the catkins of the common Goat Willow (Salix caprea). I saw it last week about the neighbourhood of Dorking, Leatherhead, and the neighbourhood, very gay and beautiful. There are many species of Willows which are natives of those islands also, but they are a difficult genus to make out. The present one is a very common plant.—J. J.

3453.—A large Palm.—J. P. M. says she has a large Palm in her greenhouse which must be removed. She sends a leaf and drawing to enable me to name it, by which I see that it is no Palm at all, but a very fine specimen of Dacrydium australe, and I have little doubt but it would live outdoors in a well sheltered position in the Co. Waterford; but even if you do not like to risk this plan you may cut the stem partially through, taking out a good cut as near to the ground as possible, and so to the stem a considerable mass of Sphagnum Moss, keeping the always sopping wet. Do not allow it to become dry for a single minute and you will be rewarded by its sending out roots late in the year. When this occurs cut it a little more at different times till at last you take the head quite off, when it may be carefully potted and kept very moist and shaded for a time, but it will soon root and do well, and you will have a handsome plant minus the bare stem.—J. J.

NAMES OF PLANTS AND FRUITS.

* Any communications respecting plants or fruits sent to names should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C.

Names of plants.—Jas.—We cannot name from such scraps.—J. Atkins.—1, Odontoglossum Ceratotesi deorum; 2, Lycaste macrophylla; 3, Mexilista grandiflora; 4, J. T. M.—1, Acacia Dromaeoides; 2, Leucopogon lanceolatus; 3, is one of the hybrid Rhododendrons; it looks like Duchess of Edinburgh.—C. Hodgson.—1, Davallia dissecta; 2, Lactaria glabella; 3, Adiantum formosum; 4, Selaginella larocensis; 5, Selaginella formosa; 6, Cyrtium talostium.—J. K. Evans.—1, Theophrasta imperialis; 2, the Loquet (Eriobotrya japonica); 3, Micropleia hirta orientalis; 4, Antherium variegatum; 5, Lygodium japonicum; 6, Nephrolepis Duffi.—Nemo.—1, Vealei japonicum; 2, Dendrobium coherentum.—J. Broom.—1, Dendrobium nobile Cooksoni; 2, Avides Fieldingi; 3, Dendrobium Hittorferi; 4, Odontoglossum malus; 5, Oeodidium divaricatum; 6, Trichopilia corvilli.—G. D. B.—1, Davallia solida; 2, Dorella Mooreana; 3, Adiantum haplidulum.—J. Barclay.—1, is an ordinary form of Cattleya Trianae.—J. Johnston.—1, Sophronitis cœnea; 2, Lycaste aromatica; 3, Dendrobium Pleasardi.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

Mrs. V. S. Knox.—Apply to Messrs. J. Backhouse & Son, York.—Enquirer, St. Ives.—Wireworm is the cause of the mischief. Bury some pieces of Potato in the ground and mark the spots with stakes, and take these pieces of Potato up occasionally and destroy the wireworms that rot will find there congregated.—A. Hunter.—1, Vines and Vine Culture, by A. F. Barron, price 6s. 3d., post free from this office.—Wilsden.—Keep the greenhouse at a temperature of about 50 degs. to 55 degs. by night, and about 60 degs. in the day-time, and the Vines, &c., should do well.

Catalogues received.—Pansies, &c. W. Paul & Co., Bridge of Wair, N.B.—Seeds, &c. Messrs. Vilmorin-Andrieux & Co., 4, Quai-de-la-Mégisserie, Paris.—Hardy Trees and Plants. Mr. F. W. Kelsey, 145, Broadway, New York.—Agricultural Seeds. Messrs. E. P. Dixon & Sons, 16, Wellington-street, Hull.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of new and rare flowers and good fruits, and vegetables for drawing. The drawings so made will be engraved in the best manner, and will appear in due course in GARDENING ILLUSTRATED.

POULTRY & RABBITS.

QUERIES.

3454.—Pallet containing to lay miniature eggs.—Early this month I bought some pullets. One of them (a full-sized healthy bird) began to lay lately, and lay almost every day, the size of each egg being a little larger than a marble and without any yolk. Weight, three to the ounce. I have now over a dozen all exactly similar. Please say is this an unusual case, if there is any chance of the size increasing, or if I can treat her in any way to make her lay the ordinary-size eggs?—P. M. S.

3455.—Poultry keeping.—Would someone kindly give me a little information on poultry-keeping. My object in buying what I have was to always have a supply of eggs. I have a large garden and a good pen, with three cocks and ten hens. I intend reducing the cocks to two. Should I separate them out? What should I feed the hens on for laying, and the quantity and number of times to feed per day? The chickens I bought them from is a friend, and he says they are very big—Minorca, but there are some white ones among them. Are there any white Minorcas? I have had them ten days, and only had two eggs. I don't know if I fed them enough or not. There is always a great rush whenever any food is taken them. I give them plenty of water, but they make it dirty. Must the vessels be spotlessly clean when fresh water is given?—Zoo.

REPLIES.

3366.—Hens not eating.—"B. C.'s" hens were suffering from a severe form of diphtheritic roup or canker, and I consider that he noted wisely in killing the birds at once. By adopting this course he has probably prevented the disease spreading, and may thus have saved the remainder of his flock. The temporary loss of eggs—though not easily explained if the other fowls have not taken the disease—is a matter of trifling moment if the stock can be spared. I cannot this week go into particulars as regards treatment, nor is it necessary, under the circumstances. I may, however, say that whenever a disease of this kind breaks out it is almost the best plan to isolate the fowls at once, and thus check its progress. What has caused the present outbreak is not easy to say, if the sanitary arrangements are good and "B. C." has purchased no new stock. I would advise the querist to examine the fowl-houses very carefully and remedy any defect which may exist. I have recently had a visitation of this disease, a newly-purchased cockerel falling a victim soon after his arrival, and a hen soon followed suit. This, I am of opinion, was introduced by the cockerel, although he came from a large breeder-dealer, and was bought at a high price. A second hen I killed, but was more fortunate with another.—DOULTON.

3368.—Feeding Rabbits.—"Burton" is using foods which are far too heating for young Rabbits, and to this I attribute his failure. Instead of Bean or Barley-meals I should use crushed Oats, and for a change give a little Carrot or Swede Turnip. If any green stuff can be got, so much the better. In most gardens there are a few Cabbage-leaves to be met with. The Rabbits, too, are too early, and I am inclined to think are too delicately bred. At any rate, there must be something unusual amlen when so many die together and the survivors cannot be induced to eat.—DOULTON.

3367.—Ducks not laying.—I can say nothing as to the absence of eggs beyond suggesting that the birds may be too fat or belong to a bad laying strain. Handling the Ducks would convince the querist on the former point, and enquiry amongst those who know how the birds are bred should satisfy one as to whether the number of eggs produced so far is below the average. A small run would not be likely to choke laying altogether; indeed, last year I knew a cottager with a small run whose birds were very prolific. Nor would the company of hens be a drawback, provided the birds were well supplied with food.—DOULTON.

"Gardening Illustrated" Monthly Parts.—Price 5d.; post free, 6d.

"The Garden" Monthly Parts.—This journal is published in neatly bound Monthly Parts. In this form the coloured plates are best preserved, and it is most suitable for reference previous to the issue of the half-yearly volumes. Price, 1s. 6d.; post free, 1s. 9d. Complete set of volumes of THE GARDEN from its commencement to end of 1892, forty-two vols., price, cloth, £30 12s.

"Farm and Home" Monthly Parts.—This journal is published in neatly bound Monthly Parts, in which form it is most suitable for reference previous to the issue of the yearly volumes. Price 5d.; post free, 6d.

"Gardening Flowers."—Giving descriptions of upwards of thirteen hundred of the most ornamental species with illustrations of their arrangement, culture, &c. With an Appendix, 1s.; post free, 1s. 3d.

—C. J. Barclay, 37, Southampton-street, Strand, W.C.

GARDENING ILLUSTRATED.

No. 735.—Vol. XV.

Founded by W. Robinson, Author of "The English Flower Garden."

APRIL 8, 1893.

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HOUSE & WINDOW GARDENING.

VAN THOL TULIPS FOR ROOM DECORATION.

Few plants are so refreshingly bright in early spring as Van Thol Tulips, and the enormous quantities sold in our flower shops at about this time of year testify to their great popularity. They are so easily cultivated that most of us might supply ourselves with plenty of these lovely blossoms with a very little attention and care. The pots containing perhaps five Tulips, all in bud, just bursting into bloom, which we see in florists' windows, are apt to excite the envy of the amateur, whose groups are by no means so perfect, perhaps marred by a failure amongst the bulbs, or spoiled by the fact that one flower is over before the rest open their blossoms. But the secret of ensuring a perfect potful of Tulips is a very simple one. The bulbs, obtained as early as possible in autumn, are placed thickly—i.e., at intervals of three inches each way, in a shallow wooden box about eight inches in depth, well drained, and filled with very light sandy soil, containing a little leaf-mould but no stable-manure. Here they remain in a cool greenhouse (for they will not bear much foreign in their early stages) until they show well above the soil, when they may be introduced to a temperature of from 50 degs. to 70 degs., this last allowing for sunshine; but green-fly must now be looked for, and sponged off if it appears. A slight bottom-heat, such as may easily be had by placing the box on the heated pipes of a conservatory, will bring them on rapidly, and as soon as the buds can be well seen the bulbs may be selected, and potted up without danger, placing those together which are equally advanced, either three, five, or seven, closely in suitable-sized pots, which need only just hold the plants with as much of the light soil in which they grow as can be made to adhere to the roots. Plentiful watering, and a top-dressing of fresh green Moss will make them ready for the drawing-room. I. L. R.

CYCLAMENS FOR WINDOW CULTURE.

THESE lovely and fragrant flowers are of very easy cultivation, and the best of room plants, for they continue in bloom for many weeks at the time of the year when flowers are most difficult to procure, only needing a warm sitting room window and the absence of gas to enable them to do well. They can now be procured, well set with buds, and will require little beyond a regular supply of tepid water, an occasional cleansing of their leaves, either with a bit of soft, old sponge, and clean, soft water, or by setting the plant in a bath, and giving it a douche from a rose-watering-pot. Cyclamen corms, when once established, will last for years with proper care. Unfortunately most furnishing plants, when they cease flowering, receive no attention, and are allowed to die for want of water, because the beauty is over (or

the present, many people fancying that they should be dried off, which, in fact, does this work most effectually, as the unfortunate plant does not survive the process. The fact is, however, with regard to almost all bulbs and corms (though not so often in the case of tubers, such as Begonias, &c.), that the time after blossoming is the most important period of their existence, for it is then that the embryo blooms for the next season are formed, and this cannot be done without the gradual dying away of the foliage, which acts to the corm something in the way that our lungs do to us, and therefore cannot be suddenly dispensed with. Cyclamen after flowering should still be regularly watered, though not so often supplied as when in bloom, and at the end of May they can be sunk, pot and all, in a half shady border for the summer, a mulch of good leaf-mould and old hot-bed stuff being spread round the corms (which should not, however, ever be entirely covered) to nourish the plants. Here they may stay until September, when the pots can be taken up, the plants taken out and repotted, shaking off all the old soil, and potting them firmly in a good compost (which can be bought ready mixed), of leaf-mould, loam, equal parts, with a little very old manure, and a dash of soot, with enough sand to make the compost light. Drain the pots thoroughly, and set the plants in a sunny window near the glass (if a greenhouse be not available) to start, turning them round daily, so that each side is evenly exposed to the rays of the sun. They will often be covered with buds when taken out of the ground, and should soon begin to open then, if kept in a warm room. It is, however, well to remove them at night, in frosty weather, from the vicinity of the window, and to avoid freezing draughts for them, during the time the room is brushed in the morning, by taking them into a bedroom in cold weather. I. L. R.

3408.—Plants for a flower-box.—There is nothing prettier as a trailer for a window-box than a good variety of Ivy-leaved Pelargonium—Madame Crousse or Madame Thibaut being two of the best. But the plants, to do well, must be carefully prepared before they are put out at the end of May by being repotted now and the ends of the sprays pinched off, so that lateral growth is encouraged. When they have been shifted a week or two, weak doses of soot-water should be given, keeping the plants in a warm greenhouse with plenty of sunshine (or a sunny window will do for them), and these doses of liquid-manure, given at first once a week, can be doubled as the plant becomes strong, so that in this way they should be full of bud by the time they are put out, and will make a bright show of colour all the summer. Plants of Money-wort—which grows a long, straight fringe of golden blossom—alternated with Blue Lobelia, also look well in a window-box, or Fuchsia which have been potted and sharply cut back in spring, and allowed to make long sprays of growth. These can be tied up to a neat stick or allowed to hang over the edge of the box as preferred, and will flower profusely. Tuberosa Begonias, however, of a drooping but well habit (such as are sold for growing in

baskets) are the most striking objects in a window-box, if well grown. They must be gradually hardened to the open air, and supplied with plenty of water, and a mulch of Moss or Cocoa-nut fibre over the surface of the soil in which they grow, for their well doing depends largely upon the network of roots which they form just below the soil, and these dry up in hot sunshine. As "J. Goudge" mentions Caery Creeper, it is not, however, quite clear that he does not mean climber, not trailer, as needed for his box. If so, he might try Lophospermum scaevola, a very pretty pale-pink creeper with handsome foliage; or Eucremocarpus scaber, with bunches of yellow and scarlet flowers. These should be bought as strong plants of last year to do well this summer. Seedlings now put in would be too late to do much. "J. Goudge" should select plants of any of these things which will suit the tints of the Clematis, which may be purple, lavender, or white, the variety not being mentioned. Rich light soil, plenty of water, and soot-water given once or twice a week when the box is full of roots will be necessary. Flowers surrounded by air and in the full sunshine in a window-box need much more moisture than if kept in a greenhouse, and a regular supply, at least once every day, should be given with a douche from a rose-watering-pot on warm evenings.—L. R.

Ivy-leaved Pelargoniums would be suitable for the purpose, and you will find they will remain in good condition until the autumn with a little care. The position is an important one, and you want something that will present a gay effect. Creeping Jenny, the Tropaeolum, and Canary Creeper—the latter, especially, are very pleasing—but as you do not seem to care for these, select the Ivy-leaved Pelargonium. Put in good strong plants of a well-chosen variety, as the clear rose-pink Mons. Crousse, which is effective and free.—C. T.

Few plants could be more suitable than Ivy-leaved Pelargonium. A combination of Victoria, Masterpiece, Innocence, and Campanula fragilis would have a very pretty effect.—A. O. BIRGER.

3385.—Treatment of Spiraea japonica.—This plant (presumably bought for room-decoration) must not be allowed to want for water at any time of its existence, although it does not, of course, need such plentiful supplies after its flowers fade as when it is growing rapidly. As soon as the blossoms are over they should be picked off (leaving the foliage intact), and the plant can then be put out of its pot into any good open border to rest for the summer. The root may be divided into two or three parts (according to size), and each of these will make a good plant for next season. The foliage will gradually ripen off, and the crowns (or embryo plant for the following season) become strong if kept watered in hot weather. They can be potted up in November or left till March in the open soil, for the plant is perfectly hardy. If wanted early they should be potted up early, and gradually brought in in slight warmth (a sunny window will do), giving them constant supplies of water when growth begins, and syringing them often (or watering with a rose) to keep off green-fly. Plants grown in a window need to be turned

round often, or will be lopsided; but with a little attention and care *Spiraea japonica* is an excellent window plant, and most decorative for a table or drawing-room. Should the present plant have been starved for want of water after flowering it will do but little next season, and should be allowed to stay in the open border undisturbed for an extra season, when the plants will have grown very strong. It is as well, however, in this case to take them up in the autumn and lift the roots, putting them at once again into the border, or they will get too large for anything but a large-sized pot, and it injures them considerably to divide them when they are potted up. Rich soil and good drainage is essential for potting *Spiraea*.—R.

GARDEN WORK.

Conservatory.

Cyclamens sown in autumn will now be large enough to transfer to 5-inch pots; but spring-sown plants will only be in condition for pricking off. Some of some kind generally be obtained everywhere; but really good loam suitable for general plant-growing is not so common. Good loam can easily be distinguished from that of inferior quality by its touch. It soft and silky to the feel it may be used freely for almost everything except hard-wooded plants, and when this loam can be had it may be used freely in potting *Cyclamens*, *Doubis Primulas*, *Ferns* and other plants for which peat is frequently used. *Cyclamens* ripening seed must be looked after, as the seed soon dries. Chinese *Primulas*, also, and *Chlorocaris* will require watching. Early *Fuchsias* will soon be showing flower. My earliest batch of autumn-struck plants, and which have been kept moving all winter, are showing blossom-buds. Of course, the plants are not so large as they might have been if potted into larger pots. One of the peculiarities of *Fuchsia* culture is this: Almost the moment the roots work through the soil given at the last shift, and begin to feel the sides of the pot, blossom-buds begin to form, and beyond the elongation of the flowering-shoots, there will not be any more growth; therefore, if large plants are wanted shift on in rapid succession before the flower-buds form. *Hibiscus* are now coming in, and may have weak liquid-manure. Large specimens are very desirable for the conservatory; but small plants now last August and now carrying one large brass of blossoms in a 5-inch pot are very useful for the drawing-room table or stand. A small quantity of iron in the soil will give a blue tint to the blossoms. *Chrysanthemum* will draw too much if kept now where the heat is used. Move to cold frame, but cover the nights, as frost sharp enough to injure the growth may come yet. Shift on to larger pots before the plants get pot-bound, and see that no plants suffer for want of water. The watering now is getting a rather heavy business; but the sunshine has been quite phenomenal for the season, and if a little shade is used over plants in blossom no great harm will be done. It is not doing the *Primulas* and *Chlorocaris* for early blooming. It is always advisable to make at least two sowings of these things. It is rather a bother now, so many other plants require extra space under glass, to be compelled to keep the things going out of blossom under cover; but it must be done unless things are to be sacrificed. Fertilizer shifts if properly looked after need not be useless after the first year.

Stove.

Young winter-blooming stuff coming on must never be checked for want of pot room, nor yet be permitted to run into weakly growth for want of a timely pinch with the finger and thumb. Of course, where there is a warm pit or an intermediate house, much of this young stuff will be moved on from the stove. Cuttings of *Gardenia*, *Euphorbia*, and *Polka* should be put in now. It often happens that the cuttings of *Polka* can be had later in the season than now or earlier. I have noticed to say against late-struck *Polka*, as we are always glad to get them late as well as early. They will strike well now in sandy peat or leaf-mould, with plenty of sand, in a brisk bottom-heat. Cuttings of *Croton* and all other foliage plants usually propagated by cutting will do well now. *Caladium*, *Maranthus*, and other foliage plants are making rapid progress, and may be increased if desirable by division of the roots. *Caladium* will do in stronger soil than the other plants. I have had all the strong-growing *Caladium* growing splendidly in turfy loam and drainage being properly seen to. The small delicate varieties, such as *agryria*, will do better in sandy-peat without any manure, though a dash of leaf-mould will be an advantage. Pot off early-struck *Bourvardia*, and put in more cuttings. *Repot Eucharis Lilies* should it be desirable to break up any of the old clumps. This is the best season for repotting, as they may either be potted singly, or three or more bulbs can be placed in each pot. The drainage must be perfect, and the soil best turfy loam and very old manure. I am always rather reluctant to break up old clumps of roots, as it takes so long to work up large pots full again so as to produce abundance of flowers.

Unheated Greenhouse.

The time is at hand now when a boiler and pipes so far as regards greenhouse work will not be required; hence the unheated greenhouse is quite as useful as where heat is employed. The double *Tiger Lily* is a very desirable pot-plant. From three to six bulbs in a large pot will make a fine specimen, and this class is hardier and less affected by green fly than the *Bermuda Lily*. Place in the centre of the arched-roof flower-stems are a terrible nuisance, and rather difficult to dislodge. Tobacco-powder or snuff is perhaps the best remedy. Variegated Grass of large size, such as the *Arundo Donax variegata*, and others, are always effective. Anything that requires

a shift may have it now, and, of course, *Chrysanthemums* must be kept moving. *Misk* and other *Mimulus* will be moving now. Some of the hybrid *Mimulus* are very pretty, and will flourish in the cool-house.

Forcing-houses.

There are plenty of flowers which bloom naturally at this season, so flower-fearing is not in many cases so urgent; but at this time a warm-house can always be utilised probably for helping on anything which requires heat to make growth, or to bring on young stock so as to relieve the pressure of the stove. There is besides plenty of propagating to be done yet, and in addition this house can be made available for Cucumbers, Strawberries, and Figs in pots.

Cold Frames.

These are in great demand now for hardening off bedding-plants and to relieve the fruit-houses. Temporary places may be roughly constructed with boards, to be covered at nights with mats or siled calico, for pricking out Stocks, Asters, and things of like character. Celery-plants will far a little time yet require a little shelter after pricking off.

Window Gardening.

Give liquid-manure to *Pelargoniums*. Keep *Cinerarias* and *Calceolarias* in the shade. *Tuberous Begonias* are now starting, and should be repotted, using turfy loam, leaf-mould, and sand, with plenty of drainage in the pots. Scarborough *Lilies* where necessary should be repotted. Keep the bulbs bare out of the soil. They do not thrive so well when completely buried. Pinch the long shoots of *Fuchsias* to make the plants compact in habit, and take all plants neatly. Sponge foliage where required. Divide *Aspidistras*, and *repot Palms, Ferns, and Indian-rubber-plants* if required. Do not overwater newly-potted plants; it will make them unhealthy.

Outdoor Garden.

Recently-planted Roses and shrubs must be mulched and watered. For some time now the weather has been delightful, but rather trying to evergreens recently planted. Keep the foliage dry by the use of the syringe or garden sprayer. Hundreds of trees and shrubs are annually lost for the want of attention in the matter of mulch and water. A little mulch of old manure or leaf-mould will be beneficial to *Carnations, Fuchsias, and Pansies*. I am using the old manure which has been taken out of the Cucurbit-houses. Old Mushroom-beds well broken up and mixed with a little loam will be valuable for the same purpose. The seeds of hardy annuals will soon germinate now if the surface soil is very dry and it is watered just previously to sowing the seeds and the latter covered with a little fine-sifted leaf-mould, the seeds will grow speedily. When the seed is low in the ground the plants are often weakly when they struggle through. Ivy on building if not yet trimmed in should be done at once. Ivy will not make walls damp if trimmed in close annually. I usually take the shears and cut everything off close to the wall, or, at least, as nearly as one can use the shears without injuring the branches which cling close to the wall. Grass-seeds for the improving of weak or bare lawns may be sown now. New Lawns also may be seeded down, or turf laid in place, if preferred. It will save a great deal of trouble to have a good water supply had at a reasonable cost. I should prefer turf, but it is useless expending to get a good turf in a reasonable time if sowing seeds on very poor land without manure. Evergreen shrubs of all kinds, except *conifers*, may now be pruned. Cuttings of evergreens, both under glass and on shady borders outside, must be kept moist. A little mulch between the rows will do good.

Fruit Garden.

The bright sunshine has been a great help to the fruit force. Vines, Peaches, Figs, Melons, and Strawberries under glass have come on considerably, but the extra warmth and brightness has necessitated extra attention, especially in the matter of damping-down. I never syringe Vines after they have broken, but moisture is liberally supplied by damping floors and borders. In bright weather this damping is done in the middle of the day as well as morning and evening. In a very hot day a few pots of water thrown on the paths of Peach-houses or Vineries is a great support to the foliage, and often prevents scorching or scorching. Ventilation must be closely watched now, especially in the morning. Begin by opening the top lights, and as soon as the temperature begins to rise from the effects of the sunshine, and increase the size of the opening gradually as the temperature rises. There has been a good deal of tying required both among Grapes and Peaches. Strawberry canes also have had a trying time, but there are compensations—the work of two or three weeks has been done in one. This may not in all cases be an advantage, still in most cases rapid growth is desirable. See that inside borders are in a moist condition; both Peaches and Grapes will take a good deal of nourishment where the drainage is free and the roots live. Strawberries outside will soon require mulching with long manure. If the weather continues dry the mulch will conserve the moisture in the land, and Strawberries are thirsty plants. Remove covers from wall trees as often as possible to let in air and sunshine, if the covers are close and heavy. When fishing-nets only are used they may remain on till removed altogether. There is a wonderful prospect for Apples and Peaches.

Vegetable Garden.

Forced vegetables have come on rapidly under the influence of the bright sunshine, and have made a corresponding demand upon the time of the cultivator. It is glorious to be able to open ventilators to their full width. Potatoes, Carrots, French Beans, and other crops coming on in frames have benefited immensely by the free ventilation and the weak liquid-manure which we have been able to give them. Cucumbers in houses worked on the non-ventilation system have grown rapidly with the main food, and with a little shade for a few hours during the hottest part of the day. When Cucumbers are grown on a very large scale the shading consists for the most part of thin whitewash, mixed with a little size, syringed over the glass. This shades sufficiently without darkening over much. I find Cucumbers do well under such conditions. Where but little air is given frequent dressings of rich turfy compost are very

beneficial as the roots are constantly working through to the surface. The last fortnight has been a splendid time for Tomatoes, blossoms not needed in the basement atmosphere, and it must be from sheer bad management if there is any disease. It is rather too soon yet to plant unheated houses, but the borders should be got in condition to secure the plants as soon as it is quite safe to trust them in a house without fire-heat. This is a busy time in the kitchen garden. Successional crops of Peas, Beans, Spinach, Lettuce, Turnips, etc., should be sown. Prick off Celery, Cauliflowers, Brussels Sprouts, Lettuce, Leeks, and Onions raised under glass; sow main crops of Carrots, Solei, and Scorzonera. Main crops of Peas may now be sown. The Turnip-rooted kind is the earliest, and a row at two feet should be set in early. Splendid weather for planting Potatoes. Do not forget in a few plenty of room. E. HEDDY.

Work in the Town Garden.

Away from the smoke some amount of shading has been necessary during the middle of the day, as for the past fortnight or more the sun has been extremely bright and hot; but in large towns a lot of this kind of work is done for one, the fall of smoke and frequent fog acting as a sort of blind, and largely tempering the sun's rays. In addition to reducing the amount of labour in the garden, it saves the gardener a lot of labour in watering; but do not carry it too far, for sunshine solidifies the new rapidly expanding tissues, and the more sun a plant can stand without distress the better for it in every way, as a rule. The more heavily you shade the more shade most plants require. A movable blind is best, and it should not be drawn down until really necessary, and taken off directly the sun begins to go downhill a bit—at this season by about 3 p.m. at the latest. Propagating will still be proceeding, and where a lot of stuff has to be worked up occupies a lot of time. Cuttings of *Fuchsias*, *Penulias*, *Heliotropes*, and, indeed, almost anything will now root in a very few days if inserted in well-drained pots or boxes of sandy soil, and plunged in a gentle hot-bed, or kept warm, close, shaded, and moist in a house or pit, which must be well-ventilated. If potted off singly directly roots have been found, and before these have run so far as to be liable to get broken in the operation, and again kept warm, close, and moist for a time till established, with cutting done in the afternoon as soon as possible, and the plants in the beginning of June all chosen got in a month or two earlier. Continue pricking off seedling *Begonias*, *Gloxinas*, and others, for if left too long in the seed-pans they often damp or "fog" off wholesale. For all work of this kind I like to fill the pans nearly half full of drainage, with a layer of rough siltage over, and then one can water them almost ad lib., with no fear of scouring the soil. I am just now potting off a batch of seedling *Streptocarpus*, which were sown rather late last summer, and have stood the winter in a "stone" pot. They are growing fast, and must be potted to make capital use of them; but these will prove to be very good town plants, but the chief drawback to their general culture is that the seed is so excessively small that it requires some amount of skill, and a great deal of care, to get it up successfully. Tomatoes ought to be planted out under glass as soon as possible now. It is rather early yet for unheated houses, but if there is just enough heat to exclude frost good strong, well-hardened plants will do right enough now. I like the 5-inch pot size to plant out from heat, either indoors or out. B. C. H.

THE COMING WEEK'S WORK.

Extracts from a garden diary from April 8th to April 15th.

Looked over early Tomatoes and rubbed off side shoots, tying up main stems, etc. Always make the borders with short manure where the bottom trusses have set, and the plants require more food. This mulch is absolutely necessary in the case of borders raised above the natural level. It saves so much time in watering, and the plants do better when the roots are in an equable state of moisture without so much watering. Watering in hot weather is not an unmixing good, and a watering of short manure as a mulch keeps the soil comfortable as a trifling expense. This mulch is beneficial to crops growing on warm early borders, which are generally raised above the natural level considerably. Filled the shelves in an unheated house with Strawberry Sir Charles Napier. This is a splendid variety for late forcing, where plenty of ventilation can be given. Good favoured Strawberries cannot be grown without plenty of ventilation. On hot days I open all the lights to the full width, and generally set open the doors as well for a few hours in the middle of the day. The blossoms set so freely when the currents of warm sunny air circulate among the foliage and flowers. Soon after three the houses are closed, and the engine or syringe is used very freely, rain water which has been exposed in a tank in the sunshine being used. This is the time to force the crop. The thermometer may run up about 90 degs. with a saturated atmosphere. The fumes are kept down during the day, but I always contrive to have the pipes comfortably warm when the natural warmth which has been shut up in the house declines. This, I take it, is the secret of successful forcing. Let the sun do the work when it will, but meet the declining temperature with the fire. Thinned Peaches in second house. The house contains a dozen trees, and all have set better than usual this season, necessitating very much thinning. When a heavy crop of fruit has been set I hold it is a mistake to leave the young fruits that are not required on too long. There is one advantage in having Abundance; the fruits left for this crop can be placed on the upper side of the branches, and so be brought immediately under the influence of the sunshine. Put in cuttings of carpet-bedding stuff, especially the bright-leaved *Azaleas* and *Hebe*. These are very easily rooted, and are indispensable for producing the effective colonizing of the foliage beds; but carpet-bedding only lingers new in most places in comparison with what was done 20 or 30 years ago. The time moves so rapidly looking back on the past quarter of a century seems but as yesterday in some respects. Sowed more *Miracoste* and Sweet Peas with a large collection of annuals. To do them justice I should say should be well done. Sowing

* In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equal good results.

annuals among strong growing herbaceous plants is a common practice, but not a good one for bringing out all the effectiveness of the annuals. I was forcibly reminded of this last year. Three years ago I planted a new herbaceous garden, and filled in the spaces between the borders with annuals. The latter did splendidly the first year, but they have never done so well in the same beds since the season during the herbaceous plants have occupied the soil with their roots, and the growth above ground shades the annuals too much. Planted Hollyhocks, and prepared sites for Dahlias. Trod the surface of Carnation beds, as the soil must be firm

INDOOR PLANTS.

NEGLECTED GREENHOUSE PLANTS.

PIMELEA SPECTABILIS.

This fine plant, of which we here give an illustration, was introduced into this country from the Swan River district of Australasia nearly fifty years ago, and has always been a favourite with growers of New Holland plants. The genus belongs to the Daphnoid family (Thymelaeaceae), and contains numerous handsome species, which are alike useful in the conservatory or for exhibition purposes, as they travel well without brising. This plant is a strong, yet compact grower, a profuse bloomer, and of tolerably easy culture. The soil best suited to this plant is a mixture of peat and loam, in the proportions of about three parts of the former to one of the latter; to this should be added sufficient sharp sand to make the whole feel gritty, whilst

house and a range of frames. The other house is heated by a flue which goes round like the letter U in shape. I have no side flues to the boiler. The whole acts very efficiently, too much so sometimes. The fuel is extremely poor, but the large fireplaces gets over that difficulty. The only drawback is the amount of clinker formed—great cakes as heavy as I can lift; but, having no firebrick in the furnace the clinker is always free—no sticking fast, very different to the stickfast clinker I had to contend with last winter. I can leave the apparatus ten or twelve hours easily.—Economy.

STREPTOCARPUS.

ALTHOUGH the Streptocarpus have been known in this country for more than thirty years, only a very limited number of cultivators thought them worth attention. It was left to Messrs. Veitch and Son, of Chelsea, to popularise them by introducing a greater variety of colours. In this respect the improvement has been very great, and for the greenhouse we have not had a more valuable introduction for several years, as the plants are not difficult to raise from seed, and one-year-old plants will continue to flower the greater part of the summer. Anyone having the command of a temperature of 60 degs. may sow the seed at once, and if the young plants are carefully tended they will flower towards the end of the summer. It is,

in not likely to make a good room plant, as the surface of the leaves is somewhat woolly in character, and likely to retain any dust flying about.
J. C. C.

BEDDING "GERANIUMS."

THESE very useful plants are frequently lost in great numbers during the winter from excess of moisture at the root and in the atmosphere, and probably a great many more, especially of the tender variegated kinds, are lost from this cause than by the action of frost. The best plan of keeping the stock safe that I have found in to get them well rooted either in small pots or shallow boxes, and from October until February give but very little water at the root, just enough to keep them from flagging. The best place for them is on shelves near the glass, and everything should be kept quite clean. If the pots or boxes are just taken off the shelves and all decayed leaves picked off, and the surface soil slightly stirred it is surprising how the plants are benefited. Fire-heat should not be used to promote growth at this dull period of the year, but more to dry up damp, and for this reason it is best to warm the pipes or flues during the day, when the ventilator can be opened at the same time. Old plants that have been lifted and potted need a good deal of cleaning to keep the shoots from rotting off, and not only the leaves that turn yellow require removal but especially the little leaflets that form at the junction of the leafstalk and stem, for if they are left to decay on the shoots they soon affect the whole shoot. A little extra attention in getting the stock safely into the new year will be well repaid in spring by an abundant stock of plants.

J. G., Hunts.



Pimelea spectabilis. Engraved from a photograph.

thorough drainage is indispensable. After flowering is over the plants should be cut back tolerably hard, in order that they may be well furnished with foliage at the bottom. Potting should be performed just after the stems begin to put forth young shoots; the soil should be made very firm, and water must be carefully supplied until the roots begin to get established in the new material. Just at this time a slightly warmer and moister atmosphere will be beneficial, but when somewhat established the plants may be removed into the greenhouse again. During the earlier growth the shoots should be pinched off once or twice to keep the plants bushy, but this stopping of the growth should be discontinued after the month of July, or they will not have sufficient time to ripen up and form flower-buds for the ensuing spring. The flowers are produced in large woolly white heads upon the points of all the shoots, and they last in full perfection for a considerable time. The variety rosea is rather a stronger grower than the typical plant, and the flowers are all tipped with rosy-pink, thus rendering it very distinct and a fit companion for the species.

G.

however, in the second year that the plants show their true character. They not only send up a greater number of flower spikes, but the individual blossoms are increased. The seed is very small, and therefore requires to be sown in a fine sandy soil, and to be very carefully watered. Where bottom-heat is available the seed-pan should have the benefit of it. As soon as the seedlings are large enough I prick them off into another pan, and keep the soil about them just moist, and out of the reach of the sun. A sheet of glass laid on the pan and a piece of paper to afford shade in bright weather supplies the most suitable conditions for the seedlings. Even as the plants get older the leaves retain a better colour if a thin shade is put on the glass during the hot summer months. It is a misfortune that the foliage cannot bear strong sun without losing the dark-green colour that they retain when grown in the shade, because I find the leaves get drawn out needily in length, which somewhat detracts from their otherwise charming appearance. It is a mistake to give the plants large pots the first year. I find those 4 1/2 inches in diameter quite large enough. In the matter of soil these plants are not very particular. My stock is growing in an ordinary mixture of garden mould, leaf-soil, and sand, and they were in flower nearly the whole of last summer. Being herbaceous in character, the soil about the roots must be kept constantly moist, but they must have more root waterings in summer than in winter. I am afraid the Streptocarpus

3447.—Failure of a hot-bed to heat.

No doubt the manure was trodden in the pit too firmly, hence the failure. This is plainly proved by the fact that when thrown out loosely on the ground fermentation at once set in. Fresh litters stable-manure alone might have heated allright, even to the pit, but pig and cow manure I always look upon as nasty cold "soggy" stuff that is not fit to form part of a good hot-bed. If you could add an equal part of tree-leaves collected last autumn, or, better still, of fresh tan to the stable manure, you would secure an excellent and lasting hot-bed.—B. C. R.

3395.—Azaleas after flowering.

If your plants are of a good shape they require no pruning. Allow the young growth to gradually harden off in a cool, shaded spot in the greenhouse. When quite ripened you can then put them outside on a warm, sheltered border. When the flower-buds show remove them again to the house. In this way you should have good blooms next year.—S. J.

—The plants have to make their growth after flowering, and should be placed in a warm house to do so; water and syringe freely. Do not cut them down; they require no pruning. If there is not a heated house, encourage them to make growth in the greenhouse. When growth is made and buds formed they may be turned out-of-doors.—J. D. F.

3380.—Ants in a stove.—To destroy these mix arsenic into a solution of sugar and water, which they will devour greedily; but care must be taken that no other animal gets to it. Cover the saucer with a slate on the top of it, having a couple of pegs between the saucer and slate to let the ants in.—M. J.

3382.—Treatment of Azalea Mollis.

—If Azalea Mollis is cut back after flowering, there will be no blossoms the next year. A strong, rambling shoot may be cut out, but there should be no regular cutting back. The reason why Azalea Mollis fails to bloom is owing to the neglect to which they are exposed in placing the plants outside before the wood has had time to harden. If they are kept indoors in the same way Indian Azaleas usually are, till the wood is getting formed at the base, they would flower annually.—E. H.

—If the plants have been grown for forcing they may either be put in flower-pots for the summer, or be planted out in the open garden in good peat soil. The question is asked, "Should the shoots be cut back to 3 inches or 4 inches, and then be planted out?" Presuming that it is the plants that are to be planted out, and not the shoots, I may say they are least trouble when well planted in peat soil; but the plants must first be nursed to the open air by being kept for some time in an airy, light greenhouse. It

Economy in heating.—I am heating two houses, each 20 feet by 12 feet, with an expenditure of not more than 1s. per week during the recent severe weather. I use refuse coke from the gas works, which costs cartage only. I have a big saddle boiler over a good-sized fire-place. This heats the pipes which supply the

is best not to prune them at all; the plants become bushy enough without it. They may also be grown in flower-pots during the growing season; but it may be necessary to shift them into larger flower-pots, and they require a good deal of attention during the season. They do best out-of-doors, and, if well cared for, will set a large number of flower-buds.—J. D. E.

FRUIT.

FLAVOUR IN FORCED STRAWBERRIES.

There are many who object to forced Strawberries, owing to their being flavourless and deficient, to a great extent, of that fine aroma and full flavour outside fruit obtains. I fear this want of flavour, in early fruits especially, has often deterred employers from forcing largely. The Strawberry when forced slowly and provided for dessert in May and early in June forms a welcome addition to the somewhat limited dessert obtainable at that date. If carefully ripened it is very little inferior to fruit from the open. Many years ago the question of flavour did not receive the same attention as it does now, as I cannot remember a single instance where the plants were removed to a cooler house. In many instances the fruit was ripened in Pine-houses, and no thought was given to removal, lowering of the temperature, or more air. I have heard it remarked that we have made great strides in new varieties that are of quicker growth and less liable to insect pests, but I have not found it so. If tied to three varieties, my selection would include two of the oldest and, I feel sure, the most reliable. In Strawberries, as in other fruits, there is a wide difference in quality, and as quality and flavour should be the first considerations for the private grower, he will not have so wide a selection as the market grower, with whom size and colour are everything. In very early forced fruits it is almost impossible to get both these qualities—viz., size and good flavour, so that to some extent gives the early fruit a bad name, as large fruits are sadly deficient in flavour, and small ones are objected to on account of size. Early in March I saw some fine ripe fruits that had been produced at some cost. They were flavourless, whilst fruits of the smaller Vicomtesse Hécart do Thury were of excellent flavour, and the weight in the aggregate equal. If flavour is desired in early fruit, size must not be the first consideration. Of late years the large growers (to some extent) have wisely given up very early forcing and do not get the Strawberries ripe till late in April or May. By so doing, the larger fruiting kinds, which are best for market, and when sent in good condition in the season find a ready sale, can be grown. The large grower uses what are termed Strawberry-houses, which are generally filled at once, so that when the fruit is ripe or nearly so a lower temperature is maintained. This improves the flavour of the fruit, and causes it to be firmer for travelling. In many gardens it is not always practicable to give a whole house to Strawberries, but late in the season cold frames may be utilised and the flavour of the fruit much improved. I am aware of the labour this involves, but I question if it is much greater in the end, as the plants when removed to a cooler house or frame absorb less moisture, the fruit keeps longer, and the hotter house may be put to other uses, while there is less discomfort in attending to the plants. The question of moisture is a wide one, and often is the chief cause of the want of flavour. I do not like the saucer system, as it causes the fruit to be insipid. Saucers are no doubt good as far as labour saving is concerned, but if there is a spell of dull weather the flavour of the fruit is much impaired. I prefer to see trays placed on the shelves or standing specs, Grass-side downwards, as these check the loss of moisture and prevent flagging in hot weather. There are also various means to prevent dryness at the root. I have a thin board to shade the front of the pots, and covered the shelves in some instances with Cocoa-nut-fibre or decayed leaves where it can be done without being untidy in the house. In frames the pots may be partially plunged in the cool material and much labour saved. Whatever material is used, the drainage should be perfect to allow the water to get away freely. If only a few plants are grown, hand-watering

second pot a size larger, placing the fruiting-pot in the empty one, this keeping the roots cool and preventing evaporation. When late fruits are grown in frames, much can be done to get flavour by the giving of air and attention to moisture. Liquid-manure should be omitted at the right moment, as this greatly deteriorates the flavour of the fruit. If it is impossible to lower the temperature when ripening commences, it will well repay the cultivator to remove to a cooler house, doing the work carefully so as not to bruise the stalks or fruit. G.

3432.—Peach tree losing its flowers

—When questions are asked they ought to be more definite. In this case not a word is said about the conditions under which the tree is growing, nor whether it is in a Peach-house or on a wall outside. It is in a Peach-house probably, and the blossoms drop because the tree has received a check of some kind, and this is more likely to happen when the tree is growing under glass. If the house is kept too moist, and shut up when in this state, the blossoms will drop; an overdry inside border will also cause the blossoms to drop off. My plan with Peach-trees when in blossom is to keep up a rather warmer atmosphere, and as dry a one as possible; admit plenty of air by day, and do not shut up the house altogether even at night. The pollen should also be distributed with a camel-hair brush from the anthers to the pistil.—J. D. E.

—The variety named (Late Admirable) does not always ripen its wood up well, and then the flowers drop. I have occasionally had thin crops from this cause, and I think this variety should have a warm, sunny position. I cured one tree of this bloom-dropping by moving it to another spot, where the border was dryer, and the tree had more sunshine and warmth. A dressing of lime on the border will probably do good.—E. H.

—It is well known that in the case of some sorts of Peaches bud-dropping is an inherent failing; but as far as my observation goes it is not so with the sort you mention, and it is one of the oldest of Peaches. You say that the flowers are fully expanded, which indicates that the cause arises from something unusual—either from the want of root-moisture or a state of debility in the tree that is not easily traced. As you do not give the age of the tree or state whether it is under glass or in the open, you increase the difficulty of giving a more definite answer.—J. C. C.

—This variety is not addicted to dropping its flower-buds as a rule. Dryness at the roots during the winter is the primary cause of this defect, although a too warm atmosphere at the same time will contribute to a loss of bloom. There is still another cause—excessive growth made during the summer; in consequence the wood is not matured.—S. P.

3433.—Grub on Apple blossom.—The grub is the larva of the Codlin-moth, and though it may be difficult to clear off altogether perseverance will soon thin its numbers. The trees should be sprayed with the garden engine when the Apples are quite small, at the time the moth lays its eggs in the eye of the Apples, usually early in June. Paris Blue or London Purple is much used for this purpose. These are preparations of arsenic and lime mixed with water, and are mainly used because the ingredients are cheap and not difficult to apply. But there are other things which may be used effectually. An insecticide called the Gardener's Friend, which forms an emulsion in water, I have found very useful. This also is cheap, and cleanses the trees effectually where it goes. Besides spraying twice in early summer there are other means which should be adopted. Many use grease-bands to prevent the insects crawling up the stems of the trees to secrete themselves in winter. Hay-bands may be wrapped round the stems of the trees to form hiding-places for them, to be afterwards removed and burnt with the insects before they change their condition, and lastly, all fallen Apples should be gathered and used or destroyed as soon as they drop, before the insect has time to crawl out. The maggot eats its way to the centre of the Apple, and when the vital part is reached the Apple falls, and the insect eats its way out, and seeks fresh quarters.—E. H.

The Apple is exceedingly liable to be injured by various maggots and caterpillars which destroy the fruit. The Apple is also

(*Teuthreda testudineae*) deposit its eggs in the Apple-blossoms; but there is no way to prevent it from doing this. The only remedy is to collect the fallen fruit, which drops off owing to the larvae feeding on its interior. It falls from the trees when about the size of a Walnut, and the best plan is to collect and burn it. Another troublesome pest is the Codlin-moth, which deposits its eggs in the young fruit. The grub is speedily hatched, and sets its way into the interior of the Apples, causing them to drop off in the same way as the larvae of the saw-fly does in this case also. Destroying the Apples is the best remedy. As this species spins itself a cocoon on the bark of the trees it is a good plan to keep them free from loose bark. The cocoons would be found in June.—J. D. E.

3434.—Fruit-trass on Oak-paling-fences.—Pears and Apples would no doubt do well on the fence facing east, and Plums and Apples on the west side; or if you like more variety you may have some Cherries on the last aspect. May Duke and Bigarreau are two useful Cherries. I do not think the draught will do serious harm to the blossoms. If I wished to plant Pears in such a case I would select triple cordons, and lift and replant the trees the third year after planting. Even single cordons would be better than fan-shape or horizontal-trained trees.—J. C. C.

—Plums would succeed best with an eastern exposure, such free setting kinds as Victoria, Orleans, Jefferson, Cox's Golden Drop, Kirke's, and Prince of Wales, would be a good selection, as, with the exception of Orleans, none are extreme early, and in consequence would escape the cutting winds sometimes experienced when in bloom. Apples and Pears would be preferable for a western exposure; of the former, fresh Peach, Lady Sudeley, Cox's Orange and King of Pippins, are good dessert, while Lord Grosvenor, Echlinville, Warner's King, Stirling Castle, and Laue's Prince Albert, are suitable and free bearing kinds in the kitchen section. Free growing and heavy cropping sorts of Pears are Jargonelle, Louise Bonne de Jersey, Doyenné du Comice, Marie Louise, and Pitmaston Duchess. Both the Apples and Pears should be espalier-trained, while fan-shaped is best for Plums.—S. P.

3445.—Pear "Bishop's Thumb."—I have known this Pear for a number of years, and frequently see it growing as a standard in market gardens. But I never knew or heard of its behaving in the way this correspondent describes. It is as opposite, in fact, to what I have been accustomed to regard it, that I can hardly think it is the same sort. A friend of mine has many bushels of fruit of it to dispose of every year from standard trees, and he regards it as one of the most profitable of second-rate market Pears, as it always pays him for finding store room for the fruit for two or three weeks. Whether "N. Y. Z." has got the true sort or not does not matter much; the trees, whatever the sort may be, are not worth keeping, and should be rooted out.—J. C. C.

3441.—*Tropaeolum tuberosum*, &c.—This is a distinct plant from *T. speciosum*. The last named was introduced from Chili in 1846, and may be propagated from seed sown in a frame in a little bottom-heat, or by dividing the underground rhizomes. It likes a moist and rather shady position in a border of peat-soil. The flowers are scarlet, and it has been named the Flame Nasturtium. It is a hardy plant, but *T. tuberosum* from Peru is not more than half-hardy, and produces red and yellow-coloured flowers. It forms tubers at the root, hence its name. Propagate by division or seed.—J. D. E.

—*Tropaeolum tuberosum* is quite distinct from *speciosum*. The former is the Peruvian Nasturtium, and has tuberous roots. The flowers are yellow and red, and it has larger leaves than *speciosum*, which is known as the Flame-flowered Nasturtium, owing to the intensity of its scarlet colouring. The former is easier of growth than the latter, succeeding in almost any position, while the latter prefers a cool site for its roots. For instance, the northern side of a high wall or hedge, or even that part of a shrubbery, over which the long trailing shoots will ramble. In any kind of good garden soil both sorts will flourish.—S. P.

THE KITCHEN GARDEN.

EARLY PEAS.

THERE are many expedients resorted to in order to hasten the growth of early Peas; but there is no way, except growing the very dwarf sorts under glass, that has yet produced Peas in quantity more than a few days in advance of those sown in well-sheltered positions in November, protected from mice, birds, and slug. By-the-way, a good protection for the



Fig. 1.—Pea "Laxton's William the First."

Peas against the ravages of the two first-named pests is to sow the seeds on a flat surface, and cover them first with chopped Furze, and then mound the earth over the rows, using a covering of soil over the young tops when they begin to show their green points through the ground. To prevent the depredations of slugs, a good dusting of sifted asbes, or chaff from Barley, is often used with good effect. As a precaution against the possible failure of these early Peas, I have usually sown a good quantity during January on strips of turf, cut 1 foot long and 3 inches wide. These, turned Grass-side downwards, are packed closely together on stont planks; the middle of each turf is then scooped out, and the Peas sown and lightly covered with fine soil. A cool viney snits them admirably until the shoots are 2 inches or 3 inches high, when they should be transferred to cold pits and hardened off by exposure, so as to be fit for planting out the first or second week in March. As the roots will be found hanging through the turves in quantities, wide drills should be drawn, and each turf should be carefully replanted. The rows should then be staked at once, and light evergreen branches should be placed a short distance from each row, for the purpose of breaking the force of the rough winds that usually prevail at that season. On a south border, thus planted, Peas in quantity may be generally gathered about the last week in May. Two of the very best early kinds are the following varieties—namely, Sangster's No. 1, a white Pea (also known as Ringleader and Prince Albert, and by some thought to be identical with Daniel O'Rourke) and Laxton's William the First (see Fig. 1), a very fine kind, not quite so early as Sangster's No. 1, but superior to it from the fact that it produces Peas of a fine green colour

and excellent flavour, and it also continues bearing for a remarkably long time. A good Pea to sow to closely follow on after the earliest kinds is Laxton's Supreme (Fig. 2). H.

KIDNEY BEANS IN POTS.

CONSTANT supplies of Kidney Beans are indispensable in numerous cases, and being fully appreciated as an extra choice vegetable, private gardeners do not, as a rule, begrudge the amount of labour and valuable space necessarily devoted to their culture. It is my firm belief, however, that they are not nearly so liberally treated as they ought to be, the consequence being a rather weakly growth, a plentiful supply of red-spider, and light crops of Beans. No amount of overhead syring and atmospheric moisture will prevent the spread of red-spider over half-starved plants, and at least a third of the pods that show on starvelings turn yellow and drop off. In my younger days I have three-parts filled hundreds, I may say thousands, of pots with very poor mixtures of soil—anything being thought good enough for Beans—and when the plants were high enough for staking this was done, a top-dressing of fairly rich compost being given at the same time. Similar treatment is common enough at the present day, but it is not worthy of being designated good culture. The Beans are simply starved before the top-dressing is given, while the latter puzzles or misleads those who water the plants, and is of little real service in any case. Instead of using such poor soil it pays well to give the Beans a compost consisting of two-parts of light loam—if fibrous so much the better—to one of flaky manure or old Mushroom-bed manure, adding a sprinkling of lime-rubbish, wood-ashes, and well-charred garden refuse. The requisite number of 9-inch pots should be nearly filled with this light compost, pressing or jarring this down only moderately hard, from nine to a dozen seeds being sown in each, and covered with about 2 inches of soil. Enough space should be left for watering. Crowding the plants is unwise, and the number should early be reduced to about seven in each pot, these being lightly staked up before they are far advanced in growth. The best places for these Beans are the back shelves in three-quarter span-roofed forcing-houses, and the walls and front stages or beds in the fronts of similar houses, a strong beat and plenty of light being desirable, though they can be brought on slowly, but profitably, from this state in intermediate temperatures. When a tempting compost is provided, the roots quickly overrun this, while the plants grow healthily and sturdily, quickly coming into full bearing. Before they give signs of requiring liquid-manure, soot-water, answering well at first, should be given, and when the pods are growing the plants should be fed up daily, never once being allowed to become dry at the roots. Thus liberally treated, they retain a healthy, clean appearance up to the last, and the crops are most satisfactory. Mixing a little lime instead of lime rubbish with the compost has frequently been tried with good results, this apparently causing a more sturdy growth, the leaves of the plants being of a dark-green hue, while the productiveness is all that can be desired. M.

3375.—Potato disease.—The following particulars may be of value to "Carter." I think that sulphate of copper will be much used in the future for the prevention of Potato disease. Here are a few facts. Last year an important experiment was carried out by Messrs. Carter and Co., of High Holborn, and this plan of meeting the Potato scourge has been so satisfactory in France that the great French chemist, Dr. Aimé Girard, says the mixture may be confidently recommended as a preventative of the Potato plague. Messrs. Carter planted about an acre with Potatoes in ten double rows, the drills 3½ inches apart, as plenty of light can then get to their branches. The kinds planted were Myatt's Ashleaf, Snowdrop, Beauty of Hebron, and others, the whole piece of ground being divided into four equal parts, of which the first and third were dressed with the Bouille Bordelaise, and the second and fourth left undressed. The strength of the mixture was as follows:—22 lb. of sulphate of copper, 22 lb. of unslaked lime, and 100 gals. of water, this

being the quantity necessary for an acre of Potatoes. The sulphate of copper was of 98 per cent. purity, and the Macclesfield patent sulphate of copper, the same as used so successfully by M. Girard. The first and third quarters were dressed with the Bouille Bordelaise on July 11th and August 2nd, and the second and fourth left undressed, the mixture being applied thoroughly on both surfaces of the leaf. The disease appeared early in September in the undressed portions, and when lifted it was found that, as far as some tubers are concerned, the yield was about 2 tons per acre more than in the undressed portion (the two plots being less than half an acre). Another noticeable feature is that the quality of the tubers was better. I saw the experiments and vouchsafe for the accuracy of the above particulars. I think that the Bouille Bordelaise will be much used in the future as a preventative of Potato disease, a pest that has for years engaged the attention of Potato growers and others.—C. T.

3435.—Constructing a Tomato house.—Why do you not state what kind of house you are building? As there is a "walk through the centre," I presume it is a span-roofed structure, but you give no guide as to the height or width. If above 12 feet in width, I should advise you to have two pathways, with a narrow beat to take a single or double row of plants on each side, and a wider one in the middle. As a rule, I like to see the beds in a Tomato-house raised about 1 foot above the level of the path, but it does not greatly matter; in some cases the plants are set out on the floor level—in the ground on which the house stands—and in others on beds raised more than a foot; in either case

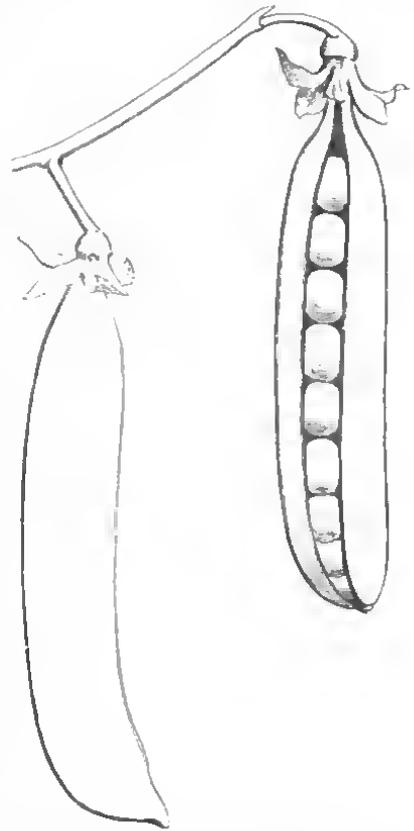


Fig. 2.—Pea "Laxton's Supreme."

with good results, if the treatment is right. As regards the arrangement of the pipes bottom-heat is quite unnecessary, and, as a rule, the best place for the pipes is along the sides and the ends of the house, next the glass or outside walls. Unless very early fruit is wanted, a single row of 4 inch piping all round will warm a house not exceeding 12 feet in width, nor 7 feet in height, quite sufficiently; but two rows of the 3-inch or 4-inch size would be better, of course, and if the structure is wider or lofty, two or three more rows might be fixed along the

pathway, or ways, with advantage. Provide plenty of large ventilators both in the roof and along the sides.—B. C. R.

—The height of the inside beds should depend on the height of the side-lights, if any. Supposing there are no side-lights and that the roof rests on a wall 2 feet above the ground line, with ventilators fixed in the wall, the height of the beds need not be more than 9 inches or 1 foot above the level. The hot-water pipes should be placed round the sides close to the wall, and the top pipe about 6 inches from the glass at the highest point. If you intend the house to be any use this season for Tomatoes you must push on the work with all possible speed.—J. C. G.

3425.—**Growing Salsafy.**—This requires about the same treatment as Carrots, and should be sown now in drills about 12 inches apart, to be thinned out when large enough to 6 inches apart in the rows. The land should be deeply cultivated, but not freshly manured, or the roots will fork out and be of little value. Salsafy forms a good rotation to Celery, the old manure in the trenches being thoroughly blended with the soil of the intervening spaces.—E. H.

—Salsafy is an easily cultivated plant; but to do it well it requires a very rich soil and a fairly open position in the kitchen garden. The plant produces long tapering roots, and requires soil trenched about 2 feet deep. Sow the seed in March or April in shallow drills made with the corner of a draw hoe. Sow very thinly, as the plants have to be thinned out to 8 inches or 9 inches apart in the rows. There is no more trouble in cultivating them than there is in growing Carrots or Parsnips. The roots are ready for cooking in October, and may be used during the winter; but it is desirable to dig some up in November, and put them in sand in case a hard frost sets in. The roots left in the ground can be used in open weather and in the spring.—J. D. E.

—This excellent vegetable must not be sown too early, or the plants are very liable to run to seed the same season, and if this occurs the roots become woody and useless. The best time to sow is probably the third or fourth week in April, and then, as a rule, very few of the plants will "bolt." The soil must be deep and moderately rich, the best way to make a good bed being to trench it 2½ feet deep the previous autumn, working in at the same time a fair amount of well-decayed manure, but chiefly towards the bottom of the trenches, or the crop may be grown with good results after Celery. In any case, no manure ought to be applied for some months before sowing the seed, or the roots will fork. A liberal dressing of burnt soil on or near the surface will ensure a rapid and healthy growth. Sow the seed rather thinly in drills a foot apart and an inch deep. When the seedlings are about 3 inches high thin them out to 6 inches or 8 inches apart, the latter distance if roots of the largest size are required. Keep the surface free from weeds, and, at the same time, in an open, friable condition by the frequent use of the hoe between the rows, and, if possible, the bed should be watered occasionally in dry weather. The roots will be fit for use in October and onwards.—B. C. R.

3471.—**Good King Henry.**—In GARDENING, March 11th, "A. G." asks whether the leaves or the roots are used for cooking? The roots are not used. The stems and leaves together are cooked and used in precisely the same way as Spinach, and are of excellent flavour, or the thick stems tied in a bunch may be cooked in the same way as Asparagus. As regards the time when it is in season, that extends over a long period with a little contriving. This is what I have done for several years, with a bed of three rows 18 inches apart, and 15 inches between the plants: I commence at one end of the bed, early in January, with a dozen 12 inch plant pots, placed upside down over the first dozen roots; then cover the pots with fresh stable-manure to the depth of 3 feet, so as to form a good hot-bed, and by the beginning of February I have some ready for use which is blanched and beautiful. The next portion of the bed, on which I set a Cucumber frame with glass, is ready for use now. Then comes the last portion in the open air, which will last till other vegetables are planted. HENRY JAMES, *Belfast*.

CHRYSANTHEMUMS.

CHRYSANTHEMUM NOTES.

YOUNG plants are now making rapid progress, and if a successful flowering period is to be the end of nearly a year's work, they should on no account receive a check in their early stages. Therefore, promptly give the later struck—and, in fact, all which by the quantity of young roots show that they require it—a shift into larger pots. At this time of the year they quickly get pot-bound. Many a promising lot of Chrysanthemums has been stunted through the potting being delayed even a week after the plants have reached the proper stage, when the roots want more room. It is not safe, perhaps, in any locality to stand the plants entirely out-of-doors thus early in this month, but still they ought now to be treated as slightly protected hardy plants. The lights may be taken off during the day and only returned at night, and to ward off heavy showers of rain or cold, cutting wind. Exposure and sun may cause some of the leaves to flag a little; but this will do no harm, and I would not advise sprinkling the plants in the middle of the day to prevent it. I have had the leaves scorched from no other cause than this in my anxiety about the same looking a bit distressed. Nor do I favour syringing the plants from this time; there is always plenty of moisture about them through watering in the ordinary way. Especially in low-lying districts should excessive moisture be avoided. Mildew generally comes soon enough without aiding its advent. Green and black aphides are sometimes troublesome at this season, but they are easily killed by a dusting of Tobacco-powder. The same powder will also destroy thrips, which in some collections do a great amount of harm. It is well to wash this off with the syringe the morning after using it overnight before the sun reaches the plant. As overcrowding is a prevalent error in plant cultivation, it may be timely to again mention how advisable it is that young Chrysanthemums should have plenty of room to grow, light and air playing among them being so essential to success. Continue to pinch out the tips of the shoots of those plants that are to make bushes, and place a little stick to those that are to have one stem. A point in connection with the latter is the number of flowers that each plant should carry. The orthodox number appears to be three. In a former note I named a few kinds that pay for cultivating for the small number of one, or at the most two, but I am equally well satisfied that in the case of many sorts, especially of the Japanese varieties, better results than obtain would follow if each plant were allowed to perfect from four to six flowers. I believe that I am right in saying that many ill-formed buds owe their origin to growth that is concentrated upon too few shoots. Size of blossom is so much in our thoughts that strength in the plants is overdone. The same as in animal life, however, hardly two Chrysanthemums have a like constitution. For example, Sunflower, W. H. Lincoln, M. Bernard, Gloire du Rocher, Puriton, Violet Rose, E. Molyneux, Avalanche, W. W. Coles, Mlle. Marie Hosts, Meg Morrillies, Bouquet des Dames, to name a few, cannot well be grown too strongly, and the three flowers may be quite as many as the plant will bring to perfection. But on the other side may be named such excellent sorts as Viviani Moral, Florence Davis, Etoils de Lyon, A. H. Neve, Stanstead White, William Trioker, Mme. John Laing, Sarah Owen, Anna Hartzhorn, which must not be overdone. I take this as a guide in the case of a new variety. If it possesses in its what may be called ordinary or undeveloped state an extra number of florets, and in all cases comes full to the centre, then allow plenty of shoots to grow, but if the opposite to this show itself, concentration must be the order of the day. In this matter of incurved sorts again, three blooms have been the number for each plant to carry, and believed in so long, that one almost seems afraid to recommend a larger number. However, I have for some time observed the ways of the Chrysanthemum in other collections as well as my own, and have often noticed in a plant, say, of Empress of India, that the weakest shoot supplies the most comely bloom. It is exactly the same with the family of incurved sorts that have sprung from the

variety Princess of Wales, most beautiful flowers certainly. I always attempt to get strength and substance in the plant by striking early and so on, but allow each to give from four flowers, otherwise a bud will contain too many florets to develop a perfect bloom. Some of the incurved class, which must, however, have strong shoots to get anything approaching a large and full flower, are the Princess of Teck family, Barbara, Golden Eagle, Refulgens, Nil Desperandum, Mr. Brunceles, Princess Beatrice, Novolty, Mr. Bann, and so on. The new class for thirty-six distinct incurved Chrysanthemums, which will appear in the schedule of the National Society this year, will no doubt induce some growers to cultivate again old sorts that have been discarded. This is well, perhaps, for, although small, many of the kinds of past days are pretty. Among them may be mentioned Aimée Forrière (ronsemed Mms. Gayral) (white, tipped purple), Baron Beust (chestnut-red), Chernb (orange-bronze), Isabella Bott (pearly-white), Lady Carey (rosalilac), White and Pink Venus, Nonpareil (lilac), Beauty (blush-pink), Eve and Mabel Ward. H. S.

3444.—**Chrysanthemum cuttings.**—The plants are making their first natural break, although it is early. So much depends, however, upon the manner in which the plants have been grown. If in their early stages they were kept rather warm, or if the growth has been in any way drawn up through want of light, or a sufficiency of air to keep them stocky and backward in their growth. All these matters of detail tend to hasten or retard the first natural break, as the case may be. As "E. H. P." speaks of the three shoots formed below the bud, it appears to be simply a case of premature growth, and not, as he fears, persistent bud formation. Pinch out the flower-bud at once, and all growths but three of the most promising. These are generally those nearest the point where the flower-bud formed. By removing promptly all surplus shoots as well as the bud, the whole energy of the plant is concentrated in the selected three shoots. Place a light stake to the plant, securing loosely, yet firmly, the three shoots to prevent an accident. Should any of the plants show a flower-bud in the point of the shoot and give no prospect of new growths being made from the nodes below, cut the plant down to within 4 inches of the soil, and take up another shoot from the base.—L. M.

3445.—**Height of Chrysanthemums.**—It is difficult to say what height the plants will grow when managed as bushes by topping them twice, as so much depends upon what they are topped and what height they are allowed to grow before topping them. The position which the plants occupy during their early stages of growth has much to do with the height of the plants also. If they occupied a position somewhat dark, or a distance from the glass in the greenhouse, they would naturally grow taller than though they had been kept close up to the glass in all stages. It is much easier to give the approximate height of the plants when they are cultivated on the large-bloom principle. If "W. D." intends topping them twice, I should advise that the first take place at 4 inches from the soil, repeating the topping when 5 inches more growth is made. Presuming that pots, 9 inches in diameter, are employed, the plants will grow something near the undermentioned height: Mons. Bernard, 3 feet; Sourco d'Or, 4 feet; Bouquet Fait, 5 feet; W. Robinson, 5 feet; Roseum superbum, 4 feet 6 inches; Maiden's Blush, 5 feet; Val d'Andorre, 3 feet; Pistor the Great, 4 feet. The Pompons and Anemone Pompons named will grow on an average 3 feet high. Pots 8 inches in diameter, inside measure, will suffice for this section. Porter's wire-woven crocks are the best preventive of worms entering the pots. Place one at the bottom of each pot, adding the ordinary quantity of drainage beside. Should any worms find their way into the soil, however, lime-water will cause them to come to the top of the pot by soaking the soil thoroughly once. Place a handful of quicklime in a 3-gallon can of clean water, well stirring it, and allow it to settle. If the limes does not settle to the bottom of the water, but is held in suspension, and porous, it cannot be made too strong, because the water cannot contain more lime

thao a certain quantity, which is harmless to plant-life. Be careful, however, not to stir the water when applying it, but pour it on gently, leaving the sediment at the bottom. If one dose does not remove all the worms, give another in ten days.—E. M.

3434.—**Early Chrysanthemums.**—The following varieties will be found to succeed out of doors, but the manner in which the plants are managed, and the weather experienced during the month of August and September, will much determine whether all will flower before the end of the latter month or not. They all will before the middle of October, at any rate. The best way to treat the plants is to allow them to grow without any topping of the shoots whatever. In this manner they will flower earlier than though the points were pinched out of each once or twice. Should the weather be hot and dry during the summer, the plants will derive much benefit from copious supplies of water and occasional doses of liquid-manure, not too strong, and a light mulching of

PROPAGATION OF TREE PÆONIES.

IN reply to "J. R.," "S. J.," and "Brixtonian," these are generally propagated by grafting on the stout, fleshy roots of the herbaceous kinds. Increased in this way, plants make much more rapid progress, especially during their earlier stages, than do those that are raised from cuttings. The present season is very suitable for grafting; indeed, from now till the end of August is the best time of the year for carrying out this operation. The most suitable stocks are any of the numerous varieties of *P. albiflora*, and all that is required is to take the tuber (leaving on it as many fibrous roots as possible), and having fashioned the scion in the form of a wedge, the upper part of the fleshy root must be split for a certain distance, and the wedge-shaped base of the scion inserted therein. It must then be tied securely in position, and the point of union covered with grafting-wax in order to render all air-tight. Of course, in inserting the graft in position, care must be taken that the bark of

planted out or potted into larger pots. During the winter care must be taken not to overwater them; indeed, they will require very little water while dormant. Layering is also another way by which Tree Pæonies can be increased, but of course it can only be used where there are good-sized specimens, from which a few branches can be readily spared. This operation is best carried out in the autumn, when the portion of the branch that is to be buried must be partially cut through, and a tongue formed as a nucleus from which the roots will spring. The branch must be held firmly in position by a peg or pegs, and if the soil is attended to in the matter of moisture roots will be formed the next season. Besides these methods, when a plant is established on its own roots it can often be split up into several pieces, leaving sufficient fibrous roots on each to support it. Seeds seldom ripen in this country, but when they are obtained no time should be lost in sowing them, a good soil for the purpose being an open, sandy loam. After sowing the seeds they should be



OUR READERS' ILLUSTRATIONS: Tree Peony at Eston Lodge, Monkstown, Co. Dublin. Engraved for GARDENING ILLUSTRATED from a photograph sent by Mr. Greenwood Pim.

partly-decayed manure spread on the soil for about 1 foot wide around the plants. This keeps the roots cool during dry weather, and arrests the evaporation of moisture from the soil. Mme. C. Desgrange, white; G. Wermig, pale-yellow; Mrs. Hawkins, rich yellow; Lady Fitz-Wygram, white; E. G. Anderson and Son, golden-red, reverse crimson; Bouquet Estival, deep-rose, reverse silver; M. E. Pynaert Van Geert, yellow, striped bright-red; Lady Selborne, white; Isidore Fereol, rose-lilac; Grace Attick, white; W. Holmes, rich-crimson-brown; Mme. la Comtesse Foucher de Cariel, red and orange.—E. M.

3427.—**Rabbit-manure.**—I should say that rabbit-manure is not good for flowers or anything else. I have never used it, but from what I have seen of its influence on Grass where these creatures abound in a wild state, it certainly does not point to its possessing any manurial value, but rather the other way, for Grass refuses to grow where there are many of their droppings. A tablespoonful of soot mixed with a pint of soil would be a safer stimulant to use.—J. C. T.

both stock and scion fit perfectly; and should there be a very great difference between the two in size, the wedge-shaped portion of the scion may be so fashioned that an exact union is effected only on one side. The most suitable grafts are the good clean shoots without flowers, although when any particular variety is required in quantity the shoots that have flowered may also be used for the purpose. After grafting, these Peonies must be potted sufficiently deep in the soil to completely cover the point of union, and for some it will be necessary to use pots deeper than the ordinary size, as the thick fleshy roots will prevent the plant being buried low enough in the soil. After this is done they may be placed in a close frame, and care must be taken not to overwater till a union is complete, which, generally speaking, will occupy about a month. No heat is needed for carrying out this operation successfully, but the plants must be carefully attended to in the matter of shading, watering, and other particulars. After a union is complete the better way is to leave the plants in the frame till spring, when, after the danger from frosts is over, they may be

placed in a frame, where they will lie a long time before germination takes place, and as their rate of progress afterwards is by no means rapid, it is necessary to wait several years before they flower. The accompanying illustration shows a fine old specimen of Tree Peony in flower. G.

3391.—**Liquid manure.**—Bedroom slops would hardly suit; in fact, would be in every way objectionable. If you have absolutely no space to keep liquid-manure in, you should get some good, well-decayed manure a week or ten days before you want to use it. Soak it in water, say a gallon of water to a good shovel-ful of well-rotted manure. Keep it occasionally stirred until fit for use. The solids left in the mixing-tray can then be dug into the ground if wanted, more or less water to be used as strength is wanted.—S. I.

3390.—**Anemones from seed.**—Sow the seed now in boxes of fine soil, and when the young plants have grown a little prick them out in boxes or in a border 3 inches apart. When the leaves decay dig up the small tubers and plant them again in October. They must be under glass to sow in February or March.—J. D. E.

OUTDOOR PLANTS.

PYRETHRUMS.

It does seem somewhat odd that such very hardy herbaceous roots as are Pyrethrums should yet be so impatient of division and even of removal. Ordinarily all such roots may be divided with ease and safety. These particular plants, however, are exceptions, and need very much care in their winter culture; still, it is far from being difficult to increase stock once the varieties are established, by taking off some of the young growths early in the year and putting them singly into tiny pots, rooting them quickly in a little bottom-heat, and thus ensuring in that way not only an abundant stock, but a constant supply of young plants. When such is the case, it is not worth while to trouble about the retention of very old roots, which may in such cases be dispensed with. Shoots invariably break up rather more thickly from well-established roots than is desirable for retention, and therefore the thinning of them out for the purposes of propagation is good at once to increase stock and to give stouter growths for producing flowers. But it is not easy for the most enthusiastic fancier of these hardy flowers to keep pace with raisers of new varieties, even if thought desirable. Possibly any beginner in the cultivation of Pyrethrums would find it difficult enough to make the best selection of a score of double and the same number of single forms out of such a stock as even Messrs Kelway and Sons have, for their catalogue over 100 double and nearly as many single sorts, whilst other raisers have sorts in abundance. A good selection from any list is not easy, because the differences between one and another or between one score sorts and another score is perhaps trifling. The real advance made in Pyrethrums is not to be measured by comparing one variety with another so much as by contrasting what was the best of twenty years ago with the best of to-day. It is especially interesting to find how in that time single forms have become popular. It is very probable that, as a rule, they are more so than the double forms are, for after all a double Pyrethrum flower is not one of the most pleasing or attractive forms, especially for what is termed domestic decoration, much as they may be in favour with those whose chief notion of the value of flowers is that they are of rotund form, very enduring, and good for exhibition. The single Pyrethrums have given to us in their large Daisy or Marguerite hoods colour so charming, that they almost resemble Paris Daisies artificially coloured, for it is difficult to tell them from the popular Marguerites, except by their colours. One particular advantage found in having young plants from cuttings put out every year to bloom is that they not only flower later than do old plants or stools, but may be still later if the flowering-stems be pinched when half grown, so as to encourage the throwing out of side flowers, which, if smaller than are the ordinary ones, are not the less welcome because the bulk of the blooms is over. Pyrethrums like a deeply-worked and fairly holding soil, well manured, and very clean. Each winter a top-dressing of short manure, lightly forked in, will be productive of much good. It is, however, perhaps best to leave the addition of dressings of this sort until after the needful stock of cuttings has been taken from the stools. The plants should have ample room, as the growths spread widely if not unduly bunched in the tying up. A.

3387.—**Violets for outdoor culture.**—Violets deserve to be well cultivated, and this must be if very fine flowers are desired. The position for the plants should be open, and the soil fairly light, not too rich, as upon very rich ground they run to leaf, and bear very few flowers. If the soil is heavy it must, therefore, be lightened by the addition of gritty material, such as roadside scrapings. This is a very good season to plant, finishing the work before April is over, but the earlier the planting is done the better, as then the plants get well established before they are likely to suffer from hot and dry weather. The rows should be one foot apart, and the plants nine inches apart in them. Take care to make a good commencement by having strong, sturdy examples, as with these subjects it is not possible to get satisfactory

results. Showery weather should be taken advantage of for the work. When the planting is finished, give a thorough watering to settle the soil about the roots, and a surface-dressing of well-decayed leaves or similar material is an advantage, as the soil is kept cool. Red-spider also does not get the same chance of inflicting injury, and the plants are not splashed by heavy rains beating up the soil. The after-treatment is very simple. Always keep Violets during hot, dry weather well supplied with water, keep down weeds, and a slight stirring of the soil occasionally is also beneficial. Remove runners as they appear. Against walls Violets get red-spider, and it is a mistake to suppose they will not bear sun. They stand a good deal if the soil is satisfactory, though, of course, a hot, parched, exposed place is most unsemitable. There is more than one way of increasing Violets. They are easily raised from seed, which should be sown as soon as ripe, whilst the plants may be readily divided as you suggest, getting nice tufted pieces, and if the shoots have not been taken off in the roots place them in rows in a cold frame. Any old frame will suffice, and they will succeed well. Treat them, in fact, like cuttings. Another way of increasing Violets: Early April is a good time to divide your old plants, taking care to have good soil, well dug, and, if poor, manured. Such varieties as the Single White, Double Red, Odorata rubra (double blue), Belle de Chatenay (double white), King of Violets (very rich blue), the flowers large and very fragrant, Marie Louise (too well known to need description), The Ruesian, The Czar, and Welliana, which last is very sweet, and lasts in bloom a long time.—C. T.

Grape Hyacinths.—Amongst the most charming of early spring flowers are the Grape Hyacinths, or Muscari, of which there are several kinds. The most popular is *M. botryoides*, and there are several varieties, as album (white), and pallidum (pale-blue); but some are named according to their shade of colour. This is a common and not desirable practice. *M. armeniacum* has deep-blue flowers, which appear later than the above. The Grape Hyacinths are well worth growing in the smallest garden, and where possible may be naturalised in the Grass. A row in the front of the border, or in a bed, is very pleasing, and light, sandy soil suits them best. The flowers remain in beauty also for a considerable season, displaying pretty shades of blue.—V. C.

3430.—**Annuals for show.**—All annuals that are to flower during the summer should be sown at once. If they are sown later they rush into flower quickly when dry, hot weather comes, and then they are of no use for show purposes. Sow in good ground, and as soon as the plants are 2 inches high thin them out to 9 inches apart each way. Besides those you mention the Sweet Sulden and Larkspur are two useful subjects to flower in August, and Sweet Peas are very easy to grow, and will flower at that time. If there is a stated number to be shown you had better have a few more, so as to give you a greater choice.—J. C. C.

3401.—**Sowing Grass seed.**—The mode you should follow is this: Before sowing your seed rake your lawn thoroughly, tear the ground up, then sprinkle fine earth all over very evenly. Sow your seeds and roll well. If your roller is very light roll it several times, say three times a week—lengthways and crosswise. This is to keep down worm-earths especially. When your seeds show about an inch above the ground roll once a week regularly. It will not hurt the tender young Grass. It will have a beneficial effect, and will consolidate the "seed-bed." I am sowing a tennis-ground myself in this way, and it leaves nothing to be desired. If very hot weather at a stretch comes, sprinkle with a watering-can at dusk, so that the plants and seeds may have the benefit all the night and well into the next day. Above all things, keep down the worm-earths by good rolling. Nothing will grow on or around them if allowed to remain.—S. J.

3422.—**Planting Clematises.**—It is perfectly right to water Clematises at this season on planting them out. A little old leaf-mould or manure over the roots as a mulch will also be beneficial.—E. H.

—If they were pot-plants it would not hurt to plant them out now, although if we get much frosty weather here it will probably check their growth. Clematises if lifted from a nursery would be most safely planted in the autumn.—A. O. BULLER.

NOTES ON DAFFODILS.

THE Daffodil is in full beauty now, and it will be useful to readers of GARDENING to make a few notes upon the flower. Everyone almost may grow the bulbs, and its culture amongst amateurs is rapidly increasing, who, as, if they will, grow as fine flowers as any that come from the nurseries or such great market places as Mr. Walter's, at Ham Common, near Richmond. The splendid blooms of Horsfield in particular seen in the market in April are grown there; but the amateur is not so well placed when exhibiting, as the larger the stock the greater chance there is of getting fine flowers. It must be a poor garden that will not grow Daffodils, no special preparation being necessary, simply a little attention to a few details. One very great point, and it applies to hardy bulbs in general, is to buy them early in the autumn. This advice may not appear reasonable now, but whilst the flowers are tossing about in the soft wind of an April day it is a time to make cultural notes. If the bulbs are planted late the chances of a very fine display are lessened, as when planted early they have a good season before them. Some amateurs delay planting as late as November; but the best time of all is early in September, when the soil is, as a rule, in excellent condition. Another error into which amateurs frequently fall is in allowing the bulbs to remain year after year in the ground without lifting. They then often refuse to flower, and complaints are rife that the Daffodils are not an easy to grow as writers assert. Several queries have recently appeared in GARDENING asking for information as to the cause of their bulbs not blooming. It must be remembered that Daffodils increase rapidly, and require lifting at least every three years, but better if two years only elapse, and it is the practice with market gardeners to lift the bulbs every year. I know of one large Daffodil nursery where the bulbs are lifted as soon as the foliage has died down, cleaned, dried, or replanted again in early autumn, the first to be treated being the charming *Poet's Narcissus*, or Pheasant's-eye, as it is familiarly called. The soil for Daffodils need be only good garden ground, such as amateurs usually possess. Of course, when the flowers are produced for market the land is well ploughed up, and in case of the hold "trumpet" kinds well manured. It is strange that, in spite of the popularity of the *Narcissus*, the list of varieties grown should be so small. I have been in many small gardens where plants are cared for and never seen the beautiful "bicolor" variety named Horsfield, for which we have to thank a Lancashire weaver named Horsfield, who was an ardent lover and raiser of flowers. Horsfield is possibly the finest of all Daffodils, the flowers true coloured, hence the description "bicolor," the broad segments or perianth of a creamy-white, and the trumpet rich self-yellow, very handsome. It grows vigorously, increases rapidly, and blooms with great freedom. *Empress* is very similar, and the flowers appear a little later, whilst they remain in full beauty over a longer season, through the greater substance of the segments, the bulbs also increasing more rapidly. Amateurs should make a note of these two fine "bicolor" trumpet Daffodils. Before March is over the yellow trumpet kinds begin to bloom, and one of the first of all is Golden Spur, a very free, robust, and striking variety, the flowers large and rich-yellow in colour. Later, but strikingly handsome, is *maximus*, which is not, unfortunately, so free-blooming as one would wish for. The flowers are very large, are of the deepest self-yellow colour, unannually rich and striking. Nor must be forgotten the *Emily Tenby* Daffodil, or *N. obvallaris*, which has flowers of a fine yellow colour, very neat and compact in shape, free, and in all respects desirable. One has only to notice this by the quantities sold in the Loudon streets in later March, and I believe that no other Daffodil is so largely grown. Countess of Annerley is a fine beautiful yellow trumpet kind, and may be mentioned amongst the best. *Paltinus* precoc is desirable for its earliness; it begins to bloom at the end of February, and there is considerable charm in the dainty pale sulphur-coloured flowers. They vary a good deal, and some of the more distinct "kinds" have received distinctive names, but this is a mistake. It is, unfortunately, rather usual to give names

to flowers that show a slight difference from things already in cultivation. As a rule, the pale-coloured Daffodils are troublesome to grow, especially that section represented by *Cernuus*, or *Cernuus pulcher*, although these are less fastidious than the majority of their kind. The soil for the bulbs should be light and thoroughly well drained. At the base of a warm, sunny wall they usually succeed well. I can give a wrinkle here as to the best way to gather Trumpet Daffodils, and that is always when the flowers are about half open, not in the bud, or when fully expanded. The half-opened buds expand well in water, and do not get sullied by the weather. It is important to notice that the Poet's Narcissus should not be so much open, and, in the case of blooms for the market, they are cut quite in the bud stage, and opened under glass, as they are much fresher and cleaner than those gathered from the open ground. These remarks apply in the case of the Irises particu-

with a distinct orange-scarlet rim to the cup, whilst the latter is white, and very sweetly scented. This reminds me how great is the variety of aspect to a collector of Narcissus. The foliage of the bold trumpet kinds is broad, and of a very beautiful glaucous colour, whilst that of the Leeds and other groups is as graceful as a Grass. The flowers often show great diversity of form, from the big Trumpet Daffodil to the Pheasant's-eye Narcissus. The only fault of such kinds as *Duchesse de Westminster* is that they are rather tender, and must be given the warmer positions in the garden. Very popular are the deliciously scented Jonquil, the Camperello, *N. odoratus* and its variety *rugulosus*, which have rich yellow, very fragrant flowers, and the fine old double kinds, represented by the Sulphur Crown, Orange Phoenix and the beautiful double variety of the Pheasant's-eye, an exquisite flower, pure white, very full, and of rich fragrance. I ought

are intended simply as a guide to those who are determined to grow Daffodils, and no flower of the spring deserves to be better grown. It is pleasing when planted in clumps on the border, in colonies in the woodland, or near trees, especially if the stems rise above a tuess of Ivy. The effect of the rich yellow flowers and deep-green leafage of the Ivy is remarkably rich. It is by such contrasts of colour that gardens, both large and small, are made more interesting. The Hoop Petticoat Daffodils are more suitable for pots, although *Citrinus* is, as far as I have grown it, the hardiest of the section, the large pale-yellow flowers being distinct and pleasing. The hulbe like a rather sheltered position and moderately light warm soil. The *Corbulariæ* are charming in pots, and also the *Polyanthus* Narcissus, which are excellent for the greenhouse. I have a collection in full bloom now, the flowers ranging in colour from white to intense orange. C. T.

ROSES.

348—Roses all the year round.—To get Roses all the year round is entirely a question of good management. You certainly ought to be able to cut a few every Sunday in the year. If you keep some of your pot plants backward as possible each spring, through standing them on the north side of a wall or fence from now until October, they will make comparatively late growth, and this may be flowered well by the aid of a little protection in your cool-house. Such plants would bloom throughout November and December. Another batch should be grown on as forward as possible now, ripened off out-of-doors during August, and started steadily in November next. These will bloom in January. As to when the plants should be introduced from the cool to the warmer house, much depends upon the temperature as well as upon their stage of growth. If well ripened they will flower freely in a heat of 60 degs. to 70 degs. You have probably noticed how very full of young growth most of the Tea-scented and Noisette varieties are during late autumn, and that this is checked by the frost. If you can secure similar growth upon pot plants, and give the house protection, they will produce a batch of blooms during mid-winter.—P. U.

You appear not only to know what you want, but you evidently have some practical ideas how to obtain it, and as you have ample appliances there is no difficulty whatever in obtaining Roses all the year; but with a view to lessen expense and labour your first efforts should be directed to obtaining all the flowers you can from the open air. If you have a wall or close fence facing south you may get blooms of Tea Roses at the end of May from such varieties as *Mme. Lambert*, *Safrano*, *Marie Van Houtte*, *Mme. Falcot*, and *Isabella Sprunt*. To second these there will be the Hybrid Perpetuals, which can be had in any quantity. The next point is to secure flowers through the autumn. To accomplish this you cannot do better than have another batch of Teas in a bed or border that is fairly well sheltered. You will find some beautiful varieties amongst the following: *Grace Darling*, *Dr. Grill*, *Countess of Folkestone*, *Perle de Lyon*, *Mme. Eugène Verdier*, *Catherine Mornet*, *The Bride*, and *Lady Mary Fitzwilliam*. There are two good Bourbon Roses that are invaluable for autumn flowering. These are *Queen of Bedders* (crimson) and *Souvenir de la Malmaison* (flesh-colour); add to these the good old *Gloire de Dijon*, and you have some of the most reliable of hardy Roses. Some useful hardy early flowering Yellow Roses will be found in the Austrian Briers. The best with double flowers are *Harriouni* and *Persian Yellow*. Coming to the part of your question that refers to forcing Roses, you are probably aware that your greatest difficulty is to obtain Roses from the beginning of November to the end of February. This, however, can be done if you choose suitable varieties and have a sufficient number of plants. For this purpose the selection should be confined to the Teas, but those with very full flowers, like *Souvenir d'un Ami* and *Sombreuil* should be avoided, as they require a high temperature to get them to open. My selection would be *Lady Gales*, *Luciole*, *Mme. Charles*, *Mme. Lambert*, *Mme. Etienne Levet*,



Flowers of a good type of Daffodil.

larly. The flowers should always be cut when half open. Every amateur should grow the variety of *N. poeticus* named *ornatus*. It is exceptionally free, very early, and easy to grow. Before any other kind in this particular section it should be thought of. Very charming also is *poeticus*, while *grandiflorus* is also of note. But as a rule not more than one variety is required, and that should be *ornatus*. I point out merely a few of the finest, as some 600 kinds are named. To cultivate even a small proportion of these is not necessary, and the several sections as *Barri*, *Incomparabilis*, and *Leedsii* comprise such a host of forms, differing merely in degree. The king of the *Incomparabilis* Daffodils is unquestionably *Sir Watkin*, which since its introduction a few years ago has become remarkably popular. The flowers are of very large size, the perianth broad, and the cup also, whilst the colour is a pleasing shade of yellow. Two very charming varieties are *Barri conspicuus* and *Leedsii Duchesse de Westminster*. The former of the two is a very graceful flower,

to have mentioned amongst the trumpet varieties *Emperor*, which is one of the finest of its section. Those who have sufficiently large gardens should plant in little groups or colonies the charming *N. minor*. It makes a dense carpet of flowers, small, but of a good yellow colour, in March, and for this reason should be planted freely on the rockery. I should like to see these dwarf Daffodils more grown, as they give bright colour to the border or rockery very early in spring, before Daffodils in general have commenced to bloom, and will grow in ordinary soil and position. The amateur is not wise to grow the little *N. minimus* or the very distinct *N. cyclamineus* unless he cares for Narcissus greatly, as they are not amongst the easiest to grow. *N. minimus*, so called because the flowers are of such small size, yet of exquisite shape, just like a very small edition of our common wilding, should be grown at the least in a wall, and *N. cyclamineus* likes a boggy soil. It is in its native home (Spain) found by the side of water. These few notes

Niphetos Jean Peruet, Francis Krüger, Anna Olivier, Catherine Mermet, Innocente Pirola, and Jules Figeat. If you had two each of these and divided them into two batches, you would probably get all the flowers you want during the time mentioned. If the first lot was placed in a warm-house at the beginning of October they would succeed those in the open ground. The next lot should be started gently with a little fire-heat about the end of November. With regard to the treatment of pot-plants, I would not let them flower now, but shift them at once into larger pots if they require it, and prune them slightly a month later. You had better, however, aim at getting rather large plants before you prune much. Even in your small houses the plants ought to occupy 12-inch and 11-inch pots as soon as they are large enough. Take all the plants into the open air about midsummer, and bring them under cover again at the end of September. Give weak manure-water always when the plants require root moisture.—J. C. C.

TREES AND SHRUBS.

2135.—*Garrya elliptica*.—This is an excellent hardy evergreen shrub for a south wall, but in our garden it does very well as a bush. If a good-sized plant is put out it would produce its flowers the second season. The catkins are produced on the plant which produces the male blossoms. Female blossoms are produced on a separate plant. It is a generally cultivated shrub, and very handsome when not in flower.—J. D. E.

— These are generally kept in pots by nurserymen, because they are not particularly safe to remove when once grown in the open ground. If you mean by an "established tree," one from the open ground, it is too late to move it this season; nor could a well established plant of this be moved with much prospect of success. A plant from a pot could be turned out at any time, and if a fairly strong one, you may expect to get a crop of catkins next autumn and winter.—L. U.

— As a rule nurserymen grow the plants in pots. In that case they can be planted at any time of the year. I should, however, advise the plant to be put out at once so as to give it a long season of growth. If a strong plant is procured some few catkins might be had this year, but certainly there would be next year. This plant grows very fast when the conditions are favourable—a deep root-run, fairly rich soil and abundance of water, both at the roots and over the foliage during the summer. Very often wall climbers are checked in their growth for want of sufficient moisture at the roots, as few persons seem to realise the amount of moisture that is absorbed from the soil by a brick wall. In consequence of this the plants suffer. Some care is needed in pruning the *Garrya* at any time, especially when the allotted wall space is covered. The more it is pruned the fewer catkins will be produced. It is not possible to keep this plant very neat and close to the wall and still have a full crop of flowers. A fair amount of freedom must be allowed if a quantity of flowers are expected.—S. P.

— The *Garrya* might be planted now. They are usually kept in pots at all large nurseries. There are two varieties, male and female. It would be interesting to have both, though in either case it would be impossible to say how long one would have to wait for catkins.—E. H.

3137.—**Height of Cupressus Lawsoniana lutea**.—Although this *Cypressus* is the strongest grower of all the Golden or Variegated forms of Conifers, I think the one referred to in this inquiry is an exceptionally fine specimen, as I have not seen one approaching anything like the height mentioned. I planted one about twelve years ago, which grew away at once in the most satisfactory manner, but it is not near the height that is given in the enquiry. At the same time I planted all the so-called best forms of the Variegated and Golden Conifers, and the best I can say of them is they are disappointing, as they rarely look happy.—J. C. C.

3369.—*Araucaria imbricata*.—If the seed is fresh it is not a difficult task to raise plants from it. I have raised plants from seeds saved in England. They were planted half an inch deep in the ground in flower-pots

filled with sandy loam in the autumn. The pots were placed in a cold frame, and the soil kept moist until the plants appeared. They were left in the pots for a year, and planted out in the open ground after a year's growth. There is no difficulty at all in rearing plants. They are, of course, of very slow growth.—J. D. E.

3430.—*Passeflora Constance Elliott*.—Where too thick you can thin out some of the straggling shoots, but train in the others if you have space. When quite small I think it strengthens all Clematises to cut them back at the end of the season, and cover with well-decayed manure and ashes; but when plenty of strong shoots have been made, it is enough to thin out and shorten them.—A. G. Butler.

— Prune back the weak side shoots, but let all strong wood remain, laying the shoots in at equal distances apart.—E. H.

LATE PLANTING OF BULBS.

It is singular that, with all the notes appearing in GARDENING urging the importance of early planting of bulbs purchasers will often defer making their selection until the time the bulbs ought to be fully established and showing their flower-spikes; and when one reads of the clearance sales of bulbs in February, March, and even later, which ought to be planted in October, one cannot but think that the descriptions of "sound and plump" are rather relating to what they have been than what they really are. Any one purchasing these apparently cheap lots will find that they are by no means cheap when the quality of the flowers they produce is taken into consideration, for the very life has long since been dried out of them. Doubtless they will make a feeble attempt to bloom, but the spikes will be only a caricature of what they would have been if planted two months before Christmas, so as to get well rooted before severe weather set in. It is too late to remedy the planting of Hyacinths, Tulips, &c., but don't let the same thing happen with Gladioli and other late summer bulbs. Especially are Lillies liable to injury by excessive drying and keeping out of the soil. Plant early, for if any danger from frost occurs it is easily remedied by a covering of litter, and the bulbs are rooting and gathering fresh strength if underground, but losing their vitality every day they are unnecessarily kept out of it. If anyone is sceptical on this point, he has only to lift any bulbs left all the year in the ground, and note the early date at which they make fresh root, to convince him how unnatural the excessive drying process is.

J. CROOK, Gosport.

GLADIOLI IN BEDS AND POTS.

Those cultivators of this grand autumn flower who grow the choicest kinds, mostly of the *Glandavensis* section, for exhibition, recommend that the ground should, during autumn, be deeply trenched and heavily manured for the reception of the corms or bulbs this month. They mark the selected spot of the garden into narrow beds 3 feet or 4 feet wide, with paths between. Each bulb is allowed about 1 foot of space and planted 3 inches deep. As soon as growth is observed above ground the beds are mulched with rotten manure, which is left on the surface all the summer. Tying is resorted to and liquid-manure is applied to aid development. After flowering, when the leaves begin to fade, they are taken up, left in the open for a few days to expel moisture, and are stored away with care, as many may be valued at half a guinea apiece. Bulbs of the commoner, but by no means less useful, sorts may be had, however, at a much cheaper rate, and, besides exhibiting it, there are other uses for this plant which make it invaluable in any garden. In hardy plant borders, in front of the green foliage of Rhododendrons, between standard Roses massed in beds, or in clumps at intervals near kitchen garden walks, these are positions in which Gladioli serve a useful and showy purpose. To grow them in the ordinary way any soil will do, but a little manure will greatly assist, and should be dug in where a clump of bulbs, say five or six, are to be planted. A handful of some approved fertiliser will answer the same purpose and is more easily applied, being scattered in the hole made at the time of planting. *Brenckleyensis* (the well-known scarlet) may be bought at a 1d. per root, and mixed hybrids of *Peolons* from 10s. per 100. Gladioli flowers are most excellent for cutting, and when wanted in this state should be cut at an early stage and

allowed to open in water. It will be found that their beauty is not so fleeting as when left on the plant to open. In pots these are useful for conservatory decoration and also for anticipating the outdoor flowers. Plant about three of the large-flowering section in an 8-inch pot, using any ordinary potting-soil. Cover them with Cocoa-nut fibre till the sprouting growth comes through this material, then allow them to grow on in a cold pit. Feed them constantly with manure-water and never allow the soil to become dry. It is well to leave the pots plunged until flower-spikes show colour, when they will be ready to give brightness to arrangements of Ferns, Palms, and so on. The miniature *Gladiolus* (*O. Colvillei albus* The Bride) is, for its distinct character, beauty, and simple culture, one of the choicest of greenhouse bulbs, so small that it is wonderful what charming spikes spring from the same. Do not delay with this sort, as the bulbs deteriorate after March. Mine are now about 3 inches above the soil; but by planting it in the pots about Christmas, as a rule it may be had in bloom if gently forced by June. From eight to ten bulbs should be placed in a 5 inch pot, and use the lightest soil obtainable. I have found to my cost it is not hardy, and requires some protection even in a cold frame during frosty weather. Yet I know of a large patch in an open garden which has been left undisturbed for several years, and goes on increasing every season. This, however, is on a slope where the soil, which is naturally of a light nature, becomes drained, therefore dry; and the bed is also protected with loose litter during winter. H.

3431.—Keeping cats out of a garden.

—If the garden is surrounded with walls or close fences, cats may be kept out, or, rather, they may be kept in when they come in, by running wire-netting along the top of the wall or fence, and bending about a foot, or rather more, of the top over at right angles. Have a few iron supports made of the right shape, and then fix the wire-netting to the iron supports. The cost would not be great; and wherever I have seen it tried it has been effectual. If the cats get in, when they tried to get back they would be balked by the bent netting.—E. H.

— The most efficient way of keeping cats out, since you object to killing them, is to put wire-netting on the top of your wall or fence and bend the top of it down away from your garden. The cats find it next to impossible to get over this; whereas upright netting, even with cat-wire along the top of it, does not keep them out, although it somewhat checks them. If your neighbours object to the wire being bent over towards their gardens, put it upright, lace cat-wire along the top and about 2 inches below, and inside the netting stretch a thin wire as tightly as possible. A cat always reaches down before jumping, and if her foot comes in contact with a thin wire she will draw it up again and retrace her steps.—A. G. BUTLER.

3371.—**Cinders and ashes**.—I do not know that these are really injurious to coniferous plants, but unless the ground be stiff they are of very little use. The fine, dust-like ashes obtained from burning coke cannot possibly be of any service to Conifers or evergreens.—P. U.

— There would be no benefit from digging ashes in near the roots of evergreen trees, coniferous or others, though I could not say that any positive injury would be done. In porous soil ashes spread over the surface checks evaporation, and I have seen instances when so used some good has been done.—E. H.

— If you mean are cinders and ashes suitable material to plant Conifers and evergreens in? I say certainly not; but if not mixed with the soil, only dug in away from the shrubs, no harm will be done, of course. I do not quite understand your query, but Conifers require a good loamy soil, and plenty of space.—O. T.

3377.—**Treatment of Carnations**.—These are by no means difficult to grow well; the soil or position may be unobtainable. They like a nice free sandy loam best; it should be made moderately rich, only with very old manure or leaf-mould, be perfectly sweet and well compressed about the roots. None of the Carnation tribe do much good in a loose ground. A moderately free admixture of old mortar rubbish, burnt soil, or both, is highly beneficial. Choose an airy and sunny position, and put out the plants early in the autumn if possible.—B. O. R.

— You give very few particulars. Possibly the plant you have has a very poor habit, as it is not a very garden Carnation that

has such a sturdy, vigorous, and healthy growth as many of the beautiful French kinds, which I hope will soon become grown well in English gardens. Are the plants old and in proper soil and position? as upon these particulars one can alone base a correct answer. It is impossible to give proper information with so few particulars before one. If the plants are from strong layers of last year, they should be robust and vigorous. A good garden Carnation should be of strong growth, with plenty of "grass," and produce a sturdy flower-stem, bearing a free display of flowers which do not split in the calyx, and are of a fine self colour, or shades of one colour, these being the more effective; the striped show kinds, or the bizarres, and other varieties are of little value for the garden to give a rich effect.—C. T.

FERNS.

A BEAUTIFUL SILVER FERN.

GYMNOGRAMMA PULCHELLA.

This species is one of the most beautiful of all the Silver Ferns upon account of its graceful habit, the delicacy of its fronds, and the purity of its white powder. It was introduced into

coloured farinose powder, and the ends of all the pinnules are more or less crested. The cultivation of this plant is not difficult, and it is thoroughly worthy of every attention. It requires the temperature of a warm stove and a moderate supply of moisture both to its roots and in the atmosphere; but the fronds must never be sprinkled with water from the syringes, as, if this is done, the farina is washed off the lower fronds, and the whole plant becomes disfigured and unsightly. In potting drain well and use moderately-sized pots, using for soil a mixture of loam, peat, and sharp river or silver sand. In winter reduce the supply of water, but never allow the plants to become dry at the roots at any time. H.

But there are some species of Adiantum which are never moved from the stove in winter; Farleyense, for instance, will not thrive in a lower temperature. Neither is it wise to dry it off at all, though, of course, all plants, Ferns included, require less water in winter. Pterises, for the most part, will bear a lot of hardships, especially as regards temperature; but they should never be dried or rested, in the usual sense of the term. The same remarks, in a less degree, apply to Maiden-hairs, the common Maiden-hair, Adiantum cuneatum, is sometimes dried off and then cut down just before starting; but the treatment is not natural, and if carried out with other Adiantums injury would result.—E. H.

— The temperature of nearly all plant-houses is, of course, lower in the winter than during the summer, so that even if kept in the same house they will be subjected to a lower range, and this is right and natural. At the same time very few of the varieties of either Pteris or Adiantum are truly deciduous, and I think they never look so well or grow so luxuriantly as when kept slowly moving in a generally warm and moist atmosphere at all, or nearly all, seasons. The temperatures of a cool fernery should never fall below 45 degs., and generally range from 50 to 60 or 65 degs. during the winter, and 10 or 15 degs. more in the summer time.—B. C. R.

— It is impossible to say why the young fronds of the Ferns turn brown without some particulars as to the treatment, &c. The atmosphere of the house may be too dry, or there may be too much steam from the pipes when syringing. What are the pipes painted with (if anything)? Fuchsias, Camellias, Calceolarias (herbaceous and shrubby), Chinese and other Primroses, Hsbrothamuses, Spiraeas, Celsia cretica, and Lapagerias will be most likely to succeed, but during the height of the summer you will find ordinary "Geraniums," Begonias, and others bloom freshly enough in a shady house.—B. C. R.

3428.—**Asparagus Ferne.**—The quickest way of working up a stock is to sow seeds, but it is not always possible to obtain good seeds; and then the next best course is to carefully divide the plants, partially shaking them out, so as to work in a sharp knife to separate the crowns. The young plants should be brought on in a warm, close house or pit till well established. Afterwards place in warm greenhouse. They make splendid room plants.—E. H.

— The plant alluded to is Asparagus plumosus, an elegant evergreen climbing plant from South Africa. It is an error to call it a Fern; it is not a Fern in any sense of the word. It requires hot-house treatment; but the plants would do well in the greenhouse in summer for a time after it has made its growth. The plants are propagated by dividing the crowns and planting them out separately in flower-pots. There is a dwarf variety, A. plumosus nanus, which is the best form.—J. D. E.

— I presume that by this term Asparagus plumosus (which is properly not a Fern at all) is meant. This elegant and useful plant thrives best in the temperature of a mild stove, a range of 60 to 75 or 80 degs. being very suitable. Seedlings make much the best plants; but as it is only old, large, and well-established plants that produce seed it may be some years before your plants will do so, even under generous treatment. Cuttings of the shoots, using short, starchy pieces or side-growths, may be struck in sand in a warm, close, moist, and shaded frame in the spring, or the old roots may be divided, and increase obtained in this way.—B. C. R.

3442.—Ferns, &c., in a greenhouse.

—The fronds of Maiden-hair Ferns are likely to become brown in a greenhouse, because they are really hot-house plants, and do not like the dry, cold air of an ordinary greenhouse. They will do in the greenhouse in summer when growth has been made, but should not be placed in a draught, for the tender fronds cannot endure it. One of the best plants for such a greenhouse is the Lapageria alba and rosea. Fuchsias, Pelargoniums, and Camellias are excellent plants, especially the Camellia. Geraniums (fragrant) is an excellent plant; and the sweetly-perfumed Daphne indica would be a charming piece of spring-flowering.—J. D. E.



Gymnogramma pulchella.

this country from Venezuela by M. Linden, of Brussels, about the year 1855. The fronds are supported upon a dark chestnut-brown coloured powdery stem some 9 inches long. They are triangular in outline, and upon well-grown specimens attain a height of about 18 inches, and from 6 inches to 9 inches in breadth. The segments are very finely divided, as will be seen by the annexed illustration, which has been taken from a portion of a frond some 2 inches long. The upper side of the frond is of a bright, lovely green colour; beneath it is covered with a dense, silvery-white farinose powder. G. pulchella has not produced many varieties. Occasionally a form appears amongst a batch of seedlings in which some of the segments are golden beneath instead of white, and in the variety Wettenthaliana the under sides of the fronds are densely covered with a sulphur-

3429.—**Treatment of Ferns.**—The common forms of Pteris and Adiantum, being cool-house Ferns, naturally should be grown in a cool conservatory or greenhouse, in which the night temperature in the winter would fall to from 45 degs. to 50 degs.; at this season, owing to the cooler temperature, growth would not proceed rapidly as in the summer, but would not cease altogether. Is this what you mean by their being at rest? The general idea of rest in a plant is that the foliage ceases to grow, turns brown, and dies off; but there is no advantage in disfiguring your house by compelling bardy Ferns to rest.—A. G. BUTLER.

— Ferns when at rest and kept dry may do in a lower temperature than they usually occupy; but there is nothing gained by keeping them in a lower temperature than 40 degs. at night, and many growers never let them fall below 50 degs.

ORCHIDS.

NATIVE ORCHIDS.

I AM asked by one, "Harry Windsor," what native Orchids are to be found in the neighbourhood of Duncester, and how to treat them? Well, now this is a part of Yorkshire that I have never been in, and, therefore, I am unacquainted with the soil of the neighbourhood, and it will not do to even guess at what he will find; but I advise him to search well, and to never go out for a country ramble without being armed with a trowel and a close tin-box. These plants are not likely to form such stout tubers, after the removal, for the first year, and very little flower must be expected the year after their planting in your border, and I should advise "H. W." to get some of the rarer kinds from Messrs. Backhouse, of York. Some few years ago, I had a lot of native Orchids in my garden near London, and a portion of it was devoted entirely to them, and was made up with soil to suit each particular kind, because those found

Orchids: but one can now scarcely find a single specimen in a day's hunt for them. So do not set about your hobby in a too avaricious manner. The following eighteen genera include all the kinds of British Orchids, some of which you cannot obtain in your neighbourhood, because they are very local in their distribution, beside being rare: *Aceras anthropophora* (Green Man Orchid), chalky soil and loam; *Cephalanthera*, chalky loam and sand; *C. ensifolia* (Sword-leaved Helleborine); *C. grandiflora* (White Helleborine); *C. rubra* (Red Helleborine); *Corallorhiza* (Coral-root), leaf-mould and peat, rare and local; *C. innata* (Coral-rooted Tway-blade); *Cypripedium* (Lady's Slipper)—see illustration; this used to be in your county, but is now extinct; chalky loam and sand. *C. calceolus* (Yellow Lady's Slipper); *Epipogon Gmelini*, very rare and local; *Epipactis* (Helleborine), leaf-mould, peat, and sand; *E. latifolia* (Common Helleborine); *E. purpurata* (Purple Helleborine); *E. palustris* (Marsh Helleborine); *E. rubiginosa* (Rusty Helleborine); *E. viridens* (Green Helleborine);

(Lady's-Tresser), leaf-mould and peat; *S. festalis*; *S. autumnalis*, very fragrant; *S. gimmpara*, very rare and local. I think these comprise the whole of the species of our native Orchids, but some few species might be found from amongst the North American and other cool country Orchids, which may be made available to make the border more showy.

MATT. BRAMBLE.

THE PELICAN-FLOWER (CYPRIPEDIUM IRAPEANUM).

THIS flower is one of the Mexican beauties belonging to the deciduous terrestrial section. I am asked by "B. B. B." where it may be obtained and how to grow it? Well, now I must say that this is a species which I have never flowered, but I see no reason why it should not thrive well if properly potted in good brown, somewhat spongy peat and Sphagnum Moss, well mixed together, and grown in the temperature of the cool Cattleya-house. This plant is found in Mexico at an elevation of between 3,000 feet and 4,000 feet, and therefore it requires a slightly warmer place than the *Odontoglossums*; but although I had some very fair-sized clumps of this plant I have never had it in flower. It grew well enough, and the shoots duly ripened off and died away; but there was something in the rooting, I think, that did not agree with the species, or it should have been blessed with some of its rich bright yellow blooms, and I likewise should have been able to satisfy my enquirer and to tell him how to bloom it. The name of Pelican-flower is not given it from its colour, for this is of a rich bright golden-yellow, but from its large column, which is bent over and resembles somewhat a pelican or some bird plucking its breast and stripping itself of feathers. This plant has no companion to grow along with it, for *C. spectabile* and *C. pubescens*, together with several other kinds, are temperate, if not hardy, species, and so this plant stands by itself as a deciduous kind, requiring a warm-house. I do not know if this plant is capable of causing anything like the results stated by some writers to have been inflicted on them by several of these terrestrial species from North America; but I have worked amongst many hundreds of them and *C. Irapeanum*, and never felt the least tinge of poisoning; but a man that had worked amongst plants of this Mexican species appeared to be somewhat affected. His skin appeared to be suffering from some cause of irritation, but my own was quite unaffected. In answer to my friend's enquiries of where he can obtain this plant, I think I have seen Mr. Sander have some large pieces of it, and a few years ago I saw it in quantity in the Messrs. Backhouse's establishment at York; but whether either firm is now in possession of it I am unable to say, but, if not, someone should instruct their travellers to send this plant home, and now *Cypripediums* being so much in favour, there should be a brisk demand for it, and who knows but we may find it produce a pure-white form?

MATT. BRAMBLE.



Lady's Slipper (*Cypripedium*).

growing in chalky soils will only live in a similar mixture; others, again, thrive best in leaf-mould and peat, whilst others require loam and peat, and some sharp sand may be applied to all the beds. Take care that the border is properly drained, for although some few kinds do grow naturally in marshy places, it is very seldom these can be imitated successfully in an artificial state, and such kinds must receive a greater amount of water to their roots. The border should be sown with some dwarf ornamental Grasses, larger kinds being set out singly at intervals, and a few annual seeds should also be dropped in here and there; but the Orchid should always be left clear from these plants. I cannot point out any feature so that you may be able to distinguish them by; but if you have no knowledge of these plants, get acquainted with someone in your neighbourhood who has, and get a few practical lessons from him. One word, however, of caution—do not ply your trowel too freely, so as to exterminate these pretty and interesting plants, for I know some places, especially in the south, which used to be famous for the Bee and Spider

Goolyera, leaf-mould and sand, local and rare; *G. repens*; *Gymnadenia* (Fragrant Orchid), chalky loam; *G. conopsea* (Red-handed Orchid); *Habenaria*, leaf-mould, peat, and sand; *H. albida*, very fragrant; *H. bifida* (Butterfly Orchid); *H. viridis* (Frog Orchid); *Herminium* (Musk Orchid), chalky loam; *H. monorchis*, odour of Musk; *Liparis* (Fen Orchid), leaf-mould and peat; *L. Loeseli*; *Lileta*, leaf-mould and peat; *L. cordata* (Lesser Tway-blade); *L. ovata* (Tway-blade); *Malaxis* (Bog Orchid), leaf-mould and peat; *M. pallidosa* (Marsh Tway-blade); *Neottia* (Bird's-nest Orchid), rare and local; *N. Nidus-avis*; *Neottinia* (Small Moth Orchid), rare and local, chalky loam; *N. intacta*; *Ophrys*, chalky loam; *O. apifera* (Bee Orchid); *O. aranifera* (Spider Orchid); *O. nuceifera* (Fly Orchid); *Orchis*, chalky loam; *O. hircina* (Lizard Orchid), very rare and local; *S. rutifolia* (Marsh Orchid); *O. laxiflora* (Loose-flowered Orchid); *O. mascula* (Purple Orchid); *O. maculata* (Spotted Orchid); *O. Moris* (Green-winged Orchid); *O. militaris* (Man Orchid); *O. pyramidalis* (Late-flowering Pyramidal Orchid); *O. ustulata* (Dwarf Orchid); *Spiranthes*

2438.—*Nerine carnifera*.—This is the well-known Guernsey Lily, and may be purchased in the seed shops when the flower-scapes are showing, the bulbs having been kept quite dry for some time previously. Grow them in flower-pots very freely over a dung-bed, with a gentle bottom-heat, in a garden frame. They need a good season of growth, and when the leaves decay keep them quite dry at the roots. They need not be repotted every year.—J. D. E.

— Do you take care of the leaves when they do come up by giving them a warm greenhouse all the winter, with moderate supplies of root-moisture, and guard them from being injured or kept in a dark position? If you do this the bulbs ought to flower every autumn. During the summer they should have no water, and the pot stood on a shelf in the greenhouse, fully exposed to the sun. If they are potted in fresh soil once in two years, that is often enough, and the proper time to do so is in August, or directly after they have gone out of flower.—J. C. C.

2659.—Weeds.—It would be better to get some good weed detector, or a sprinkling of salt applied on a damp day will assist you. There are many good articles advertised, but always take care not to let the material touch the Grass edge.—C. T.

FREESIAS.

THESE beautiful flowers are deservedly becoming very popular, for not only are the flowers beautiful, but the perfume is exquisite, a strong yet pleasant smell, entirely different to Hyacinths, Narcissus, or many other bulbous plants that prove too odorous for indoor decoration. Their culture is very easy, although many fail with them, and as they are eminently suited to the wants of amateur cultivators I will briefly describe my method of growing them, in the hope that many will try again and succeed. Procure good bulbs early in the autumn or rather late in the summer, and pot them at once. I use 5-inch and 6-inch pots as being the most serviceable, and the soil I find best is turf that has been cut and stacked up one year; this is broken up fine, and a little leaf-mould and rough sand or road-grit mixed with it, the pots are drained in the usual way, and about a dozen bulbs are placed in a 6-inch pot, covering with about 1 inch of the finest soil. No water is needed for some time, for if the compost is moderately moist at potting-time, and the pots are set on the floor of a cold frame, they will need no water until the tops are visible above ground and the roots are active below. A cold frame suits them well until the middle of October, when they will be growing freely, and should be neatly tied up and transferred to a shelf near the glass in any house where an intermediate temperature is maintained, and if kept free from fly, and carefully watered with water, using a little liquid-manure to strengthen the flower-spikes, they will produce finely-branched spikes of flower that will amply repay you all your trouble.

J. GROOM, Gosport.

PROPAGATING TUBEROUS BEGONIAS.

SEVERAL queries have recently appeared in GARDENING respecting the propagation of Tuberous Begonias, and it may be, therefore, interesting to your readers to know the method followed by Mr. John Laing, who has largely helped to bring the flower to its present perfection. Tuberous Begonias may be propagated in four different ways—by seeds, cuttings, division of the tubers, and leaf-cuttings. The two best methods, advises Mr. Laing, are by seeds and cuttings. Increase by cuttings is only essential in the case of choice standard kinds to be preserved true to name. Those are mostly used for pot culture, and are the most improved or advanced types of the race from whence the finest seeds are derived. Young shoots from near the base of the plants make the best cuttings, and may be inserted any time during the growing season, but the earlier they will root and form tubers. A few of the young growths that arise from the tubers in spring may be taken; but the fact must not be overlooked that to take the same libortice with them as with Dahlias would be ruinous to a good display of bloom on the old plants for a season. The cuttings should be inserted singly against the side of thomb-pots in a compost consisting of loam, leaf-soil, and sand in about equal proportions, and plugged in Cocoa-nut-fibre in the bed of a propagating-pit or frame, and shaded till they have emitted roots, and may be grown on if required for late blooming. The young plants should be kept in the cutting-pots till the following spring, and this is the more essential in the case of late-arrived cuttings, but where practicable the latter should be potted and kept growing. Propagation by seeds is at once the most legitimate, speedy, profitable, and certain mode of increasing this class of Begonias, either for pot culture or bedding out. There will be always a certain amount of speculation with regard to the colour, habit, and character of the seedlings the first year, but if derived from a good strain, they seldom fail to give satisfaction, and may be assorted for future work as they come into bloom. The seed may be sown at almost any time of the year, according to the convenience and requirements of an establishment, but the third or fourth week in January is the most suitable. Those who have a sufficient command of fire-heat will find it advantageous to sow early in the year, as the seedlings are liable to damp off than when they are germinated in May, June, or July. The seeds should be sown in square, round, or oblong pans, or shallow wooden

boxes, in a compost of light, porous material, consisting of flaky leaf-soil, a little loam, and plenty of sharp sand. This must be mixed, and used to a rough state, with some finely-sifted material on the top to form a smooth and level seed-bed, which should be pressed firm, watered, or, better still, dipped, and then the tiny seeds carefully sown. Place the pans or boxes to a temperature of 65 degs. to 70 degs., with more bottom-heat. Prick out the seedlings into other boxes from time to time as soon as they can be handled with a finely-pointed piece of wood, divided at the point to lift the seedlings. When they begin to get crowded transplant them into other boxes at a greater distance apart. By the middle of May they are ready for hardening off, and during the first weeks of June may be planted out. Manure the ground well for the plants in the autumn, and expose the soil to the action of the frost by digging it up roughly. Old tubers intended for bedding-out should be started about the last week in March or the beginning of April, and small-sized pots will be quite sufficient for them. Begonias always succeed best when the weather is warm and showery in June, and rather drier in July and August. C. T.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editors of GARDENING, 37, Southview-street, Covent-garden, London. Letters on business should be sent to the Publishers. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to do with the present time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appeared.

- 3453.—Moss on a lawn.—My lawn has become covered with Moss. Will someone tell me the best thing to do to get rid of it, also the cause of it?—C. MacGILL.
- 3457.—Raising Trilliums.—Wanted to know the best way of raising Trilliums, and how to grow them? I have no glass beyond a cold frame.—M. L. P. F., Norfolk.
- 3458.—Making a hot-bed.—Will anyone kindly tell me the best way to make a hot-bed? I am growing some Melons, and should be glad of any suggestions on this point?—H. C.
- 3459.—Cocoa-nut Palm.—I have had specimen of above brought me from Jamaica. How to be treated? Must it be put in soil or otherwise, and how is it best nourished?—SIOGA.
- 3460.—Plant "Aloeka Bride."—I have some seeds called "Aloeka Bride." Will someone kindly give me the botanical name of the same and cultural directions?—M. L. P. F., Norfolk.
- 3461.—Lily of the Nile for market.—Will anyone kindly inform me about procuring and growing for market Lily of the Nile to have bloom from December to March?—JOHN DAVENALL.
- 3462.—Larch decaying.—Will anyone kindly say if there is an antiseptic application for home-grown Larch timber with its bark on, which may serve to retard decay?—R. L. A., Woodlands, Bamber.
- 3463.—Time for planting bulbs.—Will someone kindly tell me when bulbs, such as Flycatchers and Narciss, should be planted in the open ground to ensure flowering next spring?—N. DEWBANDPUL.
- 3464.—Plants for a span-roofed greenhouse.—I have just put up a 12 feet by 8 feet span-roofed greenhouse, heated with a two pipe (hot and return) "Inchcliffe" stove. What plants at this time of year should I start in it?—AMATEUR, Scotland.
- 3465.—Culture of Arum Lily (Callie athiopica).—I should feel much obliged if someone will give me information respecting the culture of this plant, how to get it to flower, and whether it must be kept in a warm place and well watered?—K. LEASER.
- 3466.—Seedling Cyclamen.—I have some strong young seedlings potted off they were sown in autumn. Will someone kindly tell me when they ought to flower, and how I ought to treat them during the summer months? I have a greenhouse.—GARDENING.
- 3467.—Plants for a shaded plot.—Will someone kindly mention what could be planted on a shaded plot, and which gets a little morning sun? The plot is a large oval one, a small round plot in the centre, and the outer circle divided into four, with walks between. The three inner do very well with "Geranium" and "Calceolarias," but the south is lying towards trees, which shade it very much, and "Geraniums" grow to nothing but leaves.—ENQUIRER.

- 3468.—Treatment of Balsams.—Will someone kindly inform me how I ought to treat Balsams? I have a lot of seedlings, and want information about watering, &c. They are now in a hot-bed. When ought they to be put in the greenhouse?—GARDENING.
- 3469.—Anemone fulgens.—I have some of these planted in April last year are not up yet, with the exception of one or two; what can be done to make them flower early in spring? Can they be taken up now before flowering, and dried off and planted again in autumn?—DONOAL.
- 3470.—Cytisus racemosus from seeds.—I would like to know how to grow Cytisus racemosus from seeds? I have a glass-house, temperature kept at about 60 degs. minimum, hot and cold frames each side, also a separately built conservatory, temperature about 60 degs.—QUESTANT.
- 3471.—Violets in winter.—I shall be obliged if someone will tell me how many plants of Double Violets (sweet-scented) would be necessary to furnish button-holes for two during winter months, and what kinds are most to be depended on? I have only garden frames in which to winter them.—K. W.
- 3472.—Flowers for winter, &c.—What flowers may I expect the gardener to give me during the winter months and April? I have plenty of hot-houses and a stove, but very few flowers to show for them. I require flowers that will travel and last well for sending to friends and hospitals.—MOTIV.
- 3473.—Artificial manures.—Could guano or some other artificial manure be successfully used as a substitute for ordinary manure for an herbaceous border, and which would be the best time for using it? Having Narcissus in the border, I am anxious to avoid the use of stable-manure, as it causes the bulbs to decay.—Z.
- 3474.—Cutting down Delphiniums, &c.—I shall be glad to know if it does harm to cut down to within about 8 inches of the ground after they have done flowering plants of Delphiniums and Lupinus polyphylus? I have these growing in a large herbaceous bed, and they shade the later flowering plants.—SUTTON.
- 3475.—A plague of ants.—I am very much troubled with ants in my garden. I have three Peaches on a west wall now in bloom; but when the sun shines on them they are swarmed with ants. Will they do much harm, and I should be obliged if someone would kindly inform me of the means for their destruction?—GEORGE.
- 3476.—A furnace for a flue.—"A" B. C. R." advises me to have a deep square furnace for my flue. I should feel obliged if he will give me full directions for building one for a house 14 feet long; also how he regulates his fire in same, as I find by having a damper in chimney the sulphurous fumes get into the house?—TORRIS.
- 3477.—Border Carnations.—Should border Carnations be watered during this very dry month, or, although they have not yet begun to grow, they look inclined to wither, the ground being so parched from the heat of the sun? As the nights are cold, I am afraid the plants may suffer if watered, so cannot tell what treatment is best?—M. S.
- 3478.—Orchid-leaves turning yellow.—I should like to know the reason of my Orchid having their leaves yellow? I have only a few months put them in the greenhouse, the temperature of which is at a mean 60 degs. The Dendrobis and Lycastes are not so bad, but the Cattleya Trianae and Cypripedium are turning yellow, albeit the former are flowering.—QUESTANT.
- 3479.—Lily of the Valley.—Will "J. C. C." or some other reader kindly answer the following query as to the treatment of the Lily of the Valley outside? I put on a mulching of rotten manure 4 inches thick last November. Should the lily be hard to the roots to make them flower, or should the manure be laid on to form a nourishment to the roots through the summer months? Soil, light sandy; aspect of bed, north-east.—A. E. J.
- 3480.—Worms in a lawn.—Last spring I had a small piece of ground, including a path, dug and turfed. Toward the latter end of the summer I noticed the Grass seemed to be dying away, and it has now disappeared altogether. There are a number of small holes all over the ground, which must be made by worms, as they cast up the earth through these holes. Will someone please tell me how I can kill these pests to enable me to have fresh Grass for this year?—PANTS.
- 3481.—Treatment of Crown Imperiale.—Will someone kindly tell me how I should treat Crown Imperiale to induce them to flower? With me they are in the ground for some years without being disturbed. In a clump of twelve spikes there are only two with bloom, and those not a grand circle of flowers as I have seen elsewhere, but only three or four miserable blooms. They are in a mixed border, well dressed. The soil is rather heavy.—ENQUIRER, Devon.
- 3482.—A high hedge.—I wish to form a high hedge from 8 feet to 12 feet as a screen round one side of a garden. Will anyone advise me how I can do most quickly and effectually? I should prefer it to be evergreen, if such a hedge can be grown in a few years. Is Cupressus Lawsoniana suitable for the purpose? Will it stand clipping, or does it or any other species of Holly, Yew, Laurel, or any other long-lived tree or shrub, or Privet? Would Querc or Cherry Plum (Myrobalan) form a screen as required?—O. P. B.
- 3483.—Treatment of Fuchsia.—I have the following Fuchsia—viz., Mr. F. Gies, Moleworth, Coachman, Lamsaline, Monstrosa, Phenomenal, Rose of Castile, Mrs. Gibson, Avalanche, Jules Chretien, Deutsche Kaiser, Mr. Marshall, and several others both double and single unnamed. I shall be much obliged for any hints as to special treatment and habit of growth of any of the above, and also as to treatment of Fuchsia in general, as last year with me many dropped their buds just as about to open, or does it or any other species of Fuchsia really deteriorate? My old plants are growing well now and have been repotted in 6-inch and 8-inch pots; the young plants are in 4-inch houses, facing south, and top-dressed, covered with a Vine. Last year I had the plants with alternate weak sections of Clay's Fertiliser and Rabbit manure; perhaps this was

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CHRYSANTHEMUMS.

CULTURE OF DWARF CHRYSANTHEMUMS.

MANY amateurs with limited convenience are compelled to dispense with many varieties in both the Japanese and Incurved sections on account of the objectionable height they grow when treated by what is known as the ordinary method for producing large blooms—viz., allowing them to grow uninterruptedly until the first natural break is made, when three additional shoots are taken up, removing all others. The height some varieties will grow under this method of culture entirely renders them useless to the amateur with his limited space. By following a system of "cutting down" the plants, which I will describe, he may grow many more varieties than he otherwise could, as the height is much reduced, and really good blooms can be had also. But I would warn the cultivator of "cut-down" plants that he must not expect blooms of the same quality as can be had from plants grown by the ordinary method. The "cutting-down" plant, however, renders them dwarf and more suitable for decorative purposes, especially in preparing groups for conservatories or exhibition. Plants of naturally dwarf-growing sorts, as *Avalanche*, *Mrs. Falconer Jameson*, *J. Staubersugh*, *Dibbens*, and *Middle*. *Maria Hoste* can be secured carrying really good blooms, and not more than 2 feet high from the top of the pot, and other sorts in proportion. Now is a good time to make

A SELECTION OF VARIETIES suitable for the plants struck in December or January ostensibly for the production of large blooms. Nearly every cultivator strikes more cuttings than he actually requires. Such as these can be set aside for the growth herein described. Do not top the plants, but train them with one stem. As they are mainly used for grouping, and as they are generally stood close together when in bloom, 9-inch pots will be large enough for the final shift. If possible, the pots should be of one uniform size; therefore, after the cuttings are struck place them in 3½-inch pots and then into these 5½ inches in diameter, using for this shift a compost of two parts loam, one part horse-mannure or leaf-mould. To every bushel of the compost add 2 lb. bone-meal or Thomson's Vim-manure. If the loam is heavy add sharp silver sand and charcoal to render it thoroughly porous. The plants require a large supply of water. The roots should be in a condition to receive it easily, which is not so when the compost is of a close, retentive character. Chrysanthemums revel in much moisture at the root, but the condition of the roots should be rendered sweet. Stagnation about them results in a loss of the lower leaves, disfiguring the plants, rendering them totally unfit for decorative groups. For the final potted add one more part of loam and 1 lb. more bone-meal.

THE SOIL ought to be used in a rough state, and be pressed firmly into the pots. Chrysanthemums delight in soil that is firm, and much better results than ensue. The growth made is short-jointed, firm, and luxuriantly developed.

flabby blooms. The roots ramble away far too quickly in loose soil and are less fibrous. They entwine themselves around the sides of the pot, leaving the whole of the inside of the ball practically rootless. Plants growing under these conditions require more artificial food, as the roots do not appropriate so well what is contained in the soil. When the 3½-inch pots are full of roots no time should be lost in transferring the plants to larger pots. It is while they are growing to the second-sized pots that "cutting down" takes place. Those varieties that naturally flower late, of which the *Princess Teck* family among the *Incurved*, *Boule d'Or*, *Florance Davis*, *J. S. Dibbens*, *Etoile de Lyon*, and *W. W. Coles* of the Japanese section are representatives, should be cut down first, commencing about the 20th of May. *Mildeason* varieties like *Jeune d'Ar*, *Princess of Wales*, and the "Queen" family, *Avalanche*, *Mlle. W. Hoste*, *Mons. Berard*, and *Vivand Morel*, about the first of June, and the early flowering sorts such as *Edwin Molyneux*, *W. H. Lincoln*, *Gloire du Rocher*, *Lady Selborne*, *Sunflower*, and *Middle*. *Lacroix* about the middle of June. I give these few names as a guide to cultivators in making a selection; many more might be given, but would occupy too much space; sufficient have been named to guide the cultivator in the treatment of those sorts known to each. It is well to take into consideration the purpose for which the plants are required in determining the height at which they are to be cut.

DWARF-BLOWING varieties like *Avalanche* and *Vivand Morel* are best suited for front rows of groups. These may be cut down to within 4 inches of the soil, the others to 6, 8, and 12 inches, selecting the varieties accordingly. *Fair Maid* of *Guernsey*, *Mme. C. Audignier*, and *Mrs. J. Wright* would come under the last-named height. As the new shoots are not so freely made from the old wood as from the young plants of small-flowered varieties like *Mrs. G. Rundle* or *Elaine*, which are intended to have more branches each, should not be cut so low as the larger-flowered varieties. Before cutting, it is well to determine how many blooms the plants are intended to carry as a guide in cutting down. The large sorts, like *Sunflower*, *Etoile de Lyon*, and the *Queen of England* family in the incurved section exceed the best when three only are allowed, or at the most four, shoots to each, one shoot carrying one bloom. Varieties like *Elaine*, *Lady Selborne*, or the *Rundle* family may have from four to six branches. Whatever quantity is decided to allow to each, the cultivator must bear in mind that the more blooms on each plant the smaller they will be individually. If the finest flowers are wished for, three is a fair number to leave upon each plant.

GREAT CARE must be exercised in watering the plants after they are cut down. They do not require much water at the roots for some time. If they can have the protection of a cold frame so much the better, as they can then be protected from showery weather. Syringe the plants twice daily during bright and dry weather to assist the shoots starting, and if the sun be very hot at the time a little shade in the middle of the

day can be applied. As soon as the shoots are long enough to determine if they are perfect, dish up the number required. At this stage transfer the plants to their flowering-pots, and when rooting into the new soil remove them to their summer quarters, which should be in an open situation to the south, but protected from easterly winds and also those blowing from the south-west. Allow them ample space, as crowding quickly spoils their appearance, drawing them up weakly and ruining the foliage. Tie each branch to a stake separately to prevent their being broken or the leaves damaged by chafing during gales of wind, and as soon as the pots are full of roots stimulants may be supplied. The first buds produced on the shoots after cutting down should in nearly all cases be selected as best suited for producing large blooms. They will appear from the first to the end of August, and it will be soon enough if some sorts show their buds the first week in September, say such as the *Queen* family. Sometimes a bud on plants of this latter section will show during the first week in August. This is too early. In this case rub it out and wait until the next one shows, which will be about the middle of September. When the buds on the late flowering Japanese sorts show even as early as the end of July they should not be destroyed. When the

BUDS ARE SELECTED, take off all growth shoots, which are freely produced at this stage. Commence housing the plants at the end of September, beginning with those that are backward as a means of hastening them on. Place them as near to the glass as possible in a cool-house, admitting abundance of air to keep the growth as stocky as possible. Where this is neglected the peduncles run out to an indordinate length away from the foliage, which detracts from the appearance of the plants. Be particular that insect pests of any kind do not obtain a firm hold on the plants before the usual remedies are applied. E. M.

3456.—**MOSS ON A LAWN.**—Have the lawn mown with a scythe, and tell the man to pare it down close to the surface. If this is done in dry, hot weather the sun will soon bake up the roots of the Moss, but the Grass, being deeper rooted, will survive. If the lawn is much shaded the above plan is of no use. In that case get a fine-toothed iron rake, and scratch out the Moss by working the rake to and fro. In either case give the lawn a dressing of rich soil or rotten manure in the autumn to stimulate the roots of the Grass.—J. C. C.

3471.—**VIOLETS FOR WINTER.**—A good deal will, of course, depend on the size of the plants in the autumn, as to the number that would be required, and also how many times a week they would be wanted. Thirty-six plants of *Double Blue* (*Marie Lonsie*), and the same number of *Double White* (*Swanley White*), would not be too many, and even these will not give you any flowers in very cold weather during the winter. At the same time the numbers I have mentioned will produce all the blooms you want in a fairly good season. Garden frames will do very well to winter the plants in, but they should have a thick lining of coal-ashes around outside.—J. C. C.

GARDEN WORK.

Conservatory.

Flies must be kept free from green-fly; they congregate if left undisturbed in the centre of the flower-stems, and often do injury to the blossom-buds. When a plant gets thoroughly infested they are difficult to destroy, hence the best course is to tackle the first fly, or even be in front of it with preventive measures. There are plenty of insecticides now, both for dipping, syringing, fumigating, and to use in the form of dry powder. Watering has been rather a heavy business lately, especially where shade has not been used. Without shade blossoms soon wither; unless there is a breeze with a north wind, the removal of such things as Asaleas, to the season of bloom will be a short one. There is no doubt that for shading purposes canvas blinds are best, but they are expensive, though not so much so, I think, as formerly, and to the case of houses insufficiently heated the blinds will be useful during sharp weather in winter. This is a good season for rearranging hanging-baskets. Ivy-leaved Pelargoniums should play a prominent part in this work, the growth is so suitable, and the blossoms of the best varieties are very effective. Large baskets may be placed now with sobriety. These are best started in a warm house to be sent to the conservatory later on when coming into blossom. Tropeolum, Lophospermum scandens, and Thunbergia alata do very well for draping large baskets. A large wire-basket draped with Lophospermum scandens, and filled above with Fuchsia Rose of Castille will last all the season. Sedum carneum variegatum will form pretty drapery for a smaller basket furnished with bright-coloured Begonia. Zonal Pelargonium for winter blooming should be shifted into larger pots as required. Specimens now in course of training may have liquid-manure as soon as the pots are well filled with roots, but not before. Pelargoniums of the old-fashioned show type are very gay just now, and if well supplied with water, liquid-manure being given at intervals of two or three days, will be useful for some time. We need to make a greater use of these years ago. I have had specimen Pelargoniums plunged out to a cold ash-bed to keep back for late blooming, but in these days we had not the many beautiful Zonals in such variety as at present; but we had our compensations, not the least of which were the sweet-scented "Geraniums," which were often growing into large bushes. I often wish we had more of these old-fashioned "Geraniums" now. Growing plants of all kinds should be kept in condition by nipping off the points of the strong shoots which are growing away, and which, if left unbroken, will destroy the perfect symmetry of the plant. All necessary repotting and the shifting on of young stock must have prompt attention. Climbers on the roof should be looked over once a week.

Stove.

Dracenas and Crotons have put on colour during the late bright weather where not heavily shaded, in fact, I think it is a mistake to shade anything heavily; the thinner the shade the better, and even a thin shade need not remain long over foliage plants which require solar light to bring out the bright tints. Cuttings of Crotons will root freely now in a bed of Cocca-nut fibre over a tank of hot-water, such as is common in propagating houses. The small-folaged Crotons of the angustifolia type are graceful table plants in a small state. Take off and start in single pots suckers of the Screw Pine (Pandanus Y-litch), which is, I think, the best kind to grow. Caladiums in small pots will root now into large plants if shifted on into larger pots and given plenty of heat and sunshine. Tabernaemontana Canasana is a useful flowering stove-plant, which may be grown with the Gardenias in a mixed collection of stove-plants. Gardenias are so difficult to keep free from mealy-bug, that unless time enough can be given up to keep them clean, it is, perhaps, hardly worth while attempting their culture. In a small collection of stove-plants they are rarely done well, chiefly because the temperature kept up is too low, otherwise they are neither difficult to propagate or grow. If the Gesnerias are not yet started no time should be lost in getting them on the way; they must have heat, moisture, and shade. For winter-flowering work up a stock of Hebeclidium laetum. Continue to put in cuttings of Poinsettias.

Ferns under Glass.

These are now getting into good condition, and must have more room in the fronds are to be properly developed. Two Ferns, most of which fortunately may be grown in a greenhouse temperature, are very handsome, and when there is room some of them must be introduced. Plants with tall stems are rather expensive, but their permanency of character makes them worth the money. Very few would find room for more than half-a-dozen, but even a single pair of Dicksonia antarctica, Cyathes princeps, or Alsophila australis will give character to a large house. Gold and Silver Ferns are very interesting, but they must have warmth, and cannot be wintered in a lower temperature than 60 degs. to 65 degs. Though the early spring is generally looked upon as being the best season for repotting Ferns, there are always young growing plants which require a shift into a larger pot, and this may be done now or any time.

Unheated Greenhouse.

There is a considerable advantage where the house is unheated in having a division wall through the centre of the house, converting it into two instead of one span-rows, one side to face south and the other with a northern aspect. The dividing wall renders the temperature so steady, and at this season and through the summer, when the weather is hot and bright, the flowering plants may be moved to the northern side, and the southern compartments used as the growing houses.

Cold Frames.

Warm coverings will be necessary at night for some time longer yet. All plants that are not too tall will do as well, if not better, in cold frames than in dry, hot

greenhouses; at any rate, the more frames we have now the better. Seedlings of all kinds may be pricked out in beds of soil. There is no better place than a cold frame for Arsen, Statice, and other tender annuals for the next five or six weeks.

Window and Room Gardening.

Some return to now being made for the care bestowed in the winter. Plants which have been preserved in spare rooms are now on the move. Give a thorough dressing with a sharp knife, cutting away all bits of dead wood, with a surfacing of fresh soil pressed well down. Move the plants to the lightest position in the room, and ventilate at the top of the window. Water when necessary, but not too often. Plants in flower will consist of Genistas, Deutzias, Cinerarias, Asaleas, Cyclamens, and hardy Primroses, including Auriculas. The last-named family are easily grown, and are charming things for a shady window in spring. Good pots or musk are popular favourites; these will be making good now. Musk does not want much sunshine. Asaleas, after flowering, are generally a dead loss to most people who have no greenhouse. This need not be if carefully looked after; the seeds and fed blossoms should be removed, and the plant kept in the warm room, the roots kept moist, and the foliage sprinkled occasionally with clean water. In July set the plant outside to ripen the wood, but do not forget it altogether. Neglect in watering will certainly prove fatal.

Outdoor Garden.

Roses must have very close attention now. Insects are making their appearance, and must be promptly dealt with. Tobacco-powder is always handy, and it is worth much to have a remedy at hand that requires no preparation. We are all at times inclined to procrastinate, to put things off till a more convenient season, especially where water has to be boiled to make a mixture. With the Tobacco-powder all we have to do is to take the distributor in hand on our rounds and dust the powder on and among the flies wherever we find them. Suckers must be rooted up. There is more trouble with suckers among worked Roses than there ought to be if the buds had been removed when the stocks were planted. This is another matter in which carelessness leads to endless trouble. How beautiful the Blue Anemone spanziana is now on shady banks where used to a quantity and not disturbed. The Dog's-tooth Violet is another shade-loving plant that is very effective. I do not mean that the Dog's-tooth plant should be placed under trees—the drip and dense shade would be too much for it—but give it a position on the shady side of the rockery; let it have a bed to itself, with the soil specially prepared. It will associate well with the Primulas. Plant Gleditsia which are not yet out; these are always beautiful, but to do them well the soil should be specially prepared. Hardy edging plants of all kinds should be planted now so as to get well-established before the tender plants are set out. I always say use as many hardy plants as possible. Very much more might be done with them, even in the parterre, than is commonly met with. Vicias in sorts may still be planted.

Fruit Garden.

All cracks in the clay of recently grafted trees must be stopped the moment they become visible. This is the best season to plant Fig-trees on walls. In preparing the sites, especially if the soil is of a heavy character, make the border oblique above the ground level, and work in plenty of old brick rubbish, mixed with broken bricks. The roots like to grow in a mixture of this kind, and the wood will be less gross, and consequently more fruitful. Vines in early and late houses have made wonderfully rapid progress lately. Stopping and tying, and rubbing off lateral buds occupied much time. With the sun shelling all the day long in a clear sky, the work of air-giving has been simplified. What we have to guard against in this bright weather is not to keep the houses closed altogether after the sun strikes the roof. Whenever the temperature begins to rise the atmosphere gets laden with impure air, generated in the closed house at night, and the least bit of air early in the morning will allow the over-heated air to escape. Besides, when the ventilation receives early attention there is never any danger of scorching or scalding, and mildew has a poor field to work upon. Do not leave too many Peaches on the trees a moment longer than is necessary, which means that Peaches should be thinned as soon as the fruit which are taking the lead can be seen. The rule, when the syringe or garden-engine is used freely on fine days, insects do not give much trouble. It is when the trees are neglected, and the borders, perhaps, covered with plants in pots that insects are allowed a free hand. Cherries and Plums under glass must be very carefully managed, just enough fire-heat to keep on covers from being all that is required, and only when frost is expected, or when the weather is damp and cold, when the trees are in blossom that a little fire-heat will be useful. Pines not yet potted should be shifted on as required. There are now three seasons—spring, summer, and autumn—when Pines are overhauled, and reported if necessary, and the beds put in condition. It will be so well to secure some of the plants of the early forced Strawberries to plant out for autumn fruiting. Vicomtesse is a good kind for this.

Vegetable Garden.

French Beans are rather dangerous things now in fruit-houses. If there are any indications of red-spider turn them out at once. If the red-spider get on Vines or Peach-trees they will do much injury. French Beans during early spring should be planted in pots by themselves. Make new plantations of Globe Artichokes in rich, well-cultivated land; they are useless in poor land. Apparagus may be planted now. It is wise to send to a distance for Apparagus roots to make new plantations. If the plants cannot be obtained near you seeds. The old-fashioned bed system is dying out, I should not advise any having narrow beds to root them up, but I certainly should not add to the number. There is nothing superior to the single-row system at not less than 3 feet apart. Tomah-plant must not be crowded. They will be ra' now in a cold pit, if covered with mats at night. It is useless putting out small plants; grow them on teth 5-inch or even 6-inch pots rather than put starved plants with the bottom leaves gone and the trusses of bloom more than a foot from the ground. Early sowing under

glass have had a glorious time for setting their fruit, and the plants are wonderfully dense in consequence of the free ventilation which has been necessary to give to keep down the temperature. It has been necessary to water in Cucumbers even where the means of applying moisture have been practically unlimited. Vegetables on mild hot-beds have been exceptionally good; Potatoes specially so. Horn Carrots have also turored in quietly; but with the bright sunshine more water has been required; but this has one advantage—we have been able to use weak stimulants to advantage. Cuttings of Herbe planted, and sow Basil and Marjoram to a warm border.

E. HOODAY.

Work in the Town Garden.

No time must now be lost in planting hardy herbaceous subjects of many kinds. There are many that are most useful of all plants, requiring, when once established, very little care except to be occasionally divided and replanted when the clumps become overgrown and started in the centre, and blooming with great certainty year after year, while very few need now a slight protection to the severest winters. The Irises are some of the very best of hardy plants for town gardens, the German varieties is particular. These have had quite as fine a time of it as London-bridges as ever in this country, and with no special care or treatment. There are a number of different varieties, but beyond the common purple kind, the most valuable of the L. pallida, I. neglecta, I. Squieus, and I. amara groups are all good and very suitable for town gardens. The Saxifrage lately again succeeds remarkably well in town gardens, as a rule, and afford a great variety of both foliage and flower, from the huge leathery leaves and really snowy pink blossoms of S. cordifolia, and S. crassifolia, to the pretty little tufts of S. aspera, S. celsa and others. The white flowers of S. longifolia and those of the double-flowering form of S. granulata are very beautiful, and as freely produced in a smoky air in a clear atmosphere, while these are very many other also equally desirable, including the well-known "London Pride" (S. umbrosa). The varieties of Pyrrhrom roseum, both single and double, also make excellent town plants, and the very finely-cut and Fero-like foliage is also very elegant; the double-flowering forms of P. Parthenium are also very useful. Great care is necessary in digging the old roots of the P. roseum varieties, and, if possible, plants already established to small pots should be obtained. The (Eranthis, or Evening Primroses, again, are good town plants with scarcely an exception, and so are the Veronica, both herbaceous and shrubby, the Dithyram of Pink tribe including Geraniums, Finks, swags Williams, and all the Primulas (excepting only perhaps the double-flowering forms of P. acutila), though all are not hardy, and several have to be treated as pot-plants. It really seems almost impossible to kill, by its means, the common Auricula (Primula auricula), or to prevent its flowering in any atmosphere, and the new race of hybrid Polyanthus-Primroses are equally vigorous and effective. Do not forget the Japanese Anemones (white and red), Canterbury Bells, perennial Phloxes, Michaelmas Daisies, and the fine autumn-flowering Pyrethrum uliginosum.

B. O. R.

THE COMING WEEK'S WORK.

Extracts from a garden diary from April 15th to April 22nd.

Sowed No Plus Ultra Dwarf French Beans on warm border; shall cover on frosty nights if they come up before it is able to leave them exposed. Sowed Winter Greens, such as Broccoli, Curled Kale, Savoys, &c. The seeds were dressed with red lead to keep off birds. I find this answer just as well as covering with netting, and the netting is best for protecting the blossoms of fruit-trees. Looked round recently-grafted fruit-trees to stop insects in the clay. I always use a little short hay, such as is mown from the lawn, with the clay, and this holds it together. Staked, tied, and pinched off side-shoots from Tomatoes under glass. This requires frequent attention now. Pricked off Primula obconica. This plant can be easily increased by division, but seedlings make the best plants; in fact, in the case of every plant which reproduces itself true to type from seeds, or nearly so, seedlings are best. In sowing seeds, select the plant producing the best and finest flowers for the seed parents, and in the course of a few years a better strain may be built up. Last year I had a good deal of trouble with woodlice in my Cucumbers-houses, which arose from using inferior manure; the eggs of the insects, being brought to the house with it, thrived amazingly and gave me a lot of trouble. Up to the present I believe I am quite free. The houses were thoroughly cleaned in winter, and every particle of old stuff swept out, and the walls whitewashed. Greater care has also been exercised in the selection of the manure. Erected up early Fuchsias, very loose, with a little better being used. Fuchsias are scarcely to be got for Melons. In light soil the plants soon run out, and are consumed by red-spider. I sowed shade Melons. If the foliage cannot be built up strong enough to stand the sunshine there has been something wrong with the soil or the management. Asaleas are very bright in the conservatory now, but it has been necessary to use a shade, and for this reason the plants have been grouped at the coolest end of the house. Thinned and treated the climbers in conservatory. I noticed a few green-fly on young shoots of Maderavallis sivecandans, and by dipping to a solution of soft-soap and water I kept their cause at bay. Checked. This plant when the growth is young is rather objection to green-fly. Ventilation to harden the growth will improve matters. I make a very free use of Tobacco-powder to plants in the conservatory, where it is not always wise or convenient to smoke. I saw a range of glass the other day a small glazed screen specially made to bring plants in for fumigation. Not a bad idea! It is economical, and if taken in time the flies may be kept from spreading to other plants, as when the flies first appear they are few in number, and do not infest many plants. Japanese and Ghent Asaleas, including the Old Sweet-scented yellow potted ones, as they go out, are taken to another house of about the same temperature to complete the ripening of the wood. If this is always done they will come in annually as well as the Indian

* In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equally good results.

Azaleas do. Shifted on Palma. Put in cuttings of Indian rubber (Ficus elastica). I like the Ficus australis ever better than F. elastica. It is more refined in its growth, and makes a better pot plant. Sowed seeds of Aralia Sieboldii. I find imported seeds grow the best.

INDOOR PLANTS.

CLEMATIS INDIVISA.

This New Zealand variety of the Virgin's Bower does not appear to be sufficiently known, nor is it cultivated to such an extent as its merits deserve. For a cool-house from which the frost is just excluded it is a most suitable climbing plant, being a fitting companion for such better known subjects as the Lapsagerias. It can be adapted to various purposes to suit each respective case. For instance, if a large break of bare wall in either a greenhouse or conservatory has to be covered, and that as speedily as possible, then this Clematis is well suited as one of the plants for the purpose. It is well adapted also for training over wire arches of an ornamental character, also for

he a thinning process where the shoots are too thick, removing those that are the least likely to produce flowers later on. Insects, on the whole, are not troublesome, green-fly being the most likely to attack the points of the young shoot and thus cripple the tender foliage. The flowering season is from April to May, when a beautiful effect is produced for a long time by reason of the freedom, the succession, and the lasting properties of the blossoms. This Clematis cannot in any sense be considered a difficult plant to cultivate; it is of good constitution, and not very particular as to the soil into which it is planted. I would, however, choose this as good as possible with a view to lasting properties. Fibrous leam with some well-decomposed leaf-soil will suit it well, only using peat when the latter fails to be of good quality. Planting out is preferable to either pots or boxes, for the greater the freedom the roots have the better will be the ultimate results. Whilst in flower and during growth the supply of water should be liberal; but if a late growth in the autumn is apparent, then withdraw the water as a

plant." Not many weeks after it came to me half dead; it was put in a Tomato-house and kept alive, and in consequence of moving, was kept in a room facing east all the winter, with thermometer never above 56 degs. It is now "a thing of beauty," and looks thoroughly healthy, and I shall soon pot it and separate it into three good-sized plants. It is not the Climbing Aspernugus.—SALF.

SEED-SOWING.

Now will be found a very good time for sowing seeds of the approved strains of the Chinese Primula. Where the stock required is but limited, the better way will be to have the mixed packets of seed to save both room and labour. When larger quantities have to be raised, then each colour could advisedly be kept separate. A very good plan for raising the seed is to cover the surface of the soil with Sphagnum Moss in a light manner; should it perchance become dry before the seed germinates the Moss can be easily moistened without in any way washing the soil. Thus covered, a close watch has to be kept, of course, to remove the Moss as germination takes place, so as to prevent the seedlings becoming weakly; it pays well to do this if better results can be ensured. Covering with brown paper and tying it over tightly, as one does in the case of preserved fruits, also answers well, but it must be removed after a few days to watch the progress of growth. Where crickets abound, this latter plan is a safeguard, but in any case to guard against any depredations, it is much the better plan to stand each pan or pot over a receptacle containing water; this will save a lot of annoyance in the loss of young plants. Leaf-mould of good quality, with some light leam and a free use of silver sand, will make a good mixture for raising the seed; peat should be avoided, as there is often a tendency in its use to encourage a green growth that deters the germination of the seed. At this season of the year a moderate heat is advisable, but it should not be at all a dry atmosphere, as, for instance, when standing near hot-water pipes. If the

SEED OF PRIMULA OBCONICA from the first sowing has not provided a sufficient quantity of plants another sowing should be made. There is time enough yet to get good-sized stock. Seed sown last year in the middle of May supplied us with a useful lot of plants that have flowered extremely well. These plants we propose to pot on for another season to see how they will succeed the second year. Unless an early batch of Cinerarias is required, it is not advisable to sow the seed just yet, plants raised very early often run too much to a leafy growth. Celosia pyramidalis sown about now and grown briskly for a time will provide a stock of very serviceable plants for autumn decoration. This will be found better than sowing extra early, the plants probably not having justice done them for want of room when the bedding-out stock has to receive more attention in this respect. Another good old autumn-flowering annual is the Globe Amaranth, which is not grown half enough for August and September use. The purple variety is the best to grow in a general way.

GROWING ON SEEDLING PLANTS.—Those plants raised earlier in the year should all have attention by pricking them off into pans or potting singly into small pots in good time. It is a great mistake to overlook this necessary work; if deferred only a week or two it often results in the seedlings being considerably weakened, a failing that causes delay in the development of a good sturdy growth. Another failing is that of attempting to grow more plants from seed than can be found room for as growth progresses; half the quantity of any kind, when well grown, is far preferable to a larger number of weakly plants. Early-sown Gloxinias should now be fit for small pots after having been pricked off into pens some little time back. These need not be kept in a high temperature,



Flowers of Clematis indivisa.

running up the rafters or columns in large houses. In whatever position it is grown, the young shoots should have a fair amount of freedom. When covering a wall, for instance, as soon as the main-shoots have reached their proper limits, then let the lateral grow the hang down as drapery; this will check overvigorous shoots from gaining an ascendency. Upon arches the same plan should most decidedly be carried out, and again when training up rafters. Not only is the growth itself rendered much more ornamental, but the appearance when in flower is greatly enhanced. When trained closely, a large number of the blossoms must be hidden or so crowded together as to spoil the effect as well as the lasting properties of the flowers by the accumulation of moisture. Close training is also a greater encouragement to insect pests, with the greater difficulty of reaching them in the process of extermination. What pruning is necessary should be done immediately the plant is out of bloom, and never during its period of growth; this latter plan means a proportionate decrease in the following crop of flowers. If anything at such times is really found necessary in this way, it should merely

check to the same, such wood not having any chance to become well ripened. Although this Clematis is seen at its best as a climber, it does not follow that it is not adapted to pot culture, for which in reality it is capital. For decorative uses, therefore, in pots it is likewise to be recommended. In the most favoured parts of the country it will, with ordinary precautions, without doubt resist our English winters if upon walls. It must not be confounded with another kind known by the varietal name of C. indivisa lobata, which differs slightly in its foliage, but more so in its shyness of flowering, being sometimes disappointing in this respect as compared with the type, of which an excellent illustration is now given, showing one of its many uses.

Asparagus plumosus.—Perhaps the experience I have had this last winter with an Asparagus plumosus may tempt others to cultivate this lovely plant. It was given to a friend as an "Asparagus Fern." On seeing it I said: "If you can manage that in your sitting-room window let me know, and I will get one directly, but I have always understood it was a stove-

but they should be as near to the glass as possible, with a light shading during bright sunshine. Later on seedlings should now be fit for pricking off; these will provide a stock of useful plants in the autumn to succeed the foregoing. Cyclamens sown in the past autumn should not have too much heat; neither, on the other hand, should they be trusted yet to a cold frame; this would give them a check. Keep them well attended to for moisture both at the root and atmospherically, and as soon as they need a shift from the small

into 3-inch pots when strong enough. Seedlings make nice, vigorous, and bushy plants, but they do not flower so freely for a few years as those obtained from cuttings.—B. C. R.

PERSIAN CYCLAMENS.

The old plan of cultivating these was to grow on old plants year after year and to dry them off during the summer in the same way as Gloxias, the result being poor examples with very few flowers on them. Contrast this system

Two parts of loam, one of partly decayed leaves, and half a part of peat, adding sand as required to maintain the whole in a porous state. To every bushel of the compost add 2 lb. bone-meal. If the soil is moist, as it should be when used, water will not be required for a day or two; afterwards the roots should not suffer for want of it. Syringe the foliage overhead every day, choosing the evening for the purpose. Toward the end of September the plants should have a position in the greenhouse close to the glass. When the flower-stems appear syringing should cease, or the blooms might damp. The plants will flower principally during November and December, continuing to throw up a few flowers for three months longer.—S. P.

—The plants ought to remain in the greenhouse for another five or six weeks, when they will do better in a cold frame. Keep them moist and lightly shaded, and shift into 5-inch and 6-inch pots by July, and they will all flower well during next December, January, February, and March. Return them to the greenhouse in September.—B. C. R.



A well-grown Persian Cyclamen.

pots, do not delay the work of potting into a larger size. A light loam with good leaf-mould and road scrapings will suit them very well. No manure in any form is really needed in the soil; guard, however, against wireworm and the common kind as far as possible. Tuberos-rooted Begonias that are intended for pot culture from seed sown this spring need not be transferred to small pots just yet if accommodation can still be provided by pricking them off a second time into pans or boxes. For my own part, I have always found it best to grow them thus until they are of a fair size, with somewhat more constitution in them. A gentle warmth, with a light shading and plenty of moisture, will encourage a free growth. According to the requirements, the stock of such annuals as Petunias, Mimulus, Stocks, Lobelia gracilis, and other kinds should be looked after for pot culture in good time. Where these are grown for hedging out, it will be a comparatively easy matter to select sufficient of each, and give rather more attention than bedding plants in common usually receive. It pays to grow annuals in considerable quantity if a large show house has to be kept gay during the summer months; it is then an easy matter to throw them away later on to provide room for plants of a more permanent character, thus must in any case be housed as the autumn comes on. H.

3470 — Oytisus racemosus from seeds.—This is a very simple matter. Sow the seeds at once, nearly an inch apart, in well-drained pots or pans in a mixture of light, porous loam, leaf-mould, and sand, with a third or fourth of sandy peat, and if fresh and good almost every one will germinate. They will do nicely in a temperature of 60 degs., but the soil must be kept evenly and moderately moist, and shade from direct sunshine must be given. When 2 inches high transfer the seedlings singly to thumb pots, using similar soil; remove them to a cold frame when established, and afterwards shift

with that now in vogue, which is to sow the seed as soon as ripe, and to grow on the plants in light airy houses or pits in a genial temperature. In this way fresh healthy plants bearing a good head of bloom (as in the illustration) can be had in fifteen months from the time of sowing. The seed, which generally ripens in July and August, should be sown as soon as possible afterwards in a light fibrous soil, with a little leaf-mould and sharp sand. When the seedlings are strong enough, ten or twelve should be pricked off into a 4½-inch pot, and when large enough shifted singly into 3-inch pots, shifting again when these are full of roots. For the last potting stiffer soil is necessary. Attention must be given that the plants when growing are kept quite clean, as if insects are allowed any quarter, the beauty of the plant will be spoiled. Cyclamens, even when not in flower, are ornamental, the markings on the leaves being very beautiful. They are at their best during February and March, as then the flowers have their true colour and the foliage is firm and good. They should have no sticks or ties of any kind. The bulbs should be carefully watered and well ripened after blooming, as the next season's display depends very much on this. The plants should not be repotted until they break into growth, and then they should be put into smaller pots, shifting on as may be necessary. W.

3466. — Seedling Cyclamens.—On a shelf in the greenhouse when they will receive shade during the hottest part of the day is the best place for seedling Cyclamens until the end of May, when a cold frame placed behind a north wall provides suitable quarters; the daily need of shading the frame is thus dispensed with. When the roots reach the sides of the pots, presuming the plants to be now growing in quite small pots, they should be shifted into those 3½ inches in diameter; the strongest of these will go into 5½-inch pots, in which they will flower

3476. — A furnace for a flue.—For a house 14 feet long by 8 feet, or 10 feet in width, a furnace 9 inches square (internally) and about 2 feet in depth from the top or feeding-hole to the fire-bars is large enough. It must be solidly built of good hard bricks and the best mortar, with a very little Portland cement added, and the sides must be 9 inches thick all round. Of course, there is to be an ash-pit (9 inches deep) below the bars, and the exit into flue, which need not be larger than 9 inches by 3 inches, may be placed at the side or back near the top. A damper should never be placed in the chimney where there is a flue, as, of course, when it is pushed in, the fumes from the fire are thrown into the house. I always fix an air-tight door, with regulator to the ash-pit, and check or stop the draught there, for in this case, as long as the chimney draws, there will be no escape into the house whatever. A slate placed against the aperture, with a few ashes thrown up at the bottom to prevent leakage, will answer the purpose nearly as well.—B. C. R.

3464. — Plants for a span-roofed greenhouse.—This is an excellent time of year to start plants of many kinds to flower during both the ensuing summer and winter. For summer flowering you should now procure bulbs of the Tuberos Begonias, single and double, and in great variety of colour, also young plants of Zonal, Ivy-leaved, and large-flowering Pelargoniums, Fuchsias, Heliotropes, Marguerites, double and single Petunias, Marguerites, Abutilons, and anything else you may fancy. Seeds of Chinese Primulas and of Cinerarias also sown now will afford plants to flower during next winter and spring, or you may purchase the seedling plants in June or July, and simply pot them on. The beautiful Scarborough Lily, which flowers in September, should also be potted this month, as well as the Arum Lily, to flower next winter and spring, and there are many other interesting subjects that could not be taken in hand at a better time. Roses already established in pots should now be purchased.—B. C. R.

3472. — Flowers for winter.—There is something wrong in this case. The gardener either does not understand his work or he is not provided with a stock of plants suitable for the purpose. With regard to the kind of flowers available during the winter, you can have plenty of Chrysanthemums up to Christmas, and also Violets grown in frames, and some in pots to place in a greenhouse in bad weather. Then there are the Persian Cyclamens and Double Primulas, both of which furnish flowers that travel well. Freesias may also be had in flower for two months in the dead of winter, and Roman Hyacinths the same. Arum Lilies should also be available. The ordinary Hyacinths and the Double Roman Narcissus can be forced into flower by the end of January; and such Ericas as Wilmoreana and the two forms of humilis flower at that time, and are useful for cutting. At the beginning of March Marsechal Niel and other Roses should be fairly plentiful; but none of these things can be had unless they are managed with a fair amount of skill and in a suitable temperature. Of course a good stock of plants and bulbs must be provided or the gardener will be powerless.—J. C. C.

3465. — Culture of Arum Lily (Calla liliifolia).—The season for the flowering of this

plant extends from Christmas to the end of April, providing a little artificial warmth can be given to it. To have a quantity of bloom from them, though, about Easter-time, no artificial heat whatever is required beyond keeping the frost from the plants. Some persons keep the plants in pots all the year round; but from experience I prefer to plant them out in the open during the summer months. Much labour in watering them is then saved. From now until the middle or end of May, which is the best time for planting them out, the plants should be kept near to the glass in a cool-house, watering them regularly as required. When all fear of frost has passed turo the plants out of the pots; if these were 8-inch ones or more the plants will need dividing; if the plants filled pots smaller than the size named, they will not require dividing, as they will make good specimens the next year. Any open piece of ground will suffice for the summer quarters, digging it deeply, adding a small quantity of manure. A space of 2 feet between the rows, and 18 inches from plant to plant should be allowed. The old leaves will die away, and new ones will form. If the weather be hot and dry, copious supplies of water will be an advantage in assisting growth. Toward the end of September the plants ought to be potted, choosing pots large enough to contain the roots without breaking too many of them. Use a compost of three parts fibry loam to one of partly decayed horse-manure. Allow a space of 2 inches at the top of the pot for water in the case of 10-inch pots, and less for those under that size. If the plants can be stood behind a north wall for ten days after potting should there be no danger of frost, the trouble of shading them will be dispensed with. Sprinkle the foliage over with clear water two or three times each day to encourage a quick root-action. Remove the plants to a light position in the greenhouse, supply them freely with water at the roots when these are active, and when the pots are full of roots liquid-manure given every other time the plants need water will be an advantage. Occasionally wash the leaves with clean water applied with a syringe vigorously. Green-fly is liable to attack the opening flowers; fumigating the house with Tobacco-smoke is the best means of ridding the plants of this insect pest.—S. P.

— If large flowers are wanted, and a succession of them from the same plant, there cannot be a doubt but that planting them out in the ground in the summer is the best plan to adopt. There is, however, a greater certainty in the plants flowering if they are grown altogether in pots—that is, providing they are potted in fresh soil every year in the month of May, and kept well watered all the summer. After the end of May the plants are better in the open air than under glass, and a partially shady place is better than full exposure to the sun. Thoroughly well prepared plants never fail to show plenty of flowers, but even these do not open in mid-winter in a less temperature than 55 degs. to 60 degs., and at the same time they must have plenty of light and air. Strong liquid stimulants must be avoided, or the result will be more leaves than flowers.—J. C. C.

3403.—Treatment of Balsams.—When the first rough leaf is made the plants should be potted singly into 3½-inch pots, burying them up to the seed-levée, but not above. A light yet rich soil will grow Balsams well. For the final potting into 9-inch pots, if large specimens are required, two parts loam and one of freshly-gathered horse-manure provides a favourable rooting medium. At no time should the soil be made very firm. The plants require a lot of water at the roots during the summer; when the soil is made firm it cannot percolate so freely. The hot-bed, with abundance of air admitted to the plants, is the best place for them until they are established in the first-named pots. From there they should be transferred to the greenhouse, keeping them in the warmest end for a few days until they are accustomed to the change. From the small pots the plants should go into those 5½ inches in size, the best of them afterwards being placed in the 9-inch ones; the remainder can flower in those. Copious supplies of liquid-manure should be given to the roots, the foliage regularly syringed, and abundance of air supplied at all times. If available a cold frame after the middle of May provides the best quarters for Balsams. Here

the pots can stand on a cool base of ashes. The foliage can have abundance of light, and be close to the glass, which effectually prevents the growth being drawn up weakly.—S. P.

TREES AND SHRUBS.

LILY OF THE VALLEY TREE (ANDROMEDA FLORIBUNDA).

THIS is one of the best of dwarf shrubs, looking neat and well furnished throughout the year. The flower-buds are formed and considerably developed in the late autumn, so that the little shrub looks throughout the winter as if about to burst into flower; the flowers expand towards the end of March, and remain in beauty throughout April. It is an excellent shrub for a rock garden. The single sprays are valuable for cutting, lasting long in water, and looking well alone, or with almost any flower. J.

TRANSPLANTING EVERGREENS.

MUCH has been said and written respecting the transplanting of Evergreens, some advocating or recommending one time in the year and some another, but after having had much of that work to do or superintend, and therefore some considerable experience of it at different seasons, I am clearly of opinion that April is the best month in which to move large plants, as then the buds are fast swelling and growth just forming, the action of root and top being simultaneous. Evergreens under such favourable conditions quickly become re-established. If transplanted in the autumn, it must be done early, for if they have not taken fresh root before winter sets in, they stand little chance of living, and this anyone may see, for if he only look around now he will find how severely many Evergreens have suffered that have not been disturbed, and what chance than would any have had if they had been moved, as most surely the sap would have been dried out of them and all the leaves have perished? There are some kinds, however, more amenable to transplanting than others, and among these may be mentioned Rhododendrons, Aucubas, Box, and Yew, which generally lift with large balls, as they make plenty of fibre and root near home. Hollies and Barberries are very difficult things to deal with if they are of large size and have not been prepared by previous transplanting. I

dry or suffer more than can be helped. To prevent these things happening, every preparation should be made for getting them into their places or positions as quickly as possible by having holes of sufficient size dug ready to receive them, that the planting may be carried out expeditiously and a thorough watering in quickly follows. For all large plants the watering is a very important matter, as it is impossible to put soil or convey it where water will carry it, and soil should always be washed in that all cavities may be filled, which can easily be done by throwing in the water in quantity with great force, at the same time swaying or moving the head of the plant, which will cause or allow the puddle to draw under and in and around the ball, the subsidence of the whole giving any evergreen shrub a good chance of growth. The final filling in of the soil should be left till the settlement referred to has taken place, and following on immediately after a good mulching be given, which prevents evaporation, and therefore keeps the earth about the roots in a uniformly moist condition, thus greatly favouring the plants. If these are tall, or in exposed positions where they are likely to be affected by the wind, they should be staked in some way, and one of the best methods is to use three stakes to each plant, and place them tripod fashion with the feet well out, and it matters not then from which quarter the wind may come, one or other of the stakes offers resistance and the plant is kept right. Stout strings applied in a similar manner answer the same purpose, and so does wire, but whatever is used care should be taken to provide against any chafing of the stem where the supports are attached, and the part should be well padded with something soft before the cellar goes round so as to protect the bark. D.

3485.—Olematis montana.—C. Jackman, next to the above, is the hardiest of any in the Olematis family, and it certainly is most profuse in the way it gives its blossoms. Another advantage possessed by this variety is that it will grow in any situation; but, of course, succeeds the best where it obtains abundance of sunlight. The first week in February the growth of the previous year should be cut down to within 2 inches of the base. Sir Garrett Wolsley is a purple variety, with a darker bar across each petal, as it flowers from the wood of the previous year's growth but little praning is



Flowering-branch of Lily of the Valley Tree.

em just now engaged at some, and have a lot to move ranging from 10 feet to 15 feet high. The plants are all got out of hedgerow banks, the best among them being those that have been headed at some distant time, as they have what is here termed a "tod," that is a large bottom, and I always find that such plants feel the lifting less than others, and they generally start off at once. The thing in moving Evergreens, such as

HOLLIES, is to have them as short a time as possible out of the ground, and not to let them

required. Lady Caroline Neville (pale-blue) is free in its flowering propensities and compact in its growth. Flammula has pure white blossoms, small, but emitting a charming perfume, flowering in September.—S. P.

3484.—Pruning of Syringa and Guelder Rose.—Any pruning required should be done during the month of May after the flowers have faded. In trees so young pruning is not necessary. Even if it is it should not be done until the time named, and then only removing a weakly growing branch from the

middle of the bush to give space to those left that the growth will be thoroughly matured, as upon this point depends whether flowers will be produced the next season or not.—S. P.

—No, these shrubs should not be pruned except under exceptional circumstances, such as when they get too large, and then they may be cut back as soon as they go out of flower. Your gardener evidently belongs to the cutting-down race, who prune for pruning's sake regardless of the consequence. One of these men I know has lately sheared off all the beauty from a Ivy-covered gateway by cutting back the Ivy of many years' growth close to the wall, exposing both dead and green branches, which will take years to clothe with growth again in a natural way.—J. C. C.

3482.—**A high hedge.**—As an evergreen screen is preferred, neither Quik nor the Myrobella Cherry will be advisable to plant. The best and quickest growing shrub for such a purpose is Thuja Lobbi; it is far preferable to either of those "O. P. B." names. Plants 4 feet high might be planted without delay, thoroughly preparing the site by deeply trenching the soil and adding manure freely, remembering that the better the preparation given to the soil the greater are the chances of success in obtaining a high hedge quickly. Thuja Lobbi can safely be reckoned to grow 1 foot every year after the first year of planting. It will stand clipping quite as well as Cupressus Lawsoniana, but is not quite so dense in its growth, but will grow twice as fast and will withstand any wind. Holly and Yew make capital hedges, but are rather slow of growth. Laurel makes a capital hedge, but it gets bare at the base in time, necessitating cutting it down to induce it to make fresh growth to furnish the base. Privet grows fast, but does not make so strong a hedge as T. Lobbi, especially if in an exposed site.—S. P.

Honeysuckle and Wistaria in flower.—Allow me to call attention to the fact that here we have the Honeysuckle and Wistaria in flower, and Roses in bud on the house, which strikes me as an unheard-of thing on the 6th of April, in Mid-Devonshire, 500 feet above the sea.—M. C. BURBIDGE HAMBLET.

OUTDOOR PLANTS.

EVENING PRIMROSES (ENOTHERA).

The Evening Primroses are not nearly so much seen in gardens as they should be, their striking appearance and great freedom and long continuance of flowering entitling them to a large share of attention. There are now many fine species and varieties. They should be planted in good deep loamy soil, and in dry weather in summer an abundance of water at the roots is of great advantage, together with mulching. Few plants are better adapted for massing in the flower garden than these Evening Primroses.

HARDY CYCLAMENS.

WHEN the hardy sorts are in the hands of the planter they require perhaps somewhat more care than those are apt to believe who have only seen them growing wild, and more especially in the case with corms that are being planted which have not previously been established in pots. If you are dealing with the naked corms of Cyclamen corm of the age of three or four years, some may be found to have long persistent woody stems, from half an inch to 2 inches or 3 inches long, on top of the corms, which clearly indicate that such roots or corms have been previously grown at some depth from the surface. Other corms, which may be of equal size and age, may not have such long stems, and in the case of these they have assuredly been grown at the ground surface level, and possibly with the corms partly above the surface. Now, as from these long or very short stems (for there are short rudimentary ones, even where they are so short as to be almost invisible) the leaf-stalks spring mainly from the top, but often in the

case of the long ones from the lower parts of the stems, it is quite evident that, whereas those with the very short stems may be planted either near the surface or deeply, you cannot expect success in planting the longer stemmed ones unless they are somewhat deeply buried, to correspond with the conditions under which the stems in their former home came into existence. I hope I have made my meaning clear on this point, because those who have a partiality for the older corms for the purposes they suppose of getting quicker and better effects from size

practically, in nothing but small chips of rock. In all cases the hardy Cyclamen should have well-drained soil, and a good rule to follow would be to set the corms 3 inches deep at least, as then, all other conditions being suitable, they grow more luxuriously, and last, but not least, afford a better spread of their beautiful foliage, as then, owing to their depth, all the while the underground leaf-stalks are lengthening they would also be spreading, as also the flower-stalks. Fewer corms so planted would cover in a short time a much bigger space than a corresponding number if set nearer the surface. J. W.



An Evening Primrose. Engraved for GARDENING ILLUSTRATED from a photograph sent by Mrs. Newman, Haslehurst, Haslemere.

and strength will simply defeat their own object unless the stemmed corms are planted deeply enough. Some people are all the more likely to err in this matter if they overlook the long-stemmed feature, from having seen many corms, of from 2 inches to 5 inches diameter, cropping out of the surface like black boulders. If these friends will notice such out-cropping corms, they may have an ocular demonstration of the fact that the exposed corms rarely develop stems, and that when they do, it is because they are found in a tilted position with the upper corm centre totally or partially under the surface. By sequence we come now to another feature important to the planter to which the term "tilted," just used, points. The shape of all the species of Cyclamen corms varies, and I believe among all are often to be found those comparatively flat, and often, with so to speak, a depressed ring round the sprouting part of the corm. Now in many parts of land this flat surface or ring tends to hold wet, which during the sunny days and keen frosty nights of our winters affords to frost an abnormal grip, the consequence being that the tissues of the corm often become ruptured, and I believe I shall not be far wrong when I say that such corms newly planted in retentive soil are often killed. A very simple method to prevent this may be adopted in planting. Simply tilt the corms so that the wet cannot lodge. This will not materially interfere with the upward or foliar growths; they will find their way just as well as otherwise, and I believe that it is owing to the accident of wild specimens assuming that position either under or partly above the surface, that the tilted tubers or corms are found to live longest and grow to the biggest sizes. I have watched this habit of the hardy Cyclamen for many years, and there in, I think, something in it. There will doubtless be exceptions, as in the case of those which are found growing in somewhat dry situations, and in very stony soil among the roots of trees or in crevices, and again where they are met with

SPRING FLOWERS.

THOSE who are really fond of gardening do not estimate their flowers merely by their gorgeous hues or the brilliancy of their colouring entirely. Certainly, these things afford a great deal of pleasure, and a bright and pretty garden will always be especially attractive. But the true lover of flowers enjoys the interest which may be attached to a plant which requires to be closely examined before the full beauty of its flowers can be appreciated—a plant which does not challenge attention, but would be passed over unnoticed by the casual visitor, who might thoroughly enjoy the more conspicuous flowers. I do not mean to disparage the beauty of bright and attractive flowers in the open garden, but I think there is a special pleasure in cultivating plants which are distinctly not showy, but are nevertheless most interesting. Such things are especially to be found in our rockeries, but not only there. The herbaceous border is also a place for objects of special interest. At the present time I have in flower on the rockery a plant to which my attention was drawn some time ago by seeing a coloured plate of it.

THE WHITE DOG'S-TOOTH VIOLET (*Erythronium dens-canis*). I had always known the common pink variety. It is to be found in every garden, and it is worthy of a place in every rockery because of the striking character of its foliage. I have found it a shy flowerer. But, to my mind, the white variety is much more beautiful. The extremely delicate texture of its long-pointed petals and the fragile purple anthers, which show themselves when the sunshine induces this little flower to expand itself fully, make the White Dog's-tooth Violet a really beautiful thing. It seems quite hardy, and the spotted leaves at this time of the year are very attractive, but flowers are not generally numerous. Perhaps for that very reason we appreciate them the more when they do come. The plant seems to like a shady nook, and it evidently grows best in a strong peaty soil. It does not like being too dry. The flowers push up from among the tufts of spotted leaves, so that when the former are gone, and they do not last long, the plant is still an ornament to the rockery, as it grows by some old grey stone, which affords it the double benefit of shade and damp. Another flower which comes rather later and would be easily passed over, except by those who like to examine closely the beauty of small flowers, is the tiny little

SOLDANELLA.—This plant seems to like a gritty soil. I remember very many years ago seeing it used as a border to the beds of a so-called "Italian garden." It used to be covered with its pretty little fringed bells in the months of April and May, and the round flat leaves were always green. But this Italian garden was in a very sheltered corner on the south coast of Cornwall. It has flowered with me in this country, but I gradually lost it. It is always difficult to manage small plants which will not take care of themselves to a certain extent. When other plants begin to grow strong and rapidly with warm days, the tiny delicate little things are easily forgotten till it is too late to repair the mischief. I intend to renew my acquaintance with the beautiful little Soldanella alpina. This year I have made a point of comparing the relative advantages of

SCILLA ALPINA AND CHIONODOXA LUCILLÆ.—It seemed to be thought when first this Chionodoxa made its appearance that it was to throw our old friend the beautiful Blue Squill into the shade. We were almost recommended to throw away the old favourite and to adopt the new in its stead. However profitable this might be to

some, it was advice which would have been reins to those who love the frail, but brilliant little plant which, with its sheet of brightest blue, is making our borders and tub gardens lovely in the sunshine of this dry April weather. The *Chionodoxa* has the great merit of throwing up its flowers well, till they look up at you with their sweet little light blue flowers, and seem to ask for admiration as you look at them. But they last a very short time, and ere gone while our old friend the *Scilla* is still in perfect beauty. This is a great advantage in the latter; but again the *Chionodoxa* scores by coming out the first in early spring. I wish I had taken careful note of the time, but I did not do so. I only noticed that in my own garden and very much in the same aspect the *Chionodoxa* was well in flower when *Scilla amona* was only just showing above the ground; but in my opinion nothing can excel the rich blue colouring of the *Squill*—not yet showing the slightest sign of passing away, though it has been in bloom some time. I think perhaps to mix with the bright golden onps of *Crocus* and the pure white of the *Snowdrop Chionodoxa* may be the best, for it can be made to flower at the same time; whereas the *Scilla* does not come till the later *Crocuses* are almost over. Both have the great merit of being exceedingly hardy. *Chionodoxa* especially seems to be one of those things which is not easily nrooted. When you think you have removed all the bulbs, you will find next year straggling bits coming up and flowering with wonderful freedom. I like this early *Chionodoxa*, but it can never take the place of the later *Scilla amona*. Cottage gardens still rejoice in the possession of that pretty little shrub the

MEZERON, which just now is in its full beauty. It may be due to the old days of hedging out, but at all events for some reason this grand old plant is very scarce in large gardens. Its mode of growth is not ornamental, but one can put up with that for the sake of the sweet red and white flowers which are ready to brave frost and snow in the early days of March. In our cemetery there are some fine plants of the white variety, showing how much the cottagers think of it, as they deem it worthy of a place by the grave of some dear one who has been called away. The cylindrical mode of flowering with its red or white blossoms sessile on its rigid stems is almost grotesque in its appearance. It is a pity such an early flowering little shrub is not more abundant in the gardens of the rich, but wa delight to see it and to know how much it is valued in the gardens of the poor. *Tritelia uniflora*, though not actually in bloom yet, will soon be sending up its pretty, stary flowers. They look exceedingly well when planted at the foot of a large stone, where, undisturbed by any interfering tool, they will grow in the Grass and brighten the spring rockery. The ends of the stalks when gathered have an Onion-like smell, but this is too slight to interfere in any way with this little flower either in its usefulness when gathered, or with its general attractiveness. It is an exceedingly showy and free-flowering bulbous plant, and as it has the advantage of being sold at a very low rate, it is just one of those things which might well be used in large quantities to adorn the spring garden.

COLOURED PRIMROSES are just coming into their full beauty. I find the only way to grow these beautiful spring flowers satisfactorily is to sow the seed early, prick the seedlings out when they are nice little plants, and finally put them in autumn where they are to bloom next year. They then make plump heads of strong bloom in the spring. Writers on flowers have repeatedly said that Primroses are at their best the second year. Accordingly this year I made the trial, and I have left some plants in their places for second blooming. The result is a distinct failure. The plants have become tufty with small leaves and a few scattered flowers, quite different from the one-year-old plants which I usually have, and which form one of the chief ornaments of the spring garden. If the plants are to be kept over a second winter, they must, I am convinced, be pulled to pieces and replanted. I should be glad to hear the opinion of other growers of these lovely spring flowers on this point. Those which I hope to be useful next spring are now just getting into their second leaf.

LEOPARD'S BANE (DORONICUM).

ALTHOUGH these are considered by some as coarse, they are free-growing plants, and of much value on account of their earliness and the great show they make on a border, the best among them being *D. plantaginum excelsum*, (figured below), which has big yellow Sunflower-like blooms that are produced at the ends and top joints of each shoot. It is so hardy that cold weather does not appear to retard or injure the blossoms, which last in full beauty a very long time, as they are self-protecting by closing and opening each night and morn. The next in point of merit to the one above named are *D. austriacum* and *D. coccineum*, which are of neat, close habit, and good for cutting from or to grow in semi-wild parts of the garden, for which purpose these *Doronicum* are well adapted, as they not only look natural in such positions, but they can take care of themselves. All the sorts are easily propagated, as they admit of ready increase by division, which may be effected at any time during the winter, or, better still, just as growth commences. D.

3469.—Anemone fulgens.—As you did not plant the *Anemones* until the time came for them to flower, it is no wonder they failed to please. I advise you to start again with fresh roots, and get them planted out not later than the first week in September. Those you have now growing must be allowed to remain to complete their growth, and afterwards be taken up and kept out of the ground for two months before they are planted again.—J. C. C.

3479.—Lily of the Valley.—Whether the *Lilies* should be uncovered at all depends on how much the manure has wasted during the winter. Four inches is too much to leave, but if it has wasted down to 2 inches let it remain by all means, as it will nourish the roots, and you will get better spikes of bloom next year if you do not this. In your light sandy soil a soaking of liquid-manure will do good once a week during the summer, if you can manage it.—J. C. C.

3481.—Treatment of Crown Imperials.—I do not know to which kind of *Crown Imperial* this correspondent refers, but I do know that for many years I have been puzzled to understand how it is that the yellow

strongest bulbs is sufficient in one clump, planted about 6 inches apart. The soil should be deeply dug, being stirred quite 2 feet deep to allow of a quick percolation of the moisture from heavy rains. With the natural soil add decayed leaves and old potting-soil freely. Plant the bulbs 6 inches under the surface, covering the ground afterwards with decayed leaves. If the bulbs are strong they ought to flower freely and regularly.—S. P.

3474.—Cutting down Delphiniums.—When I was at the Langport Nurseries two years ago last an nun, where *Delphiniums* are grown by the acre, Mr. Kelway pointed out to me the difference between those plants from which the flower-stems had been cut down as soon as the bloom was over, and those that had been allowed to ripen a crop of seed. The latter had hardly a leaf left about the old stools, while those that had been cut down early had large tufts of freshly-formed foliage, which quite covered the old stems. From this example I am perfectly satisfied that it is best to cut down the old flower-spikes as soon as the blossoms fade.—J. C. C.

3430.—Annals for show.—Sow the annuals named and others not later than the end of the present month (April), and thin out to 6 inches apart, so as to obtain fine flowers. The ground should be in good heart, and liquid-manure will be beneficial as soon as the plants show flower-buds.—E. H.

3477.—Border Carnations.—Do not water the plants unless really necessary, but in a very light and dry soil it may be really required. Water them in the forenoon—about 10 a.m. or 11 a.m.—and then the foliage will be dry before night, and use cold water only.—B. C. R.

3467.—Plants for a shaded plot.—In such a bed as the one described *Calceolarias* would succeed much better than "*Geraniums*," and *Fuchsias* and *Pansies* better still. If you want shades of scarlet or crimson try some *Begonias* (tuberous).—B. C. R.

ROSES.

SOME EARLY-FLOWERING HYBRID PERPETUAL ROSES.

It is pretty generally admitted that every Rose has its season of flowering, but it is doubtful if this is always sufficiently recognised when making selections for special purposes. I am quite sure there are some cases when it would be decidedly advantageous to know the varieties of Roses that in an average season flower about the same time. Supposing, for instance, one



OUR READERS' ILLUSTRATIONS: *Doronicum plantaginum excelsum*. Engraved for GARDENING ILLUSTRATED from a photograph sent by Mrs. Brockhills, Clifton Hill, Garstang.

ones thrive amazingly in a cottage garden where they are simply left alone, while I, after giving them every possible care, cannot get them to flower at all. And if I leave them undisturbed the bulbs decrease both in size and number. I hope someone will help this enquirer in a more satisfactory way than I am able to do.—J. C. C.

—Directly the foliage turns yellow and dies down the bulbs should be taken up and replanted into another part of the border, choosing the most sunny spot. Three of the

wanted to exhibit at a flower show held towards the end of June a selection of twelve or twenty varieties and had only room for a limited number of plants, it would be a decided gain to know which varieties might be depended upon to be in flower at that time. Again, it might be that the owner leaves home early in the summer, and would like to see the Roses in bloom before he does so. In either case it would be an advantage to be able to make a suitable selection. With a view to improve my acquaintance with the different characters of the Hybrid Par-

petals, I visited for two years in succession a large grower of these flowers to ascertain what difference there was in their behaviour. Each time I paid my visit towards the end of June. I came away convinced that there is a fairly large number of varieties that can be depended upon to flower in advance of the majority of the same section, and, what is equally important, the quality of the flowers was quite equal, and in some cases far superior to, that of the same varieties later on in the season. Indeed, I am disposed to think that the colour in the dark flowers is more intense than when they are produced under a broiling July sun. I go farther, and say that the

TRUE COLOURING of the darkest Roses can be seen only in the early and late part of the season, unless the flowers are inspected within an hour or two after they expand. Only those who have watched the behaviour of that comparatively new dark Rose, Earl of Dufferin, when it first flowers in the closing days of June can realise its distinct character, as it undoubtedly stands alone as the best of those which bloom early. Of other varieties which I found in bloom at the same time I must mention the following: Victor Hugo was particularly striking. Marie Baumann on out-back plants was also good. In the same line of colour Prince Camille de Rohan is quite reliable. Some good red flowers with different shades of colour will be found in General Jacqueminot, Charles Lefebvre, Alfred Colomb, Charles Felix Britton (intense dark), Mrs. Baker, and J. D. Pawle. The heat amongst the newer varieties having orange or rose-coloured blooms is Mr. James Brownlow, the flowers of which are very sweet and the foliage large and handsome. Lady Arthur Hill is also distinct and beautiful. Caroline d'Arden not only flowers early, but is very fragrant. Alphonse Souperet, Heinrich Schnltheis, Mme. Gabriel Luizet, Mrs. J. Laing, Violette Bouyer, and Mme. de Castellane were in splendid condition on both occasions when I saw them. Bonle de Neige is still the earliest white Rose in this section. Of course there are a good number of varieties that follow those I have named very closely, but I feel sure I have not named any but what may be relied upon to flower early under ordinary conditions of soil and season. While on the subject of securing early Roses, I should like to refer to the remark I have heard from some growers as to the Manetti stock throwing flowers some ten days or a fortnight before the same variety upon any other stock. For some seasons past I have noticed when going through large Rose quarters that there was some difference in the stocks as regards the production of early flowers, but I thought a week was the outside of the difference between the Manetti and the Brier in this respect. I may, however, be wrong in my conclusions. I am, nevertheless, glad that attention is sometimes called to the superiority of the Manetti stock for giving us early flowers. J.

Two good White Roses.—If one were tied to cultivate any one variety of White Rose more especially for forcing, I do not suppose he would choose any other than Niphetos. The two varieties that I propose giving a few remarks upon, however, do not include Niphetos; they are Souvenir de S. A. Prince and The Bride, probably the two finest White Roses sent out since 1844, when Niphetos first made its appearance. Seeing what strides Roses have made during late years, it is saying much for these two varieties when one declares them to be the two best White Tea-scented Roses introduced during the last forty-eight years. The Bride, sent out by an American firm in 1895, is a white sport from Catherine Mermet. For exquisite shape and good size, combined with extra long-lasting powers, I do not think this Rose is surpassed. It is one of the finest Roses grown, an excellent variety for forcing, a good grower, and altogether first-class. Souvenir de S. A. Prince was sent out by Mr. Prince, of Oxford, in 1899, and is, like The Bride, a sport from another grand old Rose only two years younger than Niphetos. Souvenir d'un Ami (1846) is the foster-parent of Souvenir de S. A. Prince. This is one of the very sweetest scented Roses we have, pure white in colour, of grand size and shape, while the plant is of a vigorous constitution. For cultivation out of

doors, I would prefer this even to Niphetos, as it is not quite so delicate and easily affected by the least bad weather, as Niphetos unfortunately is. To all who grow Roses, if only a dozen or so plants, I would strongly recommend this grand white variety, which is equally good in the open air or under glass, for exhibition or for garden decoration.—R.

Propagating Tea Roses.—The present is an excellent time for this operation where plants are forced under glass. Wherever a flower has been cut from a side shoot, the remaining portion of the lateral growth will form a good cutting. Any blind growths will also do for the same purpose, and as soon as they are about three parts ripened is the very best time for the operation. Prepare some pots of sandy soil containing a fair amount of leaf-mould, thoroughly draining these. Remove the cuttings with a small portion of the older wood attached if possible; if not, cut them off clean just under a leaf or joint. Do not remove more than the one bottom leaf. Insert them firmly, give a good sprinkling, and place them in some close propagating-pit or frame. They should be kept perfectly close until rooted; after this has taken place, a little air may be given gradually until they are able to bear the full exposure. Pot on into the same compost, using this a little richer at each successional shift into larger sized pots. It will be well to partially shade the young plants for a short time after the first potting, but after this they may be treated the same as other Roses in pots. Many prefer Roses upon their own roots, and there is no easier plan of working up a stock of this class than by following the simple method here given; and at the present time, and for some two months to come, there will be many opportunities of securing serviceable cuttings. Plants struck now will make neat little bushes for transplanting during the next spring, and will be quite as hardy after a summer's growth as if they had been raised in the open air.—N. S.

ORCHIDS.

THE BEARDED DENDROBE (DENDROBIUM BRYMERIANUM).

Some beautiful flowers of this species come to me from "B. W." He says the plant from which these were gathered is exceedingly gay, having more than forty of such blossoms on it. "B. W." also says that another Dendrobe which he bought at the same time never opens its flowers, but casts them off before expanding. What is the cause of this? The plants are both potted alike, and they both stand side by side. Dendrobium Brymerianum was introduced into England from Burmah by the Messrs. Low, of Clapton, now close upon twenty years ago, and when it flowered it was named in honour of Mr. Brymer; but the plant that drops its flowers was not introduced for some time afterwards. It is known by the name of *histrionicum*, the short-bulbed variety of Brymerianum. Its flowers are smaller than those of the typical plant, and it frequently, as stated, does not open them at all, which is said to be through being self-fertilised; but if that is the case I cannot say, but I do not think it worthy of the pet it occupies, and were I to prove a plant as you have done I certainly would consign it to the furnace and cremate it, for it is a very bad variety and not worth growing. However, these short-bulbed plants want to be proved bad before they are cast into the flames, for I have seen some of these produce as good and as fine blooms as those now sent, and until they have been proved they should not be destroyed. And, again, I have seen some of the long-bulbed varieties produce flowers with a much shorter fringe to the lip, and much less bright in colour than those now before me. Dendrobium Brymerianum is a plant which I have found to thrive best in small pots or baskets, which should be well drained. It does not require much soil about its roots, but it likes good exposure to the sun and light, shading only for a little time during the very hottest part of the day. It likes strong heat and a free circulation of air, and to have a liberal quantity of water to its roots, and the atmosphere to be kept moist during its growing season; but when dormant very little water must be given it, and it may be kept much cooler. It flowers at various

times in the autumn and spring; but I think the months of March and April are the true times of its flowering. MATT. BRAMBLE.

DENDROBIUM NOBILE.

I AM asked how to grow this plant by "Gertrude Mansers!" She says that she is so struck with its beauty that she feels that nothing will satisfy her but the possession of a flowering specimen. Well, I am not surprised at this, for it really is an Orchid which excites the admiration of every one, be they professional growers or not. The plant is a very old inhabitant of our gardens, having flowered first in the celebrated collection of the Messrs. Loddiges, of Hackney. It is widely distributed in India, and Mr. Sander has introduced some fine varieties from time to time from different parts of that country. I have before me now, at the time of writing this, flowers of some fourteen or eighteen varieties, all of which are beautiful, and when seen thus together their differences appear more distinctly than when seen singly and at wide intervals. I think the form called *nobiliss* is the king of them all for its size of flowers and depth of colour. *Sanderianum* is another good coloured form which comes close to the noble majus of my early days. *Cooksonianum* is a wonderful form, having its two petals coloured at the base the same as the lip, and when spread out flat it really presents the appearance of a flower with three lips. Another good form is *Schroederianum*, which is a heavily marked light variety. *Mogans* is a good and pretty flower, *Cypheri* appears to be a large light flower, and *albescens* and *album* I too have before me. The first is a very pretty and distinct flower, whilst the last carries with it quite the mark of the old species in the lip, being pure white in its outer segments. These and many others are all worthy of a place in any and every stove or Orchid-house in the country, and they may be grown in small pots, with one or two flowering stems, or in large pots or baskets, with many stems, bearing hundreds of flowers, and by a little management they may be had in bloom during all the first five months of the year. Now, this Orchid requires its roots to be well-drained whether grown in pot or basket, and it should be potted in a mixture of peat fibre and Sphagnum Moss. I formerly used more peat than Sphagnum, but from recent experience I think this was a mistake. Press it down firmly, leaving the plant sitting upon a little mound, slightly elevated above the pot's rim. When growing the plants should have good heat and be liberally watered, and they should also be syringed overhead daily; but when the growths are made up water should be withheld entirely and the plants removed to a cool but airy house, where the growths may ripen. They should be kept in a dry condition and in the greenhouse during the autumn months and the beginning of winter, when the flower-buds will begin to appear on the two-year-old growths, when they may be taken into a warmer position and a little water given at first; but as the flowers increase in size this element may be more freely administered, and these blooms will in due time unfold in all their beauty. I would advise "G. M." to choose the earliest and most forward plants for the first removal to heat, leaving the other plants in the greenhouse, as by this means she will provide a succession of flowers; but if a big display is wanted of this one plant all at once, why, they must all be started about the same time, and immediately after flowering the plants should be taken in hand and repotted or resurfaced, as they may require it, and be placed in their growing quarters and treated accordingly. I have seen this Dendrobe flower upon its last-made growths with their leaves still upon them; but such plants I have found do not continue to do this, but, as a rule, they pass over a season and then again flower upon the old or second year's wood. A remarkable evidence of this was shown in the pruned plants of this species that were exhibited at the Temple Show of the Royal Horticultural Society last season. These plants were flowering upon the growths last made, which was not natural to them; but I do not know how the same plants stand affected this season. MATT. BRAMBLE.

3384.—Tarring wood.—If ens plant of paraffin be added to a gallon of tar it will dry much quicker, and set much harder and be more durable.—I. GIBBER.

FRUIT.

PEAR "BEURRE DIEL."

THIS Pear is said to have been discovered at the end of the last century at the Castle of Perce, near Vilvorde, now known as the Maoor of Trois Jours, and that until 1819 it was known as Beurre des Trois Jours when Van Mone obtained grafts, and, believing the variety to be unnamed, dedicated it to his friend, Dr. Adrien Diel, of Dretz, in the Duchy of Nassau. There it retains its original name. Here it is well known as Beurre Diel, whilst the magnificent fruit sent from the Continent and Jersey reaches the English market under the name of Beurre Magnifique. The fruit (see illustration) is obovate, of the largest size when grown against a wall, and of medium size from bush or standard tree; is pale green at first, changing to yellow, and is covered with large russet dots and blotches of brown russet; eye with short segments set in an uneven basin; stalk an inch long, short and curved, inserted in an open, uneven cavity; flesh yellowish-white, tender, buttery, and melting; in season from the end of October to the beginning of December, a period now replete with very choice sorts. The

soil, and one of the reasons generally advanced for tree lifting is that the roots have got too deep, a pretty certain thing to happen if trees are neglected, but not if they are looked after at all times of the year. I grow a good many fruit-trees and bushes of all the leading kinds, but the time spent on root-pruning is nil. If a tree gets into an unfruitful state I root-prune with a spade and mattock, taking the tree right out, root and branch, and putting it on the fire, as remedial measures cost more than a new tree, and then the site, after being well prepared, is at liberty for a new tree, and as I always keep a good stock of young trees coming on, no time is lost, for a tree that will bear some fruit the following year can be used, and herein lies the reason why I do not require to root-prune. Supposing that the trees are brought in as maidens, or one or two years old, from bud or graft, or even on their own roots, they are planted out for the purpose of developing into trees fit to transplant into permanent quarters during the next planting season. The roots are carefully spread out near the surface, covered lightly with soil, trod in firm, and then mulched to prevent injury from frost or drought, and when required for permanent planting they will be found to have a

THE KITCHEN GARDEN.

COLLECTIONS OR SELECTION OF SEEDS.

THE rage for collections seems passing away, and the more useful and practical plan of making selections seems gaining ground. This is not to be wondered at, for if the owner or cultivator of a garden does not know what he requires for the season, it is certainly not to be expected that a stranger can make out a better list, and the unanimous verdict of those of my friends who have gone in for collections is that they get a good many seeds that they did want and found useful, but that they had so many that they did not require at all, that it caused the sorts they did utilize to cost them more than if they had selected the kinds they had space and use for, and paid, perhaps, a little higher figure for them. If we take the most important classes of vegetables, such as Peas, that are in most gardens in request for as many weeks in the year as they can be had, we find in practice that it is very difficult to allot the precise quantity that a moderate-sized garden would require, and if that were the only difficulty, it might be got over by having collections rather under the quantity one expected to use, and making up the deficiency from the neighbouring seed store. The question of suitable varieties is even more important than quantity, for in the outskirts of populous towns, where the majority of villa residences are located, Pea-sticks are such an expensive item, that they cost nearly as much as the Peas could be bought outright for, and for this reason all sorts of contrivances in the shape of wire supports are used, or, as is more generally the case, all the tall-growing varieties are discarded, and only the dwarfs, such as American Wonder, English Wonder, William Hurst, and Little Gem, are used. But if there is any difficulty in making up a collection to suit any two gardens without first consulting the wishes of the owner in the matter of such a universally-used vegetable as Peas, how can you expect to be more successful with such vegetables as are held in the highest estimation in one garden, but never used if grown in the next?—I allude more especially to Parsnips, Broad Beans, Salsify, Scorzoneria, Chicory, and Artichokes—that one finds the packet left unopened at the end of the season, and eventually cast into the furnace. Gardens as a rule are not any too large to supply the household they are attached to, and one of the most important things in the management of a garden is not so much the mere planting of certain crops, although a good deal depends on that, but in making an estimate at the earliest date of what space can be allotted to each vegetable, and what quantity of seed will be required, allowing for casualties incidental to our variable climate. H.



Pear "Beurre Diel."

tree is a vigorous grower, attaining a large size, hardy, a most abundant bearer either as a standard or upon a wall. Fruit grown in the latter mode is often inferior in flavour to that produced by standards, dwarfs, and espaliers, though brighter and of larger size. Being so reliable as a cropper, surplus fruits of Beurre Diel are invaluable for cooking, a way in which many dessert Pears are extensively used. C.

ROOT-PRUNING VERSUS ROOT-LIFTING.

If we may judge of the amount of root-pruning done by the number of articles written on it one need go no further to seek for the cause why fruit crops are so frequently below the average, for the youngest novice in the art can tell you that only trees that are well established at the root can bring crops to perfection, and certainly no surer plan of defeating the very object for which fruit-trees are planted can be invented than that of perpetually disturbing the roots. It is like children's gardening when the plants are lifted and replanted nearly every day to see how they are getting on below the surface. Yet one need not dig up a tree for this purpose, as the growth it makes, or the character of the fruit it produces, will tell as surely what kind and quantity of roots are below the surface as any practical fruit grower as if the tree were lifted bodily out of the

mass of fibrous roots, and the wood will be of that medium strength that can hardly fail to be fruitful. But this could not be done so well if the trees had to travel long journeys by rail. Careful planting is a great safeguard against deep rooting. Whatever direction is given to the roots they will continue to follow it for years, and large, but not deep, holes to receive the roots should be prepared before the tree is lifted. Put rough turf or loam under the tree, and spread the roots out in all directions, but do not bury any of them more than 6 inches deep, and keep a good mulching over them, and see that they never get dry. If any tree grows too strongly lift it and replant it again, which will usually be all that is necessary to insure good fruitful trees, but if any after that do not repay the care given them with good fruit, grub them out and start afresh, for it is only wasting valuable time to try to coax some trees into fruitfulness. If the stock is healthy, however, it may be headed down and grafted; but if any signs of canker are visible, or the young wood dies back, grub the tree up and start afresh. J. G., *Hants.*

Caterpillars on Gooseberry trees.—In answer to enquiries in GARDENING, I have never had these pests since I planted Broad Beans in rows between the trees. Before then the trees were sown up with them; but this remedy was suggested by a friend, and at once acted upon with the greatest success.—M. L.

Neglected vegetables.—Dining lately

in Shropshire with the vicar of a country parish, I was delighted to see the Common Dandelion (*Taraxacum officinale*) served as a vegetable. The first leaves had been pulled before the flower-buds had begun to appear, and were then plainly boiled and served on a set like Spinach. The result was a very delicate vegetable, with a distinct trace of bitterness, but one not so pronounced as to be at all unpleasant. Just at this moment, too, the tops of the Common Stinging Nettle (*Urtica dioica*) are coming to their best. At the close of winter, in the first weeks of spring, is the period when fresh green vegetables are most scarce, and it is at this period that the claims of the Nettle and the Dandelion deserve special notice. Growing by the wayside and on waste plots, they cost nothing to produce, and, so far, free from the pampering of a plethora of manure, which market vegetables too often get, they are of a healthier texture. Peaching up in hedgerows and sheltered corners before any other vegetable, they come, not only as a food, but as a better substitute for "spring physic." If all our country clergy would follow the example of the one I have mentioned, and not only preach domestic economy, but put it into practice in those little things wherein it is of most value to their poor parishioners, we should have less occasion, in praising our thrifty Continental neighbours for making a good dinner out of a basket of wayside herbs, to condemn our own

peasantry, who too often live in the frying-pan. Some of the water in which the Dandelions or Nettles have been boiled may be poured on to Oatmeal and eaten as "brose," and thus those properties which are of special value for purifying the blood will not be lost.—M.A., B.C.L.

Leeks.—It has occurred to me that many amateur, and other gardeners, too, may now be throwing away surplus Leeks. Few seem to know what an excellent dish Leek bulbe make. A hint to them might be timely.—JOSKIN DICKINSON.

HOUSE & WINDOW GARDENING.

SIMPLE HOUSE DECORATIONS.

We can never be too simple in our use of plants and flowers, especially when we essay to ornament or decorate our homes with them. The finest of plant growth is too sacred, the loveliest of our flowers too precious to be wantonly and wastefully employed, no matter how great our joy or how deep and desolate our sorrow. Of late years there has been an unwholesome rivalry in the reckless use and inordinate profusion of flowers as used for functions and festivities of all kinds. It is to be hoped that the extravagant Second Empire sort of profusion and wastefulness of flowers has been ended, and there are already signs of this being done, and with the best results, for the true and most satisfying use of flowers, dainty or simple, can never be measured by their cost in the market, by their rarity, or by the difficulty or expense of growing them. Flowers in variety and in plenty let us have by all means, but it surely is not at all necessary that choice Orchids and rare Pithier-plants should be frozen to death on icy rockeries or frizzled up by the heat of gas-light in order that we can enjoy their exquisite beauty. Only a few years ago and the pendulum swung in the other direction, and it was hereby in many gardens to cut a flower. As an illustration, we have only to go back to the days of show plants, when in many gardens plants were mainly grown for prize at the horticultural shows, and the actual owner dare not cut a flower from them. There is a story told of a well-known lady who, half a century or so ago, was the acknowledged queen of horticulture in London, and her splendid collections of choice plants were rarely to be surpassed as exhibited at the metropolitan floral exhibitions. The *Amhectia nobilis* first flowered in her hot-houses, and her triumphs were many, but she could not be induced to cut her commonest flowers, and when importuned by friends whom she did not like to refuse, she generously sent them lovely bouquets, &c., which she had purchased in Covent-garden-market. The real delight given to us by flowers bears but a small proportion to their rarity or profusion. The commonest of flowers after all possess the greatest charm, and a duchess or a princess even who would scorn a bouquet of Orchids may be moved to tears by a handful of Violets or Primroses artlessly offered to her by a cottager's child. In the old show plant and bedding-out days, indeed, there were very few flowers to cut or use in any homely and simple way. Now, however, we have plenty, from the Snowdrops and Violets of spring to the Christmas Roses and Chrysanthemums of winter, and even country people having neither hot-houses nor gardens of their own may find an abundant supply of wild flowers, green or bronzed leaves, or hedge fruits many and varied, and need never allow their flower vases or glasses to be empty a single day throughout the year. Here in Europe we scarcely ever think anything pretty except it be something in the way of a flower. In Japan it is different, and leaves and stems set with huds of different kinds are there used with excellent effect. The branches of many trees may be used as room ornaments at this season, and afford a welcome and restful change from eternal floral arrangements, even although they be of various kinds of flowers. Willows, Elms, Maples, Alder, and Sycamore, or branches of Pine, Fir, Laroh, or of Anonba in herry, of Shepherdia, Cornus, or Garrya are each and all distinctly beautiful and effective if artistically placed in fresh water indoors. Branches of Apple and Pear, Cherry and Plum, or dark gnarled spurs and shoots set with rosy almond buds and blossoms are exquisite when simply arranged in the light and warmth of a sunny room. In the exquisite use of such simple and

beautiful things the Japanese have taught us much, and we might well imitate their subtle methods, at least now and then, even if only as a relief and change from our usually flowery bouquets and glasses of hlossoms and Ferns. Now and then try a few bunches of Almond or any fruit-trees in a large vessel of water just as the huds are hursting open, and watch the effect. Last year I decorated a reception room and never need a single flower; all the pots and vases used were filled with branches and leaves only, and the cool and quiet effects were much admired. Again, last winter I decorated a dinner table with nothing but dead leaves, &c., with the brown panicles of *Aslibe rivularis*, and it was much liked by all who saw it done. The brown winter leafage of Ivy, Tellima, Bracken, and Royal Ferns is admirably adapted for such use, and looks well under artificial light. What we especially require in our home decorations is variety—some constant changes of an agreeable kind—and it is here that the floral artists of Japan are superior to our own. There is no forcing nor retarding of flowers in Japan as with us, and so it follows that all their productions are at least seasonable, and one is not wearied by too long a continuance or the repetition of the same things. I have seen a room most tastefully decorated by the hostess herself in less than an hour, the only materials used being fresh green Pine branches and their brown cones, relieved here and there with dead Fern fronds, chiefly those of *Osmunda regalis*, 8 feet long, and of the most beautiful fox-brown tint imaginable. In early winter I have seen branches thickly set with crimson haws and wild Rose and Sweet Briar stems with scarlet hips need with exquisite taste as relieved with the bronzy foliage of *Mahonia aquifolia*. Indeed, I sometimes thought that we have, or use, too many flowers in proportion to the use of stems and leafage, but, at any rate, it is quite possible to artistically decorate a dinner-table or a suite of apartments without a single flower being used. This is a fact not often grasped by those on whom the execution of room decoration usually falls, and the constant and but little varying use of flowers and hot-house Ferns, often the same in kind, leads to a sameness not a little depressing to those familiar with the variety of material and the range of variation possible in its tasteful and proper employment. It is the same with plants. A healthy Palm is always a lovely and graceful thing, but it is the constant repetition—the eternal sameness—that irritates and annoys one, for that variety is life some of me at least believe. Let us have variety in our room plants, as also in our flowers, and the result will be a gain. A fresh, glossy-leaved *Aralis*, an *Aspidistra*, a group of green-leaved *Dragon-trees* (*Draecena*), a hanging-basket or two of fresh green Ivy, or of the creeping Fig, all or any of these would give us a much-needed change. By all means let us have Palms in plenty, Phoenix, *Latania*, *Corypha*, and *Cocos*; but Palms alone in time become tiring, and it is then that the wearied mind calls out for variety. This relief the Japanese obtain by using things only in season. Natural things as thus used can never weary, and our own plan should be to go more direct to garden, field, and wood for our floral and leafy decorations, and to use them holdly and simply.

3473.—Artificial manures.—Guano may be used to a moderate extent, but as an all-round fertilizer for purposes of this kind I know of nothing to equal Thomson's Vine and plant manure.—B. C. R.

2438.—Nerine sarracensis.—When the growth is completed the soil should be gradually kept drier than when in full growth to induce the bulbs to ripen thoroughly, and thus produce flowers the next year. If the roots are in a satisfactory state, and the pots of fair size, say, 4 inches in diameter for one good bulb, repotting will only be required every other year.—S. P.

3330.—Anemones from seed.—I received the following directions for sowing "St. Bridgid Anemones," and succeeded very well. My bed was a mass of lovely blooms for months, last spring and summer, and they are just beginning to bloom freely again now. Clear away 1 1/2 inches of the old soil from a bed, fill in with cow manure, add 1/2 inches fresh mould from a field, sow thinly, cover lightly, water when dry. This out as soon as plants can be handled; the thinnings may be planted again in another bed. I found they moved very well. I thought them well worth the trouble of preparing the bed, and I had no fresh field soil.—B. H. L.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruits and vegetables for drawing. The drawings so made will be engraved in the best manner, and will appear in due course in GARDENING ILLUSTRATED.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in *Gardening* free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of *GARDENING*, 37, Southwark-street, Covent-garden, London. Letters on business should be sent to the Postmaster. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as *GARDENING* has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to queries inserted in *GARDENING* should mention the number in which they appeared.

3404.—Water Lily seed.—Would "A. H." kindly say where Water Lily seeds can be got?—I. L.

3405.—Culturs of Justicia and Eupatorium.—A few hints on the culture of *Justicia carnea* and *Eupatorium aceroides* will oblige.—D.

3406.—Planting Asparagus.—Is it too late to plant two-year-old plants from 1st to 20th of April? What is the best time for planting?—W. H. D.

3407.—Peas for show in July.—At about what date should Californian Wonder Peas be sown to be ready for exhibition the third week in July.—Hon. Sec.

3408.—Planting Freesia-bulbs.—Which is the best time for planting Freesia-bulbs in Norway? May the soil and treatment be the same as for *Hyacinth*?—NORWAY.

3409.—Eucharis bulbs.—One out of some two dozen *Eucharis Lily* bulbs recently potted has sent up a flower-spoke, with two rather small flowers on it, and no leaves. Is not this very unusual?—ACTON, MIDDLESEX.

3500.—Hardy Water Lilies.—Will "A. H." be good enough to say where Hardy Water Lilies of the *Millicca* kinds can be purchased, and if they are to be obtained at moderate prices?—H. G. WHITE.

3501.—Rooting cuttings.—I have a large *Heliotropis* over the back of a vinery. I want to take many cuttings for bedding out this summer. Will someone kindly say the surest way to propagate these?—F. H.

3502.—Bulbs after flowering.—I have a quantity of bulbs now in flower in the garden. What shall I do with them when over? They are *Crocuses*, *Tulips*, *Hyacinths*, *Double Daffodils*, *Snowdrops*, *Winter Aconite* and *Sollas*.—LAUREL.

3503.—Jerusalem Artichokes.—What treatment is necessary for growing Jerusalem Artichokes in Norway? Are they propagated from roots, cuttings, or seed? Will a northern aspect, with rather heavy soil, agree with their cultivation?—NORWAY.

3504.—New Zealand Flax.—When is the best time to plant New Zealand Flax, best soil to grow it in, and how should it be treated? Will it grow from suckers (pulled off from the old stools) without any roots? Locality, Ireland.—EROLAND.

3505.—Improving a lawn.—Will someone advise what to do to improve a lawn? It is taken in from a field. At present it is a collection of weeds. I am using lawn sand to kill them. Would it be a good plan to water now with guano-water, diluted?—W. W.

3506.—Liquid-manure.—Will anyone kindly tell me at what rate I may safely use a mixture of pigeon-manure and soot as liquid-manure for such things as *Begonias*, *Narcissus*, *Lilies*, &c., in pots? Could I use it safely for *Maiden-hair Ferns*?—A. YORNBURGH.

3507.—White Lilies for market.—Would anyone kindly inform me how to grow for market White Lilies to have them in flower from the month of December to March? Full directions where to procure the cheapest bulbs, and how to proceed in growing will much oblige.—J. A.

3508.—Seedling Panicle.—I am growing some seedling Panicles, and I want to pick out the best and give names. What are the chief qualities to look out for? Could I expect exhibition blooms from this year's seedlings? What treatment do they require?—ALBERT STR.

3509.—A lean-to greenhouse.—I have a lean-to greenhouse against a south wall, with no heat. Can I too late to start? If not, I shall be so glad of hints as to best kinds, where to procure, and how to treat?—LAUREL.

3510.—Apricot trees against a south wall.—I have two Apricot-trees against a south wall. As yet they have never borne more than four fruit. The trees are large and healthy. They are now setting a quantity of fruit. Would it be wise to syringe with clean water?—G. C.

3511.—Plants for a trellis-work.—I am erecting a trellis-work across a border from north to south, to break the force of the east wind. Will anyone kindly tell me the names of a few suitable climbing plants (flowering) which would stand out permanently, and when to plant same?—Hon. Sec.

3512.—Plants for market.—Would anyone kindly tell me the best way to propagate and grow for market these plants: the India-rubber-plant (*Ficus elastica*), and *Aspidistra lurida*, and *Acacia Iopanthia*? Full directions will much oblige. Also, what is the best Maiden-hair Fern to grow for market, the best way to grow it, and how propagated, whether by seed or splitting up? Also, what are the best *Palmariums* (*Begonia*) for force for market, and what are the earliest flowering single *Zonitis* to flower?—J. S.

GARDEN WORK.

Conservatory.

We shall never have a busier time than the present. Many things require potting on, and must have attention without delay, or they will suffer. A group of Fuchsias just expanding their buds have a charmingly fresh look about them. Polargiums of the old-fashioned type are very effective, as are also the double and single Zonalis. Plants of the latter intended for blooming in winter should have the leaders pinched to make them bushy, and be potted on as more room is required. Large specimens will require a little training, but use as few stakes as possible, and have them small and not too conspicuous in colour. Bamboo canes are capital for training plants, and are cheap and lasting. Azaleas past their best clear of dead and faded blooms, and place in a warm, shady house to make wood. If perfectly clean they will do in a warm vinery; but if there is any suspicion of thrips, keep them out of the vinery. Cyclamens out of bloom move to a cold pit to complete and ripen growth. Young Cyclamens coming on will require warmth to encourage growth. It requires good culture to grow Cyclamens from seed to the blooming stage in one season. Most of the large growers sow their Cyclamen seeds almost as soon as ripe, and give the plants more time to grow from good strains of Cinerarias and Chinese Primulas. Old plants of both, if no longer effective, may be thrown out. Look closely after insects and check their approach by the use of insecticides. I am always averse to fumigation when the house is gay with flowers, as the petals droop so much when the house is heavily smoked. Heliotropes planted out to the border, either grown as bushes or trained up a wall or pillar, are very fragrant, and useful for cutting. Remove all Camellias, as the flowers are not required now. Double Wallflowers of good strains are nice things for the conservatory. I saw a group of these in a friend's conservatory a few days ago, and very sweet they were. The seeds should be sown next month and the seedlings pricked off in the beeder outside to be potted up in September, and kept in a cool pit to come on gently during winter. Hard-wooded plants, such as Heaths, Azaleas, and New Holland plants generally, may be potted off if they require it. Large specimens in good condition may go several years without a shift, especially if helped with a little stimulant during the growing and flowering seasons. See that clematis are properly thinned and trained; things soon get into a hopeless tangle if neglected. Give copious waterings to plants in bedders, such as Roses, &c.

Stove.

Growth is very rapid now, and the bright tints of leafage and blossom are well brought out under the very thin shade which it has been necessary to use during the late bright weather. Repot young plants into larger pots, but it is always advisable to leave a considerable number of healthy young plants in 5-inch pots for table decoration and general furnishing. It is always necessary, where much furnishing is done, to have young plants and seedlings should be raised in quantity every season. Five-inch pots filled with Lycopodiums, Panolom variegatum, Tradescantia vittata, and other plants of ornamental character in a small state, should be filled every spring, as for this purpose old plants are of no use. Tuberoses may be brought forth in pots large. It is always necessary to have the finest flowers obtained when the plants are potted on in heat; but Tuberoses will flower in cool greenhouses. They will come later, of course, but it is an advantage to spread the blooming time over the season as much as possible. Shift on young stock of Bonvardias, and continue to strike cuttings of Polanthes. Cuttings of the soft shoots of Gaedelia, Ixoras, &c., will root now in a brisk bottom-heat.

The Orchard-house.

The culture of fruit-trees in pots is very interesting, and its details are not difficult to master. One must not recommend it for the supply of a large family, but for the amateur who likes a succession of fruits, but not in large quantities, the pot system of culture will suit admirably. I have been told the Messrs. Rivers sell thousands of trees annually, and the purchasers are chiefly amateurs. Given a light, airy house, with just pipes enough to keep out frost, though there is no reason why Peaches in pots should not be forced. Where the orchard-house system is once started it is always desirable to have a warm-house as well as a cool one. In the warm-house, early Peaches, Figs, and Grapes may be grown; and in the late house, late Peaches, Figs, and Cherries. One of the advantages attached to the growing of fruit-trees in pots is this—the houses may be cleared of the trees in autumn, and filled with Chrysanthemums, and so now it is not uncommon for an amateur to grow some hundreds of these the difficulty of housing them would be solved if one combined the culture of fruit with Chrysanthemums. Tomatoes will do treated in the same way. Planted early in spring, the Tomatoes will be pretty well over by October, and the Chrysanthemums ready to be taken in.

Mushroom-beds in Cellars.

It is sometimes thought that manure piled in the basement of a house is not necessarily bad and unhealthy; but if any bad smell arises it will be due to neglect. Mix one-fourth of loamy soil with the manure, turn and blend it well, make up the beds in the form of edges on the floor, and cover with a little loose soil to absorb any ammonia which may arise during the process of fermentation. Spaw when the temperature is steady at 85 degs. or so. Add 1/2 inches of soil when the spaw is working freely, and cover with long old hay or old mats will do. Covering keeps the moisture in the beds. Beds in hearing must have moisture; liquid manure will be beneficial. Atmospheric moisture must be kept up by flooding paths and damping walls.

Cold Frames.

Where there is much bedding out temporary shelter may be improvised now with the aid of rough boards and stout canvas.

* In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than as here indicated with equally good results.

be moved to the temporary pits, and the frames be filled up again from the houses. Cucumber and Melon seeds should be sown now to have young plants ready to set out when the bedding plants are removed.

Window Gardening.

Stand Spiraea in pans of water, so they are so difficult to keep moist. When Azaleas have done flowering, pick off dead flowers and seeds, examine drainage, and see if the plants require repotting. If potting is required do it at once, and then keep the plants in the warm part of the room till the growth is made, and getting a bit firm. This will take till July, and the plants may then go into the open air.

Outdoor Garden.

The sunshine is splendid, but if it continues the water-pot must be used freely, especially to newly-planted trees and shrubs; even newly laid down lawns must be watered if the Grass is to get established quickly for lawn-tennis or cricket, a watering of newly-out Grass will be beneficial on newly-laid turf, and mulching of some kind is absolutely necessary to all newly-planted trees. If small seeds are required to germinate quickly the ground should be watered before sowing, and after the seeds are sown and covered with fine soil shade of some kind must be improvised. It is a very rare occurrence to recommend shade for outdoor crops in April, but the sunshine this year is quite phenomenal. If it is necessary to transplant anything during this dry weather the plants must be well watered before removal, and be potted in the house and then mulched, and, if possible, shaded, the syring being used freely over the foliage. If proper precautions are taken planting may be done morning and evening without injury to anything. Cut all dead wood out of specimen Hollies, and shorten back long shoots where symmetry is essential. The proper time to prune all flowering shrubs is immediately after flowering, and the best way to keep them in condition is to do a little pruning annually. In most cases all that is required is to wood out the long, straggling branches, or the young shoots to come up. When flowering shrubs are pruned in winter the blossom-buds are out off; but if pruned after flowering there will be a good bloom every year. The night has sometimes been cold and frosty, but I have never seen the Bleeding Heart (Dielytras spectabilis) in better condition than it is at the present moment. Not a single flowering-shoot has been injured. Dry frosts are not nearly so injurious as when a frost follows a storm of cold rain or sleet. This is a very good lawn plant for a sheltered rosette. I have seen it very effective at several gardens lately. Solomon's Seal also is another useful subject, especially for partially shaded borders. Wonderfully bright are the masses of Hyacinths in beds and borders, not a flower damaged by wind or storm. There should be no difficulty now in thoroughly eradicating all weeds. Use the hoe freely.

Fruit Garden.

Fruit prospects, at the time of writing, are still satisfactory. There is so much blossom on the Plum-trees that a severe thinning will be an advantage. Pear-trees also are white over with blossom, and here, again, a severe thinning will be beneficial in every way. So long as the weather continues dry the low temperatures at night will not do much harm, and Peaches on south walls will, on dry, porous soils, require watering. If frost appears on Peaches dust with Tobacco-powder immediately, and re-pot occasionally so long as a fly remains. Peaches under glass will require a good deal of attention now in tying down young wood. There is frequently too much of this wood laid in. Only sufficient young shoots to form the bearing wood of next year are required. In thinning the crop a good deal of resolution is necessary, especially if the fruit are for sale, as small, badly-grown Peaches are worthless. Liquid manure freely to Peaches where the stoning is completed, but discontinue it now as soon as the fruit begins to put on colour. If Peaches are watered up to the time they are fully ripe the flavour will generally be spoiled. Peaches should not be hurried during the stoning period, but afterwards a night temperature of 60 degs. may be employed to push on the fruit if required very early. Early-forced Vines in pots will now be colouring their fruit, and more ventilation will be required; in fact, the house should not be altogether closed, as most good cultivators leave it quite open at night. In giving stimulants to Vines strong liquids should not be used too freely. I would rather mix whatever artificial is used with the top-dressing than run any risk of spoiling the colour, which is too liberal use of strong liquids will sometimes do. I have still seen late Strawberries in pots packed away under a north wall, but these will be started now in a cool pit.

Vegetable Garden.

Small seeds at the time of writing want rain. In sowing seeds now place them rather deeper in the ground. This refers to all seeds, such as Peas, Beans, Turnips, Beet, &c. When the seeds germinate they will soon force their way through the soil; but small seeds will not germinate in dry, hot, dusty soil. They should be laid in a little deeper, so to come into a moist soil. Liquid manure is not so much good. They require some knowledge of French cookery to be thoroughly appreciated; but, in wishing to give them a trial on early raised plants from seeds sown in small pots, three seeds in a pot, to be reduced to one when the strongest can be selected. Place the pots in the greenhouse or pit. Later crops can be planted in trenches like Celery, the seeds being planted at intervals of a foot or so all along the drills. The plants are tied up and blanched when large enough, or, say, by September. Hay bands are usually wrapped round the plants to keep them together, and prevent the soil getting into the hearts when the plants are earthed. Continue to prick off Celery till enough plants and a margin beyond have been secured. Shade and moisture are essential for rapid, clean growth. Turnips in good soil may be sown in rather larger quantities. I don't know a better variety for sowing now than the Early Milan, which is a kind of Strap-leaved Stone. Later on there is nothing better than Red Globe, or the Red American Stone. Get Potato-planting finished in the backward districts. Plant Marrow Peas in succession. The seeds are planted in the soil to select from. Sow a row of dwarf French Beans on the north border. These are very often planted too thickly. Plant in single rows 2 1/2 feet to 3 feet apart, the Beans in a bush 6 inches apart.

Work in the Town Garden.

The weather is still extremely dry, and newly-planted trees, shrubs, and other plants must be kept well watered at the root, or they will probably perish. Under present conditions nothing can make much growth. What we want now is a nice warm rain, and with genial weather afterwards things all round would come on apace. Seeds of hardy annuals and others go in the ground very easily now, but they cannot germinate until rain comes, and in the mean time they may be kept. The only alternative is to water artificially, and perhaps this would be to water the beds, lines, or patches well first, then sow the seed, cover with a little fine sifted soil, and finally with manure, old seeds, or the like. This will greatly check evaporation, so well as wadding off night frosts, so germination will soon take place, and then the covering must be gradually removed. In this way Lettuces and other small seeds will come up in a few days, and during a dry period much the best plan is to sow where the plants can remain, and merely thin the seedlings out. Seeds of hardy biennials and perennials, including Carnations, Sweet Williams, Wallflowers, and many others should be sown this month. This may be done in a well-prepared bed of fine soil out-of-doors; but if only a few plants are wanted, or the seed is particularly choice, it is, perhaps, better and safer to do so in good-sized boxes and place them in a cold frame, pricking them outside when sufficiently strong and the weather becomes milder. Carnations are among the best of two sorts, and there are nothing like seedlings for producing quantities of flowers for cutting, and, so that a batch should be raised wherever possible. I usually sow in boxes in a frame or cool-house, and prick the plants off into nursery-beds when about 1 1/2 inches high, finally planting them out where they are to flower in October, or, if the place is very smoky, pot them singly, water in frames, and plant out in the spring. Almost all of the large genus of Campanulas, too, are capital plants for town gardens, and C. as well as C. carpatensis, C. pyramidalis, C. turbinata, and C. alba are really raised from seed, which should be sown now; but, being rather fine, it is best to do so in boxes under glass. Plants of C. pyramidalis alba form excellent ornaments for the conservatory, and those raised last year from seed should be transferred at once to 6-inch or 7-inch pots to flower. The varieties of C. perfoliata, but especially the double white, are grand for supplying cut flowers. These are increased by division, and should be potted in cool. Indoor plants, Ferns, Dracaenas, and other foliage plants ought to be given a little water delay. Keep them warm and close in a moist atmosphere for some time afterwards. Sow seeds of Chinese Primulas immediately. B. C. R.

THE COMING WEEK'S WORK

Extracts from a garden diary from April 22nd to April 29th.

Filled a frame covering a gentle hot-bed with cuttings of Alternanthera, Frestes, and Coluses. I still do a little carpet-bedding, and these bright-foliated plants are necessary for such work. Pricked off seedling Verbena, Stocks, Astors, Zinnias, Palox Drummondii, &c. Potted off spring-struck bedding plants in variety. Shall give them a start in heat, and afterwards harden off. Most of the autumn-stock plants have been placed in cold frames to harden. When thoroughly hardened they should be sown in boxes to get established to the beds. Commenced dibbling Peaches on walls, removing the forsights first. I always, when dibbling, have the Tobacco-powder distributor handy, and if a fly is seen a little powder is dusted there, and the same tree is visited again in three or four days, and more powder used. This is the best and cheapest way of clearing out insects. Planted out Lettuces and autumn Giant Cauliflower. I always plant a few of these in different aspects to insure succession. Cauliflowers in summer will do very well under a north wall if the soil is in good condition. Finished making new plantations of Violets, Marie Louise being largely grown for Ixora culture in winter. Shifted on Chrysanthemums. These are still in cold pits, and will not be placed outside altogether till May is somewhat advanced. Tied and dressed Cucumbers. By dressed is meant pinched off tendrils which are produced freely on vigorous plants. Every year's experience adds to the conviction I feel that crowding Cucumber plants under glass will not pay. Those plants set out 6 feet apart soon set, and when plenty of space is allowed, the plants seem to increase in vigour in proportion. Frequent top-dressings of old turf and manure are very beneficial. Maintain a night temperature of 65 degs. to 70 degs., with abundance of moisture in the atmosphere, and also keeping the roots moist. Cucumbers grow and thrive amazingly. A light shade is necessary now. Cucumbers do very well under a permanent shade of wire and whitening, or size and flour will do. I always cut the fruits as soon they are large enough to use. Cucumbers may be kept quite fresh with the ends in water in a cool place for a week, though I never keep them so long. Tied down and stopped Vines in a late house. Only one bunch is left on each lateral, and where the bunches are large, some of these will be cut away when thinning, as overcropping must be guarded against. Stopped Vines in three kept up in Tomato-houses. A little strength in the vines gives on a full compass of the situation, especially in regard to ventilation. Tomatoes in a house badly ventilated will come to grief before the summer is half over. Planted more Marrow Peas, and made a sowing of Turnips, Spinach, and Beet. The Spinach Beet is grown to a limited extent. It makes a useful substitute for Spinach, and it is sometimes used for stuffing salt-meats. Increased the plantation of Good King Henry or Mercury by removing the young offsets and planting in rows 16 inches apart, and a foot apart in the rows, matching with manure. Mulched plantations of Strawberries with long manure, and gave a sowing of house sewage. Shifted on Zoni, Pelargoniums intended for winter blooming. Rearranged conservatory. Thinned and trained creepers. Shifted a number of Campanula pyramidalis into 8-inch pots. These will make good specimens for late blooming.

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INDOOR PLANTS.

LILIES IN POTS.

I AM afraid that amateur gardeners who have the convenience of a small greenhouse do not grow Lilies so much as they ought to do, and especially the varieties of *L. speciosum*, or *lancifolium*, as it is commonly termed. It is easy to cultivate this type, and the return they make, if well managed, in every respect satisfactory. Of *L. speciosum* we have several varieties—viz., *album*, white; *punctatum*, white, flushed with rose, a somewhat scarce but very pleasant form; *roseum*, white, spotted with rose; and *rubrum*, white, heavily flushed and spotted with crimson. The two last can scarcely be termed distinct, as it appears to be the practice to mark all the dark-coloured varieties found among the roseums, and send them to this country under the name of *rubrum*. The variety *album* is a singularly chaste and beautiful Lily. *L. speciosum* Krætzeri (here figured), white, is a very fine form. I think that the white *lancifolium* and *L. longiflorum* are the two most charming Lilies an amateur can cultivate; the last for early blooming, the former for late blooming, with the fragrant *L. auratum* to come between them.

are helped by occasionally dusting the surface with Clay's Fertiliser. Some adopt the practice of placing the bulb in the first instance in the smallest possible pot, and then to shift into larger pots as the plants progress in size, and the flower-buds appear, and then no further shifts should be given.

THE soil I use is made up of some rich yellow fibry loam, leaf-mould, peat, Cocoa-nut fibre, sand, and some decomposed manure, taking care that the latter contains no insects likely to be injurious to the bulbs. The presence of grubs in the pots will often destroy a good bulb or two. My selection, it may be remarked, is a somewhat limited one. It is so, but it can be extended with advantage. Add *Lilium Harrisii* and the early-flowering varieties of *L. Thunbergianum*, of which there are a few. They are dwarf in habit, and produce extremely showy, handsome flowers on bold trusses. Other choice kinds can also be added as it is desired to extend the collection, but those named will be found ample to commence with. Notwithstanding so much has been written in praise of this culture of Lilies in pots, their cultivation in this form extends but slowly. If anyone wishes conclusive evidence on this point, let him take

pots in a brisk bottom-heat and keep moist, and close shaded from bright sun till rooted. Under suitable conditions every cutting will root in a few days. The softest cuttings will root the best.—E. H.

— Heliotrope cuttings root as freely as almost anything known to garden culture. I have propagated a large number during the early months of the present year, and they are now well-rooted plants. They should be taken off and cut into short lengths, and be planted in fine sandy soil. They will form roots in a week or so in a hot-bed, and when rooted they grow very rapidly in a little bottom-heat, and should be planted out in boxes almost as soon as rooted.—J. D. E.

3530.—Garden frames.—There is no difficulty in heating the pit, either with a flue or a small hot-water apparatus, and at the same time you may use stable-manure to furnish bottom-heat for Melons in the summer. The pit should be 2 feet 6 inches deep below the ground line, and the front wall should be 18 inches high from the same level. This will give you a depth of 3 feet for manure and soil, and leave a space of 12 inches along the front for a flow and return hot-water pipes. If 3-inch pipes are used they will give all the heat you want. Cinerarias and Calceolaries will do very well if they stand on a bed of soil during the winter, but "Geraniums" and Primulas require drier quarters. For this reason one half of the pit should be emptied of the manure and soil at the commencement of winter, and a temporary bench or platform should be erected 1 foot from the glass in front for them to stand upon. You will increase the value of the pit if you put in two or three ventilators in the front and back walls, the bottom of the openings being on a level with the ground, and if the ventilators are 4 inches deep and 18 inches long in the clear you will find them wonderfully useful in expelling damp in winter. A small "Independent" boiler fixed at one end of the pit is what you require. If you have the lights 3 feet wide instead of 4 feet you will find them more manageable and less liable to get out of repair than wider ones.—J. C. C.

3522.—A lean to greenhouse.—Yes, such a structure would be very suitable for Tomatoes. Strong, well-hardened plants may be put out at any time now. Keep them rather dry at first, and afterwards ventilate freely. Perfection is a fine large-fruited kind, of strong growth, and suitable for a lofty house; Blackwood Park is very prolific, and Field Gem is at once highly productive and of delicious flavour. Plant them out in a well-drained bed of sandy loam, or grow them in good-sized boxes.—B. C. R.

3495.—Culture of Justicia and Eupatorium.—These are not difficult to manage. The Justicia is a stove plant, and should be grown in a warm-house till end of June, and then moved out to a pit to ripen growth, to be placed in heat again end of September or beginning of October. It may have the leading shoots pinched once to induce a bushy habit, but should not be pinched after end of May. The Eupateriums are greenhouse plants, but they thrive and grow freely in a warm house or pit till some progress has been made. I have always found the planting-out system to suit these plants better than growing them all through the season in pots; they make more growth and flower better. May be planted out on a sunny border early in June, watered freely in dry weather, strong shoots pinched once or twice to induce a bushy habit, and potted carefully up in September—a firm potting. Stand under a north wall for a few days till the roots begin to work.—E. H.

3509.—A lean to greenhouse.—Yes, you ought to be able to do Chrysanthemums well in such a structure, the latest kinds, perhaps, excepted. Obtain young plants or strong-rooted cuttings at once, pot them into 3-inch pots, keeping them rather close for a week or two until established, when free ventilation must be the rule, and as soon as the latest kinds are getting full of roots shift them in 5-inch sizes (large 4's), and when "getting hold" a little, remove them to the open air, standing them on ashes in a sheltered but sunny position. About the middle of June shift them on into 8-inch or 9-inch pots to flower, still keeping outdoors, and house



Lilium speciosum var. *Krætzeri*.

Yet many amateurs are found complaining that they cannot grow these charming Lilies in a satisfactory manner; that they fail to grow, the

BULB ROTS, or they make a good growth and fail to flower, and they are killed in the winter. There are difficulties to be overcome, but they can be overcome by diligent attention and painstaking. My practice is to flower the Lilies in an ordinary greenhouse, and when they have done flowering leave them in the greenhouse to mature their growth; then cut away a portion of it in early autumn, and place the pots in a cold frame for the winter, covering them up with leaves and Cocoa-nut-fibre, when the frost set in. It is during the winter that many plants are killed for want of adequate protection through lack of house room; in some instances frequently, it is to be feared, from lack of accommodation. In spring, just as the growth commences, I carefully repot, taking care not to overdo this, and potting sufficiently deep, so that a little fresh soil could be added when the roots thrown out at the base of the flower-stalk commence to form. When they have made a growth of 6 inches, the plants are carried to the greenhouse, and encouraged to make a vigorous growth. This is a simple, but in my own case successful, routine of practice. I do not repeat but when the plants are fully established they

the many flower shows, in the schedules of which prizes are offered for Lilies in pots. How seldom does a respectable collection put in appearance at the season of the year when there should be no difficulty in having a group of four or six varieties! They are always objects of great interest at a flower show when presented in respectable form. R.

3499.—Eucharis bulbs.—It is not uncommon for Eucharis bulbs which have been starved to throw up flower-spikes before leaves are made, and the smallness of the flowers points their to improper treatment. This bulb, under the usual treatment, is an evergreen.—E. H.

3501.—Rooting cuttings.—There is no secret about rooting cuttings of Heliotrope. Fill a box with light sandy potting-mould, take off your cuttings close below a joint, selecting about 8 inches of the terminal shoots, strip off the lower leaves to the middle and insert firmly about 2 inches apart in rows, then thoroughly moisten the earth with a spout between the rows of cuttings and stand on a shelf near the light. At this season you ought to root the whole without difficulty.—A. G. BUTLER.

— The surest way of rooting cuttings of Heliotrope is to take off the soft ends of the shoots, trim off the bottom leaves, and divide the pots of light sandy soil, and plunge the

again from the middle to the end of September, according to your locality and the season. If bushy plants rather than large flowers are desired, nip out the point of each plant as soon as they begin to grow, in the small pots, and take up three to five stems instead of one, and if very dwarf plants are preferred, cut them down to 6 inches of stem at the end of May, giving the last shift as soon as the young shoots are an inch or two long. A few suitable kinds would be, for early flowering: Mme. C. Desgrange (white), G. Wernig (primrose), and Mrs. Hawkins (deep golden-yellow), M. G. Grunerwald (pink, very fine), Roi des Pivoines, and W. Holmea (crimson). To succeed these you may grow Elaine and Avalanche (pure-white), Sunflower and Mr. Gaman, or W. H. Lincoln (yellow), E. Molyneux and Cesare Coeta (crimson), Mrs. L. Jamieson and Bonis d'Or (bronz), Mme. de Sevin and Red Audiguer (rosy-purple). These are all Japanese kinds. If you have room for any more add Mrs. G. Rundle (white), G. Glenny (primrose), Mrs. Dixon (golden), Lady Dorothy (bronz-apricot), and Venus (lilac-pink), all incurved; also Chev. Donage and Elsie (golden-yellow), Cullingfordi (scarlet), Christine (peach), and King of Crimsons, or Julie Lagrèver (crimson). It will be a great advantage if you can fix a blind of some thick, warm material, such as Frigi Domo, on a roller to run down over the glass on frosty nights in the autumn.—B. C. R.

3512.—Plants for market.—*Ficus elastica* is propagated by means of cuttings, *Aspidistra lurida* by division, and *Acacia lophantha* is raised from seed. The first requires plenty of heat and moisture and a light, peaty loam to grow in; the *Aspidistra* will grow almost anyhow, but faster in a moderate warmth, of course, and *Acacia lophantha* needs warm greenhouse treatment. *Adiantum cuneatum* is grown almost exclusively for cutting; it may be increased by either division or seeds, but seedlings make the best plants. The best Regal Pelargoniums are Triomphe de St. Mandé, Ed. Perkins, Maid of Kent, and Mme. Thibaut; but the best kinds for forcing are found among the French varieties. The old Veauvine and West Brighton Oem (scarlet), and H. Jacoby (crimson) flower earlier and more freely than most of the larger kinds.—B. C. R.

3520.—Small greenhouses.—Cucumbers alone will not pay for fuel and attention in winter; but the houses may be used for forcing flowers, such as Lily of the Valley, &c., and if carried out with judgment there is usually a profit left. French Beans and Mushrooms may be combined with the Cucumbers, if there is room.—E. H.

—If you have a good market, Cucumbers may fairly well during winter—that is, if properly grown, so as to ensure a good crop. In and near London they are most profitable during March, April, and May, or in "the season." To do Cucumbers justice, however, it ought to have the houses to themselves, or nearly so, and the only other plants that can be grown under glass in this case to any advantage are Ferns, Palm, and *Lycopodium*.—B. C. R.

3453.—Hot-bed making.—If for a three-light frame, get together about six cartloads of good stable-manure which has been once turned over, mix with them one load of undecayed leaves, or the leaves may be put on in layers through the bed, about 1 foot thick when loose. Tramp the bed only moderately; this is most important. Set your frame on top of heap with the lights on, and in about ten days to a fortnight, riddle some nice loamy soil, and place in small hillscks—one for every Melon-plant—the light would take four comfortably. Plant out your Melon-plants when fit on the top of these hillscks, and from time to time (as they require it, add more soil of good quality.

TREES AND SHRUBS.

CHOICE FLOWERING TREES AND SHRUBS.

CHINESE AKEBIA.

This is an elegant, twining evergreen shrub (see illustration) from China, usually grown in greenhouses, but hardy enough for the open air in the southern and west-coast counties of this country. It is a charming plant for covering a



Flowering-branch of Chinese Akebia (*A. quinata*).

trellis, pergola, wall buttress, or any place where, in case of very cold winters, it can have protection, if needed. In some mild localities it does not need this even, but rambles over shrubs like a Traveller's Joy. It is best to let it run over an Evergreen, as then it is better protected against cold winds, which injure its flowers. It has long, slender shoots, foliage with five leaflets, and its flowers are of two kinds—large and small, produced in drooping spikes. They are of a deep claret-purple and fragrant, produced in February in greenhouses, but later in the open air. It is propagated by cuttings and it grows to a height of about 12 feet. G.

3523.—Layering *Rhododendrons*.—You may layer these at any time, but the present is perhaps as suitable as any in the whole year. You have only to bring down the young branches on to the ground and cover them with 6 inches of soil, and they will be sufficiently rooted in two years to plant out where they are to remain. Only the common ponticum variety will do any good under Beech-trees, and not even these unless the soil is suitable, and deep as well. I certainly should not think of making a soil in such a position if the staple is not of a promising character.—J. C. C.

3482.—A high hedge.—If the hedge is to form the outer or boundary fence, I think Quick or Privet, or a mixture of the two, will be as suitable as anything that will grow so quickly. It will be necessary to cut the plants

in a double row, about 9 inches or a foot apart, and let the hedge have plenty of room if it is not to be thin at the bottom when it has reached the height of 8 feet or 10 feet. It will, after a few years, require careful clipping, and must be kept free from weeds from the first. Holly would make a handsome hedge, but grows slowly. Of Yew it is safe to put in larger plants, but it is too poisonous to cattle to be desirable for an outer fence. Laurel, when clipped into a stiff form, is ugly, and is liable to die during hard frost. Of the merits of the *Myrobella Plum* I cannot speak.—E. E.

Fyrus japonica.—There are several varieties of this fine spreading shrub, but the most beautiful is *P. cardinalis*, which is in the nursery of Mr. Anthony Waterer, at Knapp-hill. The common type is peculiar in many gardens, but the variety *cardinalis* has much larger, better shaped, and most brilliant flowers, intense crimson, conspicuously bright and showy. It blooms with great freedom, and is a variety thoroughly worth growing in every garden where space can be found for a *Fyrus*. Many of the forms of *P. japonica* are too pale in colour to be effective; they are washed out, so to speak. *P. Manley* is a good kind, the branches quite wreathed with the orange-scarlet tinted flowers, which are set closely on the slender branches. It is not necessary to grow *P. japonica* against a wall. It makes a lovely bush, a mass of scarlet flowers in April.—C. T.

Trimming Ivy.—Now is the time to clip or trim Ivy on walls or buildings, as it will soon be making its growth, and instead of being bare and shabby for weeks, as would have been the case if the work had been carried out before, the surface will quickly become re-clothed with new leaves. If the walls are low and can be got at easily, I find that the best implement is a scythe, which soon shaves the old foliage off close, and a sharp hook is also very useful. In places the shears must be used where a blow cannot be struck, as in angles and corners or under eaves. If Ivy is looked after and thus treated annually, it presents a fresh appearance all the year through and is kept close to the walls, instead of jutting irregularly out or becoming detached from its surface. In cases where Ivy has been neglected it may with safety be at once cut in, and if there is any rubbish amongst it, this may be got rid of by giving it a good brush over with a Birch broom, driving or using it upwards so as not to break the Ivy away from its support.—D.

3502.—Bulbs after flowering.—There are very often left in the beds altogether, especially Crocuses, Snowdrops, and Scillas. Aconites do better on some shady shelving bank, when they can be left undisturbed till they spread out into a broad mass. They are then really effective. If the beds are required for summer flowers, Hyacinths, Tulips, and Double Daffodils should be lifted with as much earth as will cling to them, and be laid in some where till the bulbs are ripe, and then sorted and placed in drawers till September or October, when they can be again planted. I think Daffodils should be planted early to give them a chance of flowering well.—E. H.

—All the spring-flowering bulbs, such as Crocuses, Tulips, Hyacinths, Narcissus, Snowdrops, Winter Aconites, &c., should be left where they are until the leaves decay, and if it is intended to plant them somewhere else that is the best time to lift them, and they may either be planted at once or kept in a dry place until the time that they show signs of starting into growth. It is better not to replant them annually, except the Hyacinths and Tulips, which may with advantage be taken out of the ground annually, and be replanted again in September. All the others may be left in the ground for a number of years.—J. D. E.

3453.—Moss on a lawn.—Without any delay tear up the Moss with a rake, or if your lawn is large enough use a small horse-harrow. At first it looks altogether destroyed, but do not despair. Then spread a compost of lime and good soil (lime, one to four of earth) about six or seven cartloads to the acre; then sow renovating G. a-seeds, one and a half bushels to the acre, roll well, and keep down (worn areas—

CHRYSANTHEMUMS,
CHRYSANTHEMUMS AGAINST A SOUTH WALL.

3515.—The best kinds for growing against a wall outside are those of the Reflexed section, which, owing to the natural imbricated form of their florets, do not retain water from rains or heavy dews amongst the petals like those of the incurved section. As long as the blooms can be kept tolerably dry in the centre, there is not so much danger of their suffering from frost and damp as when they are constantly wet. The large-headed kinds of Incurved, such as Queen of England, for example, are the least desirable. Pompona and single-flowered varieties are deserving of attention, owing to the freedom in which their flowers are produced. Below I give a list of suitable sorts, attaching the colour of each as a guide in planting. The best kind of plants are those that flowered in pots last season. These are better than young ones from cuttings of the current year, owing to the extra number of shoots produced at the base, and thus are better furnished with branches to begin with. If these old roots are not available, procure at once some plants struck early during the present year; top the leading shoot to induce side branches to form near the base to furnish the wall right from the bottom. If old plants are available, remove part of the soil from the roots and plant them close to the wall at a distance of 3 feet apart. If the soil is fairly good, add some manure. Between each two large-flowered varietal plant one Pompona or single kind, which will cover the bottom part of the wall. Tread the soil firmly about the plants, and when they are growing freely supply them liberally with water. If the plants were of good size the previous year they will start into growth with many shoots. Select six of the strongest on each plant, removing all the others except from the Pomponas, which may have eight growths. When the branches are long enough, spread them out thinly and secure them to the wall either with a wire run along the front of the shoots or by the aid of shreds and nails. Toward the end of May the shoots will each make its first natural break; this is caused by the formation of a flower-bud at the point of each. Select two of the strongest shoots on each original stem, or more if space will allow. It is not a good plan to overcrowd them. After a hot day thoroughly syringe the plants; this greatly assists in keeping the foliage clean and in a healthy condition. Should the weather be hot and dry during the summer, a mulching of manure, 2 inches thick, spread over the surface 1 foot away from the stem of the plant will not only be a saving in labour in watering, but will keep the roots cool and moist, which is all in favour of a successful growth. If some temporary protection can be provided, such as banyan tiffany in front of the plants nightly when the blooms commence to unfold their florets, the frost will not injure the flowers nearly so much, and the blossoming period will be prolonged. In some seasons it is possible to have really good and fresh bloom as late as December 10th. Reflexed Japanese: Avalanche (white), Dr. Maury (white, tinted with rose), Edwin Molyneux (crimson and gold), Etoile de Lyon (deep lilac-rose), Fair Maid of Guernsey (white), Sunflower (golden-yellow), Maiden's Blush (blush), Mme. de Sevin (rosy-amaranth), Peter the Great (tomato-yellow), Val d'Andorre (red, shaded orange), Source d'Or (orange and gold), gloriosum (lilac-yellow, fluted florets). Reflexed: Amy Furse (lilac-blush), Chevalier Domago (bright-gold), Christine (peach), Mrs. Horril (lemon-yellow), Golden Christine (golden-hued), Cullingfordi (scarlet-crimson), Mrs. Forsythe (creamy-white), and Phideas (rosy-blush). Pompons: Black Douglas (dark maroon-red), President (deep rosy-carmine), White Trevena (white), Rosinante (silvery-blush), Fanny (maroon-red), Lizzy Holmes (bronze), St. Michael (yellow). Single flowered varieties: Mrs. Langtry (pale-pink), Jane (white), Mrs. Le Mout (amaranth), Mrs. J. Willa (white, suffused pink), OriGanne (soft reddish-brown), White Perfection (white), Florence (white, shaded rose). E. M.

time of year they will not do any harm. If the ants' nests are not too near the roots of any trees or plants the best way to destroy them is to open the nests and pour in boiling water; if they are not situated where this plan can be carried out they can be trapped, but this is very slow work. Pieces of string, lath, or anything else which is more convenient should be soaked in treacle and placed in their runs, and when covered with insects dipped in boiling water. A flower-pot turned upside down over the nest, with the hole at the bottom closed, and lightly fitted with Raspberry-leaves, has been found very useful, the ants removing into it if the ground round the nest be kept wet. Some persons poison the ants with treacle and arsenic; but poison is always more or less dangerous.—G. S. S.

FERNS.

MAIDEN-HAIR FERNS FOR CUTTING.

The idea seems to have crept into the minds of nearly everyone growing flowers for room decoration that some Maiden-hair Fern is necessary for mixing with them. I, too, love the greenery when mixed with flowers, but I do object to the use of Fern with some things. A Rose, for instance, looks far better when backed by its own green leaves. A Carnation or Clove looks certainly best arranged with its own leaves. But Fern fronds we must have, and the fronds of many Adiantums are peculiarly well adapted for this purpose. Our market growers have decided that *A. cuneatum* is the variety they will grow and will supply no other, so that this species has become the only accredited one worth attention for this purpose. In these notes I will describe a few kinds which can be grown for cutting, and which will at the same time give a greater variety and add a greater interest to the appearance of the house in which they are grown. I would advise my readers to grow a variety of taller-growing kinds; their fronds will be found ever welcome for cutting. These plants are all very easily grown. One of the chief items of success is good drainage, for without this no plant can long remain a pleasure to anyone; good soil, careful potting, and a plentiful supply of water to the roots, with an

shoulder sprays and wreaths, and they last a long time without fading. It will thrive well in the cool-house fernery, being a native of New Zealand. *A. cuneatum*: In spite of what I have said of this kind, I must on no account omit it from the most desirable kinds. The rich bright green of its fronds and the jet-black stripes render it very charming. Nothing can excel its beautiful fronds when used for bouquets and button-hole flowers, and that, too, in the winter months. It thrives best in moderate warmth. It is widely spread throughout Brazil. *A. excisum* and its variety are both very handsome plants, partaking somewhat of the characters of *A. cuneatum* and *A. concinnum*. The latter plant, however, is excluded from this enumeration. The fronds of *A. excisum* are three or four times divided and from a foot to 18 inches in length. The variety makes beautiful tassels some 3 inches long or more, and the fronds are very beautiful when cut for mixing with flowers for the table. It requires stove heat, and comes from Chill. *A. formosum*, a very handsome kind, as its name implies, grows to some 3 feet in height, but when the fronds are about half that size they are exceedingly useful for mixing with cut flowers, where their bright green pinnules and jet-black stripes are very charming. I cannot recommend this one for any other purpose. It is a cool-house kind from Australia and New Zealand.

A. gracillimum.—This is a singularly beautiful Fern, as will be seen by the illustration. It is, I think, a garden variety of *A. cuneatum*. Indeed, when I obtained the first batch of seedlings of it I was laughed at for continuing to prick them off. Perhaps I should not have been so assiduous had I not seen a seedling on the wall which was putting on the narrow beautiful fronds. It comes true from seed, and as a pot specimen nothing can be more beautiful; the fronds also are exquisite, covering the flowers with which they are arranged like a delicate green veil. The fronds should, however, be cut at the last moment, or be cut and submerged for twenty-four hours before using on account of being so delicate. The plant originated in Mr. B. S. Williams' nursery, and likes stove heat. *A. glaucophyllum* is an elegant cool-house kind from Mexico. It also does



Adiantum gracillimum.

occasional light sprinkling with the syringe, are necessary. The following kinds will be found very interesting, as they will produce a pleasing appearance in the house and will afford a variety: *A. affine* is a pretty species, producing its fronds from a creeping rhizome. The fronds are each about a foot or 18 inches high when well grown. They are some two or three times divided and rich deep-green in colour. These fronds are valuable for mixing with flowers arranged in a good-sized vase; black ones are also invaluable for mixing with flowers for

use in the warmer house during the growing season. It is a small-growing plant with fronds several times divided, and the pinnules are somewhat leathery in texture, dark green on the upper side, glaucous beneath. *A. Ghiesbreghtii* is a bold, handsome plant, erroneously named *A. scutum* when it first appeared in our collections. This was at a time when Ferns had a good hold upon the public. The fronds grow some 2 feet in length, and the pinnules are numerous, large, and of a pale green in colour. It is invaluable for cutting for table

3775.—Plague of ants.—As the ants are now swarming on the Peach-trees, I expect that they are attacked by scale insects. At this

decoration. A stove Fern from the West Indies. *A. tenerum*: The fronds of this plant as well as those of the last-named form fine objects for setting up with cut flowers in a vase, and for this purpose should be submerged in water for a night or more before they are used. The young pinnales are soft crimson and very elegant. Widely distributed in tropical America. *A. trapeziforme*: A fine, hold-growing plant, one with large pinnales, and producing fronds some 2 feet and 3 feet high. This is quite distinct from any other species named here, and it may be cut and used for mixing with Grasses and flowers in the winter months. There are several others somewhat like this which may be similarly used. *A. macrophyllum*: An erect-growing plant possessed of much beauty. The fronds, which vary from 10 inches to 20 inches high, are pinnate, the pinnae being red or crimson when young, changing with age to pale-green, and becoming of good thick substance. A warm-house plant from Jamaica and other West Indian Islands. *A. pedatum*: I cannot allow this enumeration to pass without including in it the most beautiful species of Maiden-hair Fern that is grown, although despised by many because it is hardy. The plant is deciduous, and, therefore, not so useful as many of the kinds. North America. *A. peruvianum*: A hold-growing plant, making firm and hard pinnae with jet black stipes. This plant has now been introduced long enough to admit of its being grown for cutting. It is a warm-house plant from Peru. *A. Williamsi*: This makes fronds some 2 feet or more long. The pinnae, smaller than those of *A. tenerum*, are bright green, the stem being slightly clothed with farinose powder at the base. It is a cool-house plant. J.

ORCHIDS.

ONCIDIUM CONCOLOR.

This is an elegant plant, possessing one of the peculiarities of many spring-blooming plants in its colour, which is of a bright rich-yellow throughout, and its flowers last a very long time without distressing the plant, if they are not allowed to become wetted by the syringe. Another reason why this plant should be grown by all Orchid lovers is the fact that it thrives well in a cool Orchid-house. This plant first flowered in English gardens some fifty-three years ago, having been sent over here from Rio Janeiro, and upon this account it was kept in a warm-house, and in those days we had not become aware that many Orchids would grow best with very cool treatment, and the consequence was that the plants did not thrive, and it was very scarce in our collections for many years; but now it is common and to be easily obtained, and I think for this we are indebted in the first place to the Messrs. Veitch and Sons, of Chelsea. *O. concolor* is a dwarf growing plant, having small ovate bulbs, which are slightly furrowed, and they bear a pair of leaves each, which are strap-shaped, of good substance, and rich-green; the spike proceeds from the base of the new growth; when about half formed, it is drooping from the weight of its many flowers—sometimes as many as fifteen and eighteen flowers—each measuring fully 2 inches in length, composing one raceme, but upon others flowers in much less numbers are borne. Indeed, I saw a short time ago a few racemes bearing only five flowers, and these were erect, so I do think I am correct in saying the racemes become pendent from their own weight. These flowers are of a rich, bright yellow, the lip being very large, and when freely produced they produce a charming effect. This plant grows best, and it shows best, when in bloom, suspended from the roof in a small basket. Earthenware or Teak-wood will suit it, but I prefer the former. They should be well drained, and the soil composed of peat-fibre and chopped Sphagnum Moss. It likes a plentiful supply of water from the syringe and to its roots when growing, and in the winter just sufficient should be given it to keep it moist, and, of course, the syringe can then be laid by. I like to keep this plant in the cool-house with the *Odontoglossum* during the summer months. The species being a native of the Organ Mountains, a more natural temperature can be accorded it, but, if the growths are made up, it may be wintered in the

Cattleya-house. This does not mean warmer treatment, for both houses are allowed to fall much lower at this season, and this *Oncidium* will not withstand so great a fall as the *Odontoglossum* from the mountains of New Grenada and Mexico. MATT. BRAMBLE.

ODONTOGLOSSUM CITROSUM.

I AM in receipt of several enquiries from readers asking why they cannot flower this plant? And I also have received a spike of flower of a very nice variety from "E. Bishop," saying it is the first one that has opened out of seven upon his three plants. He says his plants have been grown entirely from my instructions, so that I fear my other enquirers either have not grown the plants strong enough to flower, or they have not rested them dry enough, or they have not been kept sufficiently cool. I think upon previous occasions I have remarked that this species grows naturally upon Oak-trees, at a great deal lower elevation than any other *Odontoglossum* found in Mexico, and that it likes more sun than any species of the same genus, and it was from the fact of not knowing this that our first want of success in flowering it arose, I have no doubt, for a plant bearing a single spike, and that tied up to a stick, was looked upon in my young days as a great achievement. I have, however, now frequently observed grand plants with five pendent spikes reaching to 2 feet and 3 feet in length, bearing many of their sweet-scented flowers, and I have seen nearly a hundred spikes hanging all at one time, which presented a sight that was fairly captivating. Roez himself writes of it: "Great was my surprise to see the trees clothed with a profusion of this Orchid; the stoutest branches of the Oaks were loaded with them, their pendulous spikes being a yard long, and each one bearing as many as thirty expanded blossoms." And now "E. B." wants to know how to grow it? The plant should be placed in hanging-baskets, for in this manner it can be given just the treatment it requires by hanging it in the sunshine; and then, again, when the plants flower the pendulous spikes can take their natural habit, and I have observed when hanging over water they appear to grow longest. These baskets should be well drained, and the soil should be of good brown fibrous peat and chopped Sphagnum Moss. This should be pressed down firmly, but carefully avoid giving the plants too great a quantity. During the summer, its growing season, the plants should be hung up in the stove or the Cattleya-house, and during suitable occasions an abundance of fresh air is admitted, and shading should only be resorted to the middle of the day. They like a liberal supply of water during their growing season, but in resting the plants should be dried, and then be removed to a cool-house where the atmosphere is dry, and the plants should not have a drop more water than enough to keep the bulbs from shrivelling before the flower-spikes begin to show themselves in the new growth, when they may have a little, which will soon cause the spikes to grow; and when this has begun, the plants may be again taken into warmer quarters, and be given a greater amount of water. The flowers usually appear in the month of May. MATT. BRAMBLE.

ANORCUM SANDERIANUM.

SOME flowers of this Orchid come for a name from "Charles Beaton," and he asks what I know of it and its cultivation? Now there appears to be some confusion about this plant more or less; but as "C. B." says his plants of this kind were gathered in the Comore Islands, I do not hesitate about saying they are the same plant which was named *Sanderianum* by Professor Reichenbach in 1858; but I think a plant from Madagascar I have seen with narrower leaves and shorter spikes of bloom, under the name of *A. medestum*, approaches this species very closely. However, this, you may take for granted, is the plant sent me for a name, but if the two Orchids are identical I cannot say. The *Angraecum* in question I once saw with a spike about 2 yards long; no flowers had then developed upon it, and I cannot say if any did, for I have never seen the plant since that time, which was two years ago, nor have heard anything of my friend since. Of course, this was a

very unusual length for a spike of the plant, but I have seen it with very long spikes laden with its pure-white, long-spurred flowers, which are very handsome, and last long in perfection. This plant thrives well upon a block of wood, but I prefer small, shallow, earthenware pots, well-drained, using fresh and growing Sphagnum Moss alone about its roots. It requires a good heat all the year round, say a temperature that does not fall below 63 degs. or 65 degs., and moisture must be maintained (though in a less degree in winter) all the year round. The usual time for this plant to flower is in April and May. I would recommend some few other species of *Angraecum* to my readers having heat enough, but unfortunately there is not much variety in the different kinds, for all or nearly all of them have flowers of a more or less pure white, but there is the famous *A. sesquipedale* with its peculiar metallic-green leaves, and its so-called foot and a half flowers, although I do not remember seeing a flower which was true to its name. Then there are the singular free-flowering and beautiful *A. Leonis*, which has equitant leaves, and the charming little "Fishbone" *Angraecum*, *A. pertusum*, the elegant little plant first seen alive in this country with Messrs. Veitch, and recently referred to in *GARDENING*, the fine West African *A. Chailleanum*, and many others, to say nothing of the great *A. eburneum*, the giant of its race; but the flowers of all these are white, and therefore are not to be tolerated generally in an amateur's small collection of Orchids. MATT. BRAMBLE.

MILTONIA CUNEATA.

This is a truly beautiful species, and some flowers of an excellent variety of it came to hand for a name from "James Wood," I was glad to see, for it is not often that so unusual a species comes from an amateur. I say unusual somewhat advisedly, for I remember the time when this was a very rare Orchid; but it has been more plentiful during the last few years. There does not appear to be much record of the introduction of this plant, but there are records of its being in cultivation nearly fifty years ago, and it was said to come from Brazil. This was strikingly brought home to me a few years ago, for upon visiting a gentleman recently returned from Rio, he said: "I have some Orchids in the garden, which I shall be glad if you will name for me," and upon my looking them over I saw great quantities of this plant. Upon questioning him as to where they grew, he said the plants were all gathered by himself on his Coffee plantation near Rio, so that my readers having this *Miltonia* may be sure that it will succeed best in the warmth of the Cattleya-house. This plant was named *Oncidium speciosum* by Reichenbach, and, indeed, the aspect of the plant is similar to that of an *Oncidium*, and its flowers, which are borne upon an erect spike, remind one somewhat in shape of those of *O. tigrinum*. The sepals and petals are oblong-lanceolate, nearly equal. In the flower before me they are nearly wholly of a dark chocolate-brown, tipped with pale yellow, and having at intervals an occasional streak of the same colour, reusing through the brown, lip large and flat, clawed at the base, pure white, having two raised fleshy plates on its base. It is very handsome, lasting a long time in perfection. The usual period of flowering is rather earlier than the present time, and I have seen it in bloom early in the month of February, but it is always welcome. I have found this species very easily grown, and flowering so early in the season gives one an opportunity of giving it reasonable shade so as to maintain a good colour without hindering its blooming; but I like to expose it to the sun in the autumn more freely in order to ripen its growth, and thus ensure its flowers at the end of the winter or the beginning of spring. It thrives well in a pot, drained thoroughly, and potted in a mixture of good brown fibrous peat and fresh Sphagnum Moss. Water freely when growing, and maintain a nice moist atmosphere, but when growth is past it should be very carefully watered, but do not let it suffer from drought. I have frequently heard it called a difficult plant to bring through the winter, and from the very fact of its being kept in too dry a state I imagine, having found that those who so completely usually subject their Orchids to a drier winter-treatment than I approve of.

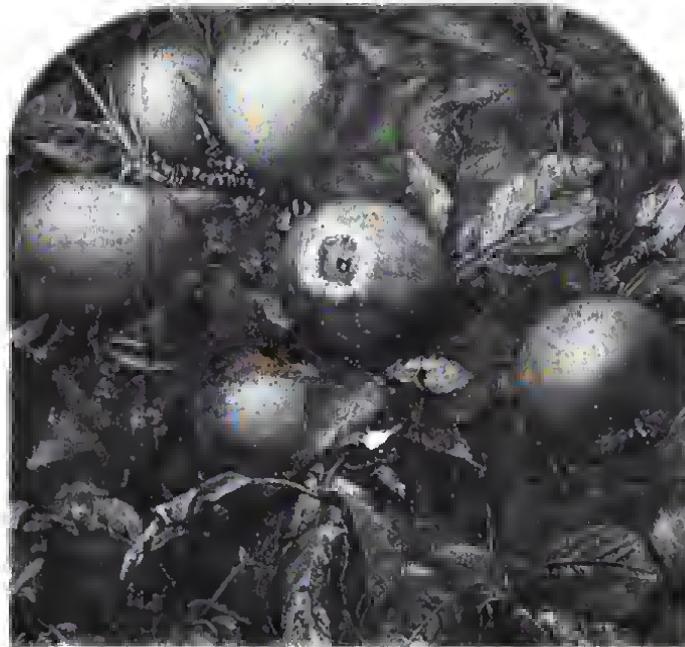
MATT. BRAMBLE.

FRUIT.

APPLE COX'S ORANGE PIPPIN.

ON the great merits of this Apple there is little need to enlarge, for the simple reason that it is one of the most popular varieties in cultivation—in fact, it may be said to be the best praised dessert variety that exists. What also is most satisfactory, it fully deserves all that has ever been written in its favour, and if all we hear and read of it is true, the time is not far distant when this excellent Apple will be plentiful in the markets throughout the late autumn and winter months. Partial failures will happen with this as well as any other variety of Apple, but a complete failure I have never known—at any rate, where one or two trees are not solely depended upon. I have five good sized trees growing in different parts of the garden, thin crops being produced by the majority. All flowered well in spots, too, of bearing freely during the two preceding seasons, but the buds are not sufficiently self-protecting, and the fructifying parts of the flowers suffered from frost accordingly. That is the one weakness of Cox's Orange Pippin, but, luckily, it is not

often that the trees are subjected to such severe tests as they were this season. According to my experience, particularly good pyramids are not easily grown, the habit of the tree being somewhat straggling, and I hold that the most profitable trees are those on the Crab stock, and grown either as large bushes or half-standards. Very good trees can quickly be had by simply cutting out the leader of a pyramid as received from a nursery, the side branches being shortly notched back at each winter pruning till enough shoots are obtained to make a well-furnished tree, after which thinning out and foreshortening are all the pruning necessary or advisable. In some cases it is needful to stake up some of the principal branches, or otherwise the heavy crops they produce will weigh them down to the ground. The illustration accompanying these notes was from a photograph of part of a branch of a freely grown tree framed out in the manner just described, and the fruit on such branches, being well exposed, colours beautifully. This plan of training suits my purpose better than any other, but it does not follow that it is the best under all conditions. On the contrary, the variety succeeds admirably on dwarfing stocks, and either grown as a bush, cordon, or horizontally trained, and on a variety of soils. Very good fruit is sometimes obtained from orchard trees, but much the best samples are gathered from those more highly cultivated, and which also are less liable to be disfigured by gales of wind. Not only is Cox's Orange Pippin of excellent quality, or second to none in this respect, its appearance also being greatly in its favour, but it possesses the great merit of remaining in season from November to March inclusive. It is the favourite exhibition variety, especially for showing in single classes, none but the very best samples of Ribston Pippin standing any chance against it. The variety was raised by Mr. Cox at Colnbrook Lawn, Slough, Bucks, somewhere about the year 1830, and is said to owe its parentage to Ribston Pippin, though it bears little or no resemblance to that good old Apple. W.



OUR READERS' ILLUSTRATIONS: Fruiting-branch of Apple "Cox's Orange Pippin" Engraved from a photograph sent by Mr. W. Cooper jun'or, Marlton, Froms, Somersetshire.

make no progress whatever in ten days' time the best plan would be to root the Vines out and plant afresh, remaking the border. The present is a good time to plant new canes already growing in pots; even these struck from eyes this year will make good canes before the end of summer if the house is kept warm, avoiding direct draughts of air blowing over the Vines. Syringe the foliage twice daily during bright weather, and supply the roots liberally with water. Train the Vines up with one single stem, plant wholly in the inside border, making up but a piece yearly, say 4 feet wide to begin with, adding about the same each year. If the soil is 2 feet 6 inches deep, that will be ample, underneath this place 6 inches of drainage, laid to a fall, so as to obtain a free outlet for surplus water.—S. P.

— It is most unwise to dress Vines with paraffin. They will probably shoot up from the bottom. The strongest shoot can be left, and, if all is well, they will fruit next year.—E. H.

3510.—**Apricot trees against a south wall.**—It is not wise to regularly syringe the trees for another month, especially as the weather is still cold at night. If the leaves are infested with insect pests, these should be got

— Against a south wall is the best position for Apricot-trees, and they may bear well this season if the frost did not touch the blossoms. It would be unwise to syringe them at this time of the year; but the truth is that at no time do Apricot-trees need syringing. The object of syringing Peach, Nectarine, Cherry, and Plum-trees is to keep the leaves free from insect pests and parasites, such as the various species of the aphid tribe, red-spider, &c.; but the Apricot is not likely to be attacked by them, and if syringing is resorted to at all it would be to wash the dust off the leaves during dry, hot weather in summer.—J. D. E.

— It will be better not to syringe Apricot-trees till the weather gets warmer. When the east wind has departed, and the nights are warmer, a wash with the syringe or engine will do good.—E. H.

3520.—**Black Hamburg Vine.**—Are you sure yet that there are no signs of bunches on the side-shoots? It is rather early to determine this in an unheated house, where the growth must necessarily be late. In some cases the bunches do not show until the formation of the fourth leaf on the side-shoots. There is no fixed rule for this, although the bunches do, as a rule, show at the second or third leaf. I should advise "H." to allow the side-growth to extend say five or six leaves on each side of the main rod, if space admits for a full development of so many shoots, then pinch out the point of each. Lateral growths will then push from the joints below; these ought to be pinched in at the first leaf, and the sub-laterals at one leaf also. Allow the leader to grow to the full length of the roof, then pinch out the point, and manipulate the lateral and sub-lateral growths in the same way as advised for the side-shoots. If fruit does not show on the Vine this year, syringe the foliage every day about 4 p.m. with tepid water during fine weather, which encourages freedom of growth, and assists to keep insect pests in check. Whether the roots in an outside border will require much water or not depends so much upon the weather and the state of the border. If the soil is heavy and the drainage not good but little will be required. If the soil is opposite in character and the drainage good, and the weather be long dry after the first week in May, an occasional soaking with tepid water will be of service, as also will the mulching with horse-mannure. If this has been laid on all

the winter, it will be wise to throw it on one side for a week to allow the sun to warm the soil.—S. P.

— This appears to be a case of excessive vigour in the Vine, the result of which is that the rods were not properly ripened. You appear to have pruned the rods right enough, but I am afraid you treat the roots too kindly. If the border was well made the Vine would not require any further manuring until it is well cropped with Orapes. You had led the two rods extend up to the top of the house and then stop them. The laterals on each side may be allowed to grow about 18 inches on each side, and then be regularly pinched as young growth is made.—J. C. G.

3517.—**"Spot" on Gooseberry-trees.**—Your trees are affected with what gardeners call the "red-rust." It is a kind of a fungoid growth, consequent on the plants growing in a poor soil. Your only remedy is to get the trees into a more vigorous condition by well manuring the soil about the roots of the trees. If available, well soak the soil with manure-water at once, and then fork in some rotten manure, and lay a thick mulch of the same material on the surface as far away from the stems as you think the roots extend.—J. C. G.

rid of without delay by syringing the trees with some insecticide, such as Killmright, dissolving 2 oz. in 1 gallon of warm water, or soak 2 lb. Tobacco-paper in hot water, adding 2 lb. soap; this quantity will suffice for 30 gallons of water. Strain the Tobacco-water thoroughly before mixing with the hulk, or the syringe would be choked with the fine pieces in applying the mixture. The best time for syringing the trees at this season is in the morning about 8 o'clock, or a month later at 4 p.m. The next day give them a thorough washing with clean water, to cleanse the trees of both insects and any sediment that may have lodged on the leaves. Many of the failures to grow Apricots are traceable to an insufficient supply of water to the roots during the summer and after the fruit is gathered. Where the soil is light in character Apricot-trees absorb a quantity of moisture from the soil, and it should be replaced freely. Liquid-mannure ought to be given sparingly; it is apt to create a too vigorous growth, which is detrimental to the life of the tree, inducing cancer and premature decay, to which Apricots are so susceptible. If the trees make growth too freely the roots ought to be shortened at the end of September, inducing them to make more fibres, which sustain the tree, in a far greater proportion than long, bare, fibreless roots do.—S. P.

352.—**Vines dressed with paraffin.**—Seldom do Vines recover that have been dressed with paraffin in a raw state. It is a dangerous practice even when heavily diluted with water. There is no antidote that will resuscitate the Vines that are apparently dying from the effects of the dressing of paraffin. If the young shoots

HOUSE & WINDOW GARDENING.

THE LYRE-FLOWER (DICENTRA (DIELYTRA) SPECTABILIS) FOR A WINDOW.

This graceful plant, with drooping racemes of pink and silver blooms, is easily cultivated in a window, and requires no special heat. As the leaves gradually decay during the summer the roots become strong, especially if put into a border of good soil as soon as they have finished flowering; they can be potted up in November, or later, with as little disturbance as possible, and placed in the window of a room without a fire, with plenty of air, until they start into growth. Any attempt at forcing them at this early stage results in weak foliage and poor flowers; but when the plants are in full growth they may be given the sunny corner of a room window, in which there is a fire daily; plenty of air, except during sharp frost, will still be good for them. They must never be allowed to droop for want of water, but at the same time they should not be watered until the surface-soil of the pot is too dry to stain a finger laid on it; indiscriminate soaking of pot-plants in winter is a fruitful cause of weakness and death amongst them, water being needed more often when the plant begins to open its blooms. After these are finished, which will not be until June, the plant should be divided and placed at once in the open air; if possible, in a good rich sunny border, where the leaves will ripen off gradually during the summer. If a border cannot be obtained, the roots may be divided after flowering, and repotted at once in well-drained pots, with an ordinary potting-compost of leaf-mould, one part, to loam or turf-mould, two parts, adding a sprinkling of soot and sand, and if the loam be not rich a very little soil from an old hot-bed. The pots may be sunk in ashes up to their rims in a yard, or in a box of ashes over the "leads," the plants being watered in dry weather. They will then start into fresh growth, and they will be the better for a little liquid stimulant. Take indoors in the late autumn. L. R.

3258.—Treatment of Palms, &c.—I should think the plants require repotting. The great point with house plants is to keep the leaves well sponged, and the soil in moderately moist condition. If they have not been repotted for some time, and the soil has got thoroughly worn out, repot them, using good loam mixed with sufficient sharp silver-sand to make it moderately light. This is a good season to repot. *Aspidistras* require a similar compost, and peat will suit the *Pteris*. Repot with care, removing a little of the old ball, but not so as to damage the roots, and after potting give water cautiously, as if the soil is kept too wet the results will be unsatisfactory. A little more warmth for a time may be afforded. It will assist the plants to get established more quickly.—C. T.

3480.—Worms on a lawn.—A soot and lime dressing is very beneficial to the ground as well as very objectionable to worms; also I imagine you did not roll your lawns sufficiently after laying down the turves. Had you any loose soil under them? If you had I fail to see how they could die away altogether. Rake well the ground at once, sow a bushel (or two would be better) to the half acre, and mix up a compost of one quarter soot, one quarter lime (slaked), and half good soil. Roll well, and whenever you see the worms appearing roll again. It is the looseness of the soil that prevents the Grass-seed thriving, or the matured plant either, for that matter.—S. J.

It is almost impossible that worms—that is, earth-worms, should have destroyed the turf; in fact, they generally improve it. But perhaps the destroyers were not earth-worms. This you might know by the appearance of the earth thrown up. If ordinary worm-casts, then the occupants of the holes must be earth-worms; if not, dig down and see what has made the holes, and send me some specimens. It is getting late to lay down turf now, and you will have to take care and keep it well watered in dry weather.—G. S. S.

3514.—Nasturtiums and annual Sweet Peas.—It is not necessary to raise these now in the greenhouse. In fine cases out of ten they will do better in the open air. If sown under glass do not give them much heat, and move to a cold pit or frame as soon as they are up before they get green, and plant out when well hardened.—E. H.

THE KITCHEN GARDEN.

NOTES ON BEET.

The Crimson Ball and Globe varieties of the Egyptian or Turnip-rooted Beet are very superior to the old form, and ought certainly to quite supersede the latter. Not only do they quickly attain a serviceable size, but they also keep admirably, the quality at the present time being fully equal to that of the best of the long-rooted varieties. They will succeed well where the latter fail, a rather poor or shallow soil



Beetroot "Dell's Crimson."

suiting them admirably. On deeply cultivated rich ground they are apt to grow rather too strongly—become objectionably coarse, in fact; but this difficulty can easily be obviated by sowing later, or say, about the second or third week in May. They are heavy croppers too, for if the drills are disposed 15 inches apart the seedlings may be set 4 inches apart, and further thinned when the forwardest are near the size of tennis-balls, and therefore fit for use. I have hitherto grown the Turnip-rooted forms principally for early use, not considering them equal to *Dell's Crimson* and such like for winter use, but in the future the globe-shaped forms will be more extensively cultivated, as they please the cooks as well as those who eat them. For affording early supplies of tender highly-coloured young roots they are indispensable. A considerable gain will be effected by sowing a pinch of seed now in a pan or box of soil, placing it in heat to germinate, the seedlings being grown to a good size near to the glass in a pit or frame, and then transplanted, that is to say, dibbled out 9 inches apart on a warm border. Fairly early roots can also be had by sowing seed at once on either a warm-border or in a sunny, open spot. Frost occasionally destroys the very early sowings, but this risk may well be run, while birds have in many cases to be kept off with nets, or an occasional dusting of soot and lime may be given while the dew is on the plants, this also saving them from slugs. The end of April or early in May is early enough in most localities for sowing the main-crop of Beet. In this case also coarseness is most objectionable, and if the ground is strong and has been well manured for the previous crop, no manure ought to be given for the Beet. It is possible to err in the opposite direction, poor ground not growing Beet quickly or large enough, small and stringy roots being of no value whatever. If solid manure is used, this should be dug in rather deeply so as to prevent the top roots coming into contact with it too quickly, forking being the inevitable result of the latter occurrence. *Dell's Crimson* is in my opinion the best main-crop Beet in cultivation, and it is also known under many other synonyms. It is of neat growth, the foliage as well as the roots being very richly coloured, but it is scarcely vigorous enough for poor soils, and for these the Cheltenham Green-top and Pragnell's Exhibition are more suitable. If either of the latter is grown on strong ground, defer sowing the seed till the middle of May, and draw the drills 15 inches apart, eventually thinning out the seedlings to about 8 inches apart. *Dell's* requires less space, and the drills for this variety may be 12 inches apart, planting the plants from 6 inches to 8 inches apart at the final thinning.

3496.—Planting Asparagus.—Asparagus may be safely transplanted now if the plants can be obtained near home. The best time for planting is when the young shoots are about a couple of inches above the ground; but I have transplanted when a foot high. I generally place a little fine rich compost over the roots, and water thoroughly as soon as planted; but if the plants have to travel far in weather like this, the chances of success are not so good.—E. H.

It is a good time to plant Asparagus from the 1st to the 20th of April, care being taken not to injure the young shoots, which will be pushing out from the crowns of the plants at that time. When planted at this season of the year they grow away at once, and if the ground is well trenched and heavily manured the plants grow with great vigour. They require well looking after, and a stick should be placed to each plant in order that the shoots may be tied to it and prevented from snapping at the base in a high wind. This last is of the utmost importance, for if the growing shoots are destroyed, or part of them, so much will the roots be weakened for next season. If dry, sunny weather continues, it will be necessary to mulch and water the plants.—J. D. E.

3497.—Peas for show in July.—I am not acquainted with the Californian Wonder Pea. If it is the same as American Wonder it is a dwarf early variety, and is not adapted for exhibition, as the pods are small. It would stand no chance in competition with the best Marrow Peas. To have Marrow Peas ready for exhibition the third week in July they should be planted at once. Early Peas, such as American Wonder, will be time enough in three weeks hence.—R. H.

3513.—Treatment of Tomatoes.—So long as the Tomato-leaves are healthy, let them remain on the plants. If the plants are crowded, and it seems desirable to let in more air and sunshine, the leaves may be shortened back, as half-leaf will be better than cutting away altogether.—E. H.

If the plants are making a strong growth, and especially if they stand at all closely together, it would be as well to shorten the lower leaves back as suggested, but not before the plants have commenced fruiting. A moderate amount of defoliation lets the air and light in between crowded plants greatly to their benefit, but if carried to excess it is injurious.—B. G. R.

3503.—Jerusalem Artichokes.—It is not doing the best for them to plant Jerusalem Artichokes in a north aspect. They will grow there, but the result will be better if planted in some open, sunny spot. They are propagated from the tubers like Potatoes, and pretty well every bit will grow, though it is best to use good sets. If smooth tubers are selected year after year for planting, the roughness which is generally a characteristic of the Jerusalem Artichoke may be refined away to a great extent.—E. H.

3518.—Treatment of Seakale.—Old Seakale plants when so large as those mentioned in this query are not so good for use as younger ones. The plants are always best the third year from the seed. We are using Seakale here all through the winter and early spring, and I sow a quart or two of seed annually to keep up a succession of young healthy plants. Crowns will form where the plants were cut over; and the old crowns taken off and planted deeper into the ground will also form roots freely, but the crowns of these old plants always run to seed, and are not so valuable for outting as young plants.—J. D. E.

You may cut the old Seakale stems off and use them to form new plantations. If as long as you state, cut into pieces 4 inches to 6 inches long, and plant in rows with a dibble. The old roots left in the ground will form new growths, which should be thinned if too many appear.—E. H.

3521.—An old Asparagus-bed.—Better make a new bed. Salt will not kill Couch Grass without injuring the Asparagus roots. Seeds may be sown now where the plants are intended to remain, thinning them out to from 12 inches to 15 inches apart in the rows. I like the single-row system at intervals of 3 feet.—E. H.

Potatoes as ground-cleaners.—Whilst the value of a good breadth of some strong-growing, disease-resisting Potato cannot be too highly estimated in its food-producing sense, it has considerable value also in its cleansing and disintegrating influence on rough, foul soil. Passing Sandown park, Esher, last season, I could not but note with much satisfaction the spectacle of a large number of working-men hard at work trenching up several acres of old and very tough pasture land, which had been placed

at their disposal as allotments by the racecourse company. That trenching was in this case the only method of bringing the ground into a useful condition for cropping was evident, as the Grass was long and the roots deep. The only fault to find with the work was that it did not seem to be deep enough, as the crops of whatever kind following would have to be sown or planted almost into the turf. The two evils to be encountered, and which might make the allotments for a couple of years, perhaps, something of a white elephant to the tenants, were a plentiful stock of wireworms and a good deal of coarse Twitch or Couch Grass growth. From the wireworms no crop would be safe, but one of coarse, strong-growing Potatoes would perhaps suffer least. Still farther, no crop would be as efficacious in helping to check, by smothering the surface with foliage, the grass Grasses, that would otherwise grow rapidly; whilst the strong roots of the Potatoes would prey upon the decaying sods, and during the summer thoroughly disintegrate them. Thus henceforth this old pasture would be in good clean working condition, and were it allowed to lie fallow all the following winter, being occasionally turned up to allow rooks and starlings to get at the wireworms, it might be materially freed also from these pests.—D.

BORECOLES AND THEIR VALUE.

As far as private growers are concerned, the green curled Borecole or Scotch Kale (see cut) is the most generally popular, and deservedly so. Perfectly hardy they are not, but it is not often the crop is lost, and the tops are usually available during the worst part of the winter, the side-shoots following in due course. Read's Hearting is both the best in point of quality and the least hardy, while all the rest are very succulent and tender when properly cooked. This season every green leaf has been gathered in cottagers' gardens, so scarce has been, and still is, the green food within the reach of the poorer classes. Cottagers' Kale crops heavily and is fairly hardy, but the quality is not so good as that of the curled Kale. Asparagus or Buda Kale is among the hardiest of the winter greens, and not unfrequently proves of great value. It is naturally dwarf, hardy, and late, being only just growing or producing shoots at the present time. Being kept closely gathered, whether required for use or not, early flowering is prevented and abundance of very succulent and agreeably flavoured greens are had throughout May and sometimes well into June. Private growers, too, often overlook the good qualities of this kind of Kale. In a conversation I recently had with a market grower of good experience, he asserted that, taking one season with another, no variety of winter greens paid so well as the common Thousand-headed Kale. This is largely grown by farmers for sheep feed, and after a mild winter is not wanted for any other purpose. When, however, other greens are very scarce, the Thousand-headed sells readily in the market, the average price this season being about 5s. a "lug," a west country term for a square rod. It is out very hard, so that consumers who pay 2d. and sometimes as much as 3d. per pound for it have a rather large proportion of stalks and old leaves to cook or not as they please. It is not a suitable variety for garden culture, but for the open fields and allotments it is one of the best that can be grown. Borecoles generally ought to be finally got out rather

be 30 inches apart, 2 feet dividing the plants in the row. The variegated Scotch Kales are very pretty, and though not much in demand for garnishing, are quite a feature in the kitchen garden, and can be used similarly to the ordinary forms. Their cultivation may also be similar, though if planted on somewhat poor ground the colours and variegation are more pronounced than is the case if highly cultivated. Both the Asparagus and Thousand-headed Kales may be sown where the plants are to grow, and this is the simplest way of growing them. They ought to have the benefit of a rather rich root-run and a good open position, the seed being sown from now up to the end of May thinly in drills not more than 2 feet apart. If raised somewhat earlier the plants should be freely thinned out, or left, say, 18 inches apart; but if late sowing is resorted to, then they may well be left 12 inches apart. All that is further necessary is to make good any blanks by transplanting, and a serviceable lot of greens should result. I.

OUTDOOR PLANTS.

PLANTING PÆONIES.

As the season is rapidly advancing, no time should now be lost in planting these noble herbaceous plants. Indeed, an earlier date than the present may be preferable for various reasons, but it is not always possible to accomplish everything at the right time, and it is remarkable how much these plants resent removal at any time, as the following will show: A year or two since I had occasion to replant a somewhat crowded hatch of the old Double Crimson. The plants were of good size, and had in the previous year produced fine flowers, three to six on a plant. Everything being ready, the plants were lifted and replanted in about an hour, occupying a position adjoining another and similar hatch of the same variety. The work being so quickly done, I naturally thought that the plants would suffer but little, particularly as the soil was not shaken from them more than was possible. In the result, however, those replanted made but puny growth, bloomed

seasons such plants may be flooded once or twice a week, applying liquid manure alternately with clear water. They love moisture as well as deep and rich soil, and too frequently receive insufficient supplies of the former in hot summers when their flowering is complete, bloom inferior in quality being produced in the ensuing year. Always plant them in open ground away from tree roots or shrubberies that would quickly take the moisture from the soil. Pæonies occupy a high position among hardy perennials, and no pains should be spared to grow them to perfection. J.

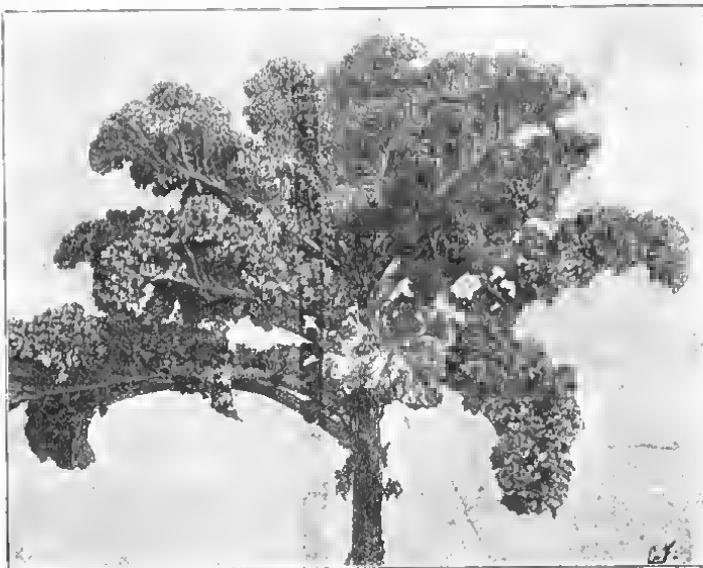
3516.—Plant for a centre of a bed.—

You have a wide selection of hardy and tender plants if you care to use them. I think, however, that your choice inclines to the latter. In any case you would have had a more definite reply had you given the size of the bed. Amongst hardy plants I should say that Yucca gloriosa would do admirably. The nearest approach to anything like a Cactus for a central plant are one of the greenhouse forms of Sempervivum. S. arborescens is quite a stately plant, so is also S. phaloides, only of a bolder character. There are also several forms of the Dracenas that will do in the open air in summer.—J. C. C.

— A Cactus will hardly be suitable. A group of succulents is very well to show off by contrast their curious and quaint forms, but for such a position I should try a Dracena lœvis, or one of the hardier Felms, such as Senecio elegans. If a cheaper thing is wanted plant one of the dark-leaved Castor-oils (Gibson) or a variegated Malva.—E. H.

— If the bed is large you might have a small plant of the American Aloe in the centre, which has a fine effect, or its variegated variety, Pachyphium bracteatum, Sempervivum arborescens atropurpureum, a bold growing plant, with striking dark-coloured leafage, or if the bed is not too formal or large a plant of the well-known Agapanthus umbellatus would be suitable. It has fine leafage and heads of blue flowers.—C. T.

3504.—New Zealand Flax.—This plant will doubtless stand the winter in many districts of Ireland. I once saw in County Wicklow all kinds of New Zealand trees and shrubs which had stood through the winters of many years, for they had grown into very large specimens. It had better be planted out now and have all the season to become established. It is better



Head of "Scotch Kale."

fully a week later, and produce much smaller flowers than the companion batch that was left alone. The planting was done very early in the year. I mention this so that intending planters should be prepared to wait for Pæonies to establish themselves, and when this is done the reward will come annually in their large handsome flowers. Few plants are of more simple requirements, and, given a deep and rich soil, they soon make headway. It is almost impossible to over-mannure them. Liquid manure may be given to established plants in unlimited quantity with excellent results, and in a

to let the side-growths form roots before they are taken off; large growths with a few roots attached form plants in a very short time. I have tried planting them in pots, where they soon become established, but near London the New Zealand Flax is not hardy out-of-doors.—J. D. E.

— This plant may be divided the same as the Pampas Grass in May, or off-sets with roots attached may easily be obtained from early plants. It is not generally hardy, but will succeed in warm, sheltered places in Ireland and round the south and west coasts of England. It will grow in any good soil. Keep the plants well supplied with water so

The Double Crimson Primrose.

This is a sickle beauty which everybody who knows it aspires to grow. I think there can be little doubt as to its partiality for light, rich, moist land, and some gardens may have the right conditions to suit it. It loves plenty of leaf-mould, incorporating it deeply with the soil, to be divided and set more deeply every spring-time just after flowering, if a similar operation has not been done in the previous late summer, a time which some people prefer in order not to interrupt the flowering process. I have always found, however, that if a fair piece of root-stock could be taken with each division in the month of March or April the plants would not only grow vigorously in the newly-prepared soil, but the flowers would open perfectly, though perhaps a little later than usual. Set the divisions well down and never allow the plants to go longer than two years without transplanting.—J.

THE GLADWIN (IRIS FÆTIDISSIMA).

This is a native of England from Durham southwards, and is abundant in Hampshire, Suffolk, and other of the southern counties. Hooker says it is naturalised in Scotland, and that it is rare in Ireland. As a native it probably really is, but as a half-wild or naturalised species it is abundant, especially near Dublin, where, however, it does not fruit so freely and so beautifully as in Southern England. It seems to favour the limestone formations in Ireland as in England, where it is also plentiful on the chalk of Kent and Surrey. In aspect this plant is more sombre in leafage than any other species, its foliage being densely clustered, of a dark-green colour and not glaucous, as is the case with most other rhizomatous kinds. Its flowers produced in May, several on a scape, are of a dingy purple or lilac colour with darker veins, these being succeeded by large trigonal fruits not unlike those of *Iris pseud-Acorus* in shape, but when the pods or capsules burst, as they do in the early winter season, the brown valves are lined inside with clusters of coral-red or orange berries or seeds. The handsome fruits are shown in the accompanying engraving of about a third the size of nature, and when grouped simply with a handful of the deep-hued evergreen leaves they form a distinct and handsome ornament. Of late years large quantities of these fruits have been sent to Covent-garden and other flower markets, where they are sold readily as indoor ornaments. They are sometimes used as a substitute for Holly-berries, which they somewhat resemble in colour and size. The plant is worth a place in the wild garden, or it may be naturalised on hedge banks and near water, or on the Grassy outlying portions of the lawn, where its foliage acts as a foil to brighter things, such as Snowdrops and Daffodils. There is a variegated kind sometimes met with in gardens, but it is not so handsome as the wild type. B.

3526.—Laying out a flower bed.—As you wish still to have hedging plants, try Tuberos Begonias of good colours, edged with *Dactylis glomerata variegata*, with a final margin of Tufted Pansies. This will be rather a flat arrangement, but you may also make a fine feature by planting good Fuchsias, mixed with Tufted Pansies, as a groundwork to the bed; outside this central arrangement Ageratums. Fuchsias will make a good change, and prove not only effective but informal; but the *Lobelia fulgens*, such varieties as Queen Victoria and Firefly are very rich in colour, and if used freely in the centre, the groundwork may be Tufted Pansies or Ageratums, a fine contrast with the Pansies outside this centre, and the margin of *Centaurea rugosus*. I should make use of the following plants not mentioned by you, except one: Scarlet *Lobelia*, Tuberos Begonias, Fuchsias, Tufted Pansies, and such things as Ageratums and *Dactylis*. Some of the richest and brightest, yet most informal, beds I have seen have been produced by these subjects.—C. T.

DIVIDING HERBACEOUS PLANTS.

This is the best time of year to perform this operation, as growth is now getting active, and the pieces strike fresh root very quickly, and cuts in the stem heal over quickly, such plants as Hepaticas may now be pulled in pieces, and replanted, a few crowns in each tuft, which will quickly develop into fine clumps. *Gentiana acaulis*, the loveliest of blue flowers, *Auriculas*, and *Polyanthuses*, Daisies for edgings, *Niolas*, etc., if carefully divided and replanted, flourish much better, and bloom for a greater length of time than if left undisturbed, while many of the larger growing plants, such as *Phloxes*, *Pyrethrums*, *Tritomas*, etc., need the soil renewing at least every alternate year, for being strong rooters and gross feeders, they soon exhaust the soil in their immediate vicinity, and if taken up, divided, and replanted on fresh, deeply-cultivated soil, they will repay the trouble by continuing to branch out and flower for weeks after those that have not had the same attention have done blossoming. It is advisable to do half the stock one year, and half the next to get the longest season of flowering possible, as dividing retards the blooming a little, although it prolongs the season much later; but by having a few established clumps for early flowering, and the rest divided for a prolonged season of bloom, there will be a greatly increased display, for a time of drought soon brings the flowering period to an end, unless there is plenty of food within reach of the roots of the plants, and it is then that the effects of good cultivation are most apparent. J. G., Hants.

3511.—Plants for a trellis-work.

The autumn would be the best season for planting. I should recommend Red Honeyuckle, Yellow Jasmine, Gloire de Dijon Rose, *Pyrus japonica*, Clematis Jackmani, and the large perennial White *Convolvulus*. I would, however, plant a hedge of variegated Privet on the east side of the trellis as a partial shelter to the



The Gladwin (*Iris fœtidissima*).

flowering creepers; this will also greatly help the screen, since few flowering creepers are sufficiently dense in their foliage to offer much protection against wind.—A. G. BUTLER.

—These open trellises are not well adapted for climbers. They are so draughty. Tender things will not grow upon them, and the fact that they are required to break the east winds seems suggestive. The common hardy Honeyuckle, mixed with *Jasminum nudiflorum* and *Clematis Flammula*, will be pretty and interesting, and will be in blossom, more or less, all the summer.—E. H.

3463.—Time for planting bulbs.—On the 27th September last year I planted all my outdoor Hyacinths and Tulips—to the number of 250 of each sort. They are now in full bloom, and have been for some time, and very handsome they look yet. You may wait until 15th October if you wish, but it is safer and better to have all spring outdoor flowering bulbs in by 1st October. The same applies to Narcissus and Daffodils.—S. J.

3505.—Improving a lawn.—If the ground is merely "a collection of weeds," the best thing to do will be to dig it over, and bury the weeds well into the ground. It is easy during the process of digging to make the surface quite level. The best and quickest way to secure a nice green lawn is to obtain good turf from somewhere else and turf it over. This is

of necessity also the more expensive way; a nice green turf can also be obtained by sowing lawn Grass seeds, which can be obtained in mixture from any of the leading seedsmen. Watering the weedy ground with guano-water would cause the weeds to grow as well as the Grass.—J. D. E.

3508.—Seedling Pansies.—If you want to grow seedling Pansies fit for exhibition you must sow the seed about the middle of July, and early in October plant them in a cold frame to shield them from rain and snow. Frost will not hurt them if the ground is not saturated with moisture. To get flowers fit for naming, I should say you would want to grow at least 500 to secure half-a-dozen equal to the best exhibition varieties now advertised, and to do this you must obtain seed from the most reliable sources, and be prepared to pay a good price for a small quantity. As I write I have a lot of plants now in flower from the seed obtained from three of the best known strains, which cost me a good bit of money. The flowers are very pretty, and the variety of colours satisfactory, but not one is worthy of being named, chiefly for the reason that the plants bearing the best flowers are deficient in vigour, for even a well-formed and well-marked flower is of no use if the plant is a poor grower. If you wish to avoid a covert smile passing over the features of your fellow-florists when you are showing them your flowers you had better not attempt to give names to any of your stock until an independent party has decided on their merits.—J. C. O.

—These are very easily obtained from seed, and the young seedlings soon grow away freely in rich, deep soil. If the seed was sown under glass early in the year, and the plants were grown on freely afterwards, exhibition blooms might be obtained, but the best time to sow Pansy seed is in July. Sow in fine soil out-of-doors. When the plants have grown a little, prick them out, and plant where they are to flower from the middle to the end of the month of September. The plants may go out about a foot asunder, and in good deep soil they will begin to flower in March or April, and continue to do so until the end of the season. Bright colours, good substance of petals, and circular form of flower are the leading qualities.—J. D. E.

—You ask an interesting question. If you mean show Pansies you will have to get something unusually distinct and good for any one to merit a distinct name; but you may also select any fine bold coloured kinds likely to make a good garden flower, not thinking entirely of the exhibition. Pansies, especially the "tufted" kinds, have been much brought forward of late for the garden, and there are many pretty kinds, and something may occur amongst your seedlings to merit attention. But avoid giving a name, unless a flower is really first-class, and then give just a simple name only. The show Pansies are the florists' varieties of the old type, and may be either one distinct colour (self), or the ground yellow or white, the colours not running into the other, but with the belting and blotches clearly marked. As regards foliage, the upper petals may be coloured with varied shades; the lacing and blotches, however, on the other portion being quite distinct. The form of the flowers should be round, the petals closely arranged, and form a smooth, even bloom, of fine substance, velvety, the eye in the centre of the flower as far as possible yellow, and not "rayed"—that is, no rays or strips of colour radiating from it, whilst in respect to size, as in the case of most exhibition flowers, the bigger blooms, other points being equal, come first. If you find any promising variety in the "tufted" class, pay regard to its habit, freedom, and softness for the garden, apart from the colouring of the flowers.—C. T.

3494.—Water Lily seed.—I do not know where these can be obtained. Probably it is not to be bought. In the most likely catalogue of all—that of Villoria Andrieux et Cie, of Paris—seed is offered of only one variety kind, and that the common white, and of three tropical species beside, but none of the fine kinds enumerated in my article.—A. H.

3500.—Hardy Water Lilies.—Write to M. Latour Marillac, Temple-sur-Loire, Sarroux, Rhone, France, for his list. I consider the present prices very moderate, as some of the best kinds are only about one third what they were three years ago, when the plants were purchased that were described in my recent article.—A. H. O. 1893

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of GARDENING, 37, Southampton-street, Covent-garden, London, W. Letters on business should be sent to the PUBLISHER. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appeared.

3541.—Fence for a rockwork.—Would someone kindly give me a list of Ferns suitable to grow amongst rockwork in the open air with a waterfall in it?—ALPHA.

3542.—Angle for a coolinery.—For a coolinery to vinery facing due south, what is the most suitable angle? Forty degrees has been mentioned to me.—JOLANER.

3543.—Treatment of Fuchsias.—What treatment is best for Fuchsias which were grown from cuttings last year, and were somewhat neglected in the early part of this season?—F. H. H.

3544.—Narcissus flowers dying off.—Would someone kindly tell me the reasons of my Narcissus flowers dying off? Barely one open. They are growing in a border under a north wall.—G. H.

3545.—Dahlias.—I wish to ask the names of the best six Dahlias (to include only two Cactus) to plant in one bed, the blooms to match, or contrast? Do six more to me to be up twice altogether for show—four each Cactus, Show, and Fancy.—J. B. B.

3546.—Getting rid of worms.—Will someone kindly tell me how to get rid of very large worms in a lawn without injuring the Grass? I have tried lime-water, and it seems to fetch the little ones up, but it takes no effect on large ones.—J. H.

3547.—Ten-week Stocks and China Asters in pots.—What is the best treatment to attain a fine show of Ten-week Stocks and China Asters in 6-inch pots in an unheated greenhouse, and how many plants should be in each pot?—HARBOUR.

3548.—Potatoes.—I have recently had sent me some seed Potatoes. The name set with them is "Fucher's Frame." I do not know the sort. They seem to be a white round kind. Are they early, late, or medium, and to the name right?—J. B. B.

3549.—Pipy Celery.—Will someone tell me the reason why my Celery has gone pipy this last two or three seasons? I manure fairly, and water when required. I plant it deeply when I first put it in the trench. Is that right or wrong?—WORKMAN.

3550.—Selection of Dahlias.—Will someone please name the best six Pompon Dahlias, and the best six Show and Fancy kinds? Also the best Cactus, and if the Green Dahlia "viridiflora" could be shown as a Pompon in a collection?—DAVIDA FANCIER.

3551.—Aucuba japonica.—Is there any difference between Aucuba japonica and Variegated Laurel, or is there any such thing as Variegated Laurel? I think the Aucuba is sometimes called Variegated Laurel. Also, how can the Aucuba be made to berry?—D.

3552.—Flowers for a grave.—Will someone kindly tell me what flowers would be most suitable for a grave that only get the sun in the morning? If possible, I should like flowers that will bloom most of the summer. The soil is not very good, being rather clayey.—A. W. H.

3553.—Perennials for beds.—Will any person kindly let me know the names of twelve good showy perennials to flower in summer? Different colors for twelve beds in flower garden. Also state their height! I like something under 2 1/2 feet high, and good bloomers.—D.

3554.—Dying Peach branches.—Is it better to wait until one side of a Peach-tree is quite dead, or to cut it off as soon as it shows signs of decay? What is the reason of and cure for "scald" on Peaches? Should blighted leaves be nipped off as in disbudding?—GARLAND.

3555.—Palm leaves dying.—Will anyone kindly tell me the reason of the tips of the leaves of a Kentia Palm going dead? They are sponged every week, and the plant is kept only moderately wet. It stands in a brass pot in the window of a drawing-room facing east.—L. M. L.

3556.—Emigration for gardeners.—Will someone kindly inform me the best part of America for gardeners to obtain employment? Are there any good openings in Canada for gardeners with slight knowledge of cattle and poultry, with and without small capital?—NOTICE.

3557.—Sewage-water.—The entire drainage of my house goes into a cesspool with a very large overflow receptacle, whence it can be pumped out. My gardener, though admitting that it may do good if put on the land, considers that it would be impossible to use it for growing plants. My contention—supported by my recollections of Chinese horticulture—in that, properly diluted, it should be excellent for Raspberries, growing Peas, and, indeed, almost anything. I should be glad to know, if right?—H. G.

3558.—Seakale from seed.—Will anyone kindly inform me how to grow Seakale from the seed, both for kitchen garden cultivation and forcing in boxes for winter use, and are the roots that have been grown in deep boxes outside during the winter of any further use?—FARMERMAN.

3559.—Climber for a conservatory, &c.—Will someone kindly tell me the best climbing plants for a conservatory? I have a Tacsonia, Plumbago, and Passiflora princeps. The house has the full sun, and is very warm. Do Roses in pots do best in the shade or in the conservatory?—N. O.

3560.—Ornamentals from cuttings.—Is it too early to take cuttings of Malmaison, Miss Joffe, etc., from plants which are in bud, or is it better to wait until the plants have flowered, lest they should get checked by removing the side shoots? The Miss Joffe's are bushy young plants.—OSMR.

3561.—Marchal Niel Rose in a conservatory.—I have a Marchal Niel Rose growing in a conservatory. It has just finished blossoming, and owing to the quantity of flowers which I have had from it, it looks rather weak. It is also attacked by green-fly. What treatment is best?—F. H. H.

3562.—Anthurium Scherzerianum.—Will anyone kindly tell me the reason why the blossoms of Anthurium Scherzerianum break off before coming into blossom? At first I thought that it was the gardener's fault, but finally one was seen breaking off by itself—i.e., untouched by anyone.—RINEA.

3563.—Manure for Potatoes, &c.—I shall feel obliged if someone will kindly inform me whether kainit and superphosphate are suitable manures for such crops as Potatoes, Onions, Parsnips, &c. If so, how should they be applied, and when? Any other information on the subject will be thankfully received.—MILL VIEW, Leicestershire.

3564.—Magnolias not flowering (grafted).—I believe there are two fine Magnolias here—one with south aspect, and the other in a corner with south and east aspect—on a wall. They have not flowered for two years, and how many years before that I do not know. What can be done to induce or help them to flower?—C. B. A.

3565.—Treatment of a Honeysuckle.—I had a slowly-growing plant of Honeysuckle (Lonicera flexuosa) a year ago on a verandah, and it got out down by the winter frost, which caused it to throw up numerous small root shoots in the gravel paths very untidily, but it did not flower any more. What would be the treatment for it now?—H. J.

3566.—Plants for greenhouse heated with an oil-lamp.—Wanted information as to names of plants, climber, &c., to furnish a greenhouse heated in winter only by an oil-lamp? The house faces south-west, and is built against the dwelling-house over the basement, 8 feet long, 6 feet wide, 12 feet high from basement floor to top.—ONOCERUS.

3567.—Rats and Water Lilies.—I have a pond a good deal frequented by water-rats. It is only about a foot or 18 inches deep. Would the rats be injurious to Water Lilies if planted in it? Water flows freely into and out of it, but still there is a good deal of coniferous growth which gathers in it. Is there any way to prevent it getting on to the plants?—D. H.

3568.—Tomatoes in a small house.—I have some Tomatoes to flower in a small house, 55 degs. night temperature. I have noticed that the blossoms, after some of the fruits have set, have, in some cases, dropped off the plants about a quarter of an inch from the stalks. Will someone kindly tell me the reason? I give plenty of air on warm days, and keep the plants plentifully supplied with water.—BRUCE.

3569.—Orange-tree from a pip.—I have a little Orange-tree raised from a pip. It is about two years old and 16 inches high. I intend having it grafted presently, but the wood is as yet quite soft, except just at the base. Will someone kindly tell me whether it would be well to cut it down in order to make it grow more bushy, as the stem, being so soft at the top, is apt to bend to one side?—A. H. H.

3570.—Vine culture.—I have just taken to a greenhouse, 22 feet by 16 feet, heated by a stove. There are two Vines—Black Hamburg, and White King; and roots to a border outside; stems as thick as my wrist. The past fortnight they have nicely broken into leaf. I shall be glad to know how to treat these successfully—ventilation, watering, feeding, etc.? I am now using a fire.—F. C. SALMON.

3571.—Salvia cocinea nana, &c.—Will anyone please let me know whether this Salvia is a perennial or half-hardy annual? Is some catalogue in it called a perennial, and in others a half-hardy annual. I am afraid to plant it out in a bed in the flower-garden, fearing that if it is perennial it won't bloom this year. Also, is Ageratum imperiale, dwarf blue, a good plant to make up a nice blue bed, or will it be showy enough?—D.

3572.—Jasminum nudiflorum.—Succeeding to a much-neglected garden, I find a yellow winter Jasmine, which has been permitted to grow for years unpruned, until it has formed a dense mass 8 feet or 4 feet thick. I wish my wall to look tidy, but fear if I cut it right back I shall lose all bloom next winter. What should I do? Also, what is the proper season and way of pruning this plant under ordinary circumstances?—H. G.

3573.—Bulbs from South Africa.—I have just received the following bulbs from South Africa. Should I plant them now or keep in a cool place till autumn, and is a temperature of 50 degs. sufficient for them? They are Watsonia triflora O'Brien, W. speciosa, Antholyza, Friesman, blue corollae, Friesia refracta alba, Cytantheus angustifolius, C. obliquus, C. spiralis, Satsyrum corifolium, Lachenalia aerea, Crinum aquaticum, and C. riparium.—T. B.

3574.—Forcing Seakale.—I have a quantity of two-year-old Seakale plants, which have been raised in a border of the kitchen garden, where the soil is a strong loam upon a stiff clay. How must I direct the gardener to prepare a bed upon which to force these plants next winter? What should they be removed, and what is the covering that should be used? The situation is cold and damp, in north-west of Yorkshire.—Mrs. T., Woodlands.

3575.—Seed from Algiers.—I have had sent me from Algiers some seeds of the Geranium (query, Caroulier) tree, and should be glad of some information about it? Will it grow out-of-doors in this country, or if not, what amount of heat will it require? Would it be suitable for planting in a large bed in a conservatory? The seeds were sown in a pot in a warm greenhouse, and the young plants are about 2 inches high, but I do not know what to do next.—GRASSER.

3576.—Vines in a cool-house.—I should be obliged if some friends would give me particulars how and when to begin to disbud Vines in a cool-house? They have just begun to show bloom. Also, about tying them in, and when to do them second and third time? I had them done three times last year, but found I could not depend on the men I had, so I pruned them myself, and letted to do all that is required to them, if some friend will furnish me with all information?—H. W.

3577.—Keeping birds off Peas and Cherries.—Will someone kindly tell me the best way to keep birds off Peas, also a Cherry-tree? I have a very large Cherry-tree (standard). It bears a heavy crop of fruit every year, but I always have to gather them before they are ripe, or the birds would have them all. The sparrows are the greatest pests I have to contend with. With respect to the Peas, I can manage fairly well to keep them off with strings of black thread in their young stage, but when they begin to pod, then they attack them, and, to me, it seems impossible to keep them away, and I lose quite half my crop. Locality, London, E.—PETERK.

3578.—The right to rain-water.—I am living in one of a row of five cottages, and the rain-water from the whole of the roofs runs into my rain-water cask. The neighbours imagine they have a right to the water, and, at the same time, come at a time to dip and take it away, oftentimes clearing the lot. Will someone kindly say if I have a right to move the outlet pipe to a place more suitable to myself? If so, I shall build it and put up a door to keep the other people off my premises. The pipes have been there for more than twenty years, but the property changed hands about ten years ago. I put the oak in its present position about three years ago. Before that time the neighbours used to catch the water in their own buckets.—WITNESSE ASTRAS.

3579.—On cucumber plants dying.—Would "J. O. C.," or any experienced grower at Cucumbers, say what is the cause of plants dying away in the following manner? First symptoms are, curling of the leaves, next the aerial droops as if it wanted water in a day or so after another, and then the plant droops altogether. I have grown for several years, and had more or less plants go off like this, and cannot trace its cause. They are grown in a lean-to house upon a stage above hot-water pipes. The plants are about 8 feet high now, and I have just had one go off as in previous years. I have also had some go off while a dozen nice Cucumbers have been hanging. They are growing upon a mound of soil, as is always advised.—CUCUMBERS KNOWERS.

3580.—Chrysanthemum for out flowers.—Would "K. H.," or someone else, kindly give me with advice on the following? I have some nice plants of Chrysanthemum of M. Desgrange, Mrs. Hawkins, and a few others of that section, that I wish to grow for out blooms only. I stopped the most of them about three weeks ago, when 6 inches high. They are now making brisks. What I want to know is, am I to retain all the shoots from this break? If not, how many shall I retain, and also at what stage of growth shall I remove the shoots, if any have to be removed? It is advisable to pinch back the coming shoots? If so, what length shall I allow them to grow before doing so? I have also a few elegies. Will the same treatment apply to them? Any hints on their culture for out bloom will greatly oblige?—W. B.

3581.—Marchal Niel Rose in a greenhouse.—I have a Marchal Niel Rose in a greenhouse. From root to end of the bough it is 15 feet long. At the latter end of January it became full of buds, and looked very promising, and about ten days afterwards the foliage went off as if struck by lightning, and I could crumble it to powder. It has two stems, and about 2 feet from the ground it is split and cracked. They were the same last summer. It is an oak tree to be removed! Is it advisable to pinch back the coming shoots? If so, what length shall I allow them to grow before doing so? I have also a few elegies. Will the same treatment apply to them? Any hints on their culture for out bloom will greatly oblige?—W. B.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

3582.—Selecting bunches of Grape (Vitis).—When a Vine shoot sends forth two bunches of about equal size and value one must be removed, and, in a general sense, the one to be retained should be nearest to the parent stem.

3583.—Double Zinnias (G. L. M.).—Prick the seedlings off into 4-inch pots, and when thoroughly established they may be gradually hardened off. Planting out should be done early in June in the warmest spot available, and the bed of soil should be deep, rich, and rather light.

3584.—Destroying "American Blight" (B. R.).—Scrape out all you can of the "blight" from the cankered portions and crevices of the Apple-tree branches, and then apply pearlin-olil or Glucol Compound with a soft brush to the affected parts. It may be done even now, but the best time for the operation is during winter.

3585.—Stopping Vines (G. E. Powell).—The Vine should be stopped at two leaves beyond the bunch, and if each lateral shoot has more than one bunch on it, remove the smallest as soon as developed sufficiently. Be sure not to overcrop, and read GARDENING regularly, and you will get all the information you require from time to time. The best book on the Vine is "Vines and Vine Culture," by A. F. Barron, price free for 5s. 3d. from the publisher.

3534.—*Cosygyne corrugata* not flowering (G. Hill).—I do not know what can be the reason you keep this plant in the Catleya-house, for I consider the coolest end of the Odontoglossum-house more in accordance with its requirements, and in such a position I should place it. I consider it entirely your own fault the plant being without flower.—M. B.

3537.—*Oymbidium Lowianum* (B. J. W.).—Your plant which is just opening its flowers will certainly remain good until the end of May, if you keep the syringe from playing upon it. Do not move the plant from the house in which it has been grown, and in which it has opened its flowers, because they will keep the frasher, and the plant will maintain its vigour better.—M. B.

3538.—*Hypocylindrum robustum* (J. Ekin).—This is the name of the shrub you send. It has long, slender linear leaves, the rose-coloured flowers being seated on the axils of the leaves. I should not have expected to see it so early, but I am glad to see it at any time. It is a native of Australia, and should be potted in a mixture of loam and peat made sandy.—J. J.

3539.—*Lobelia in pots* (E. L. A.).—Sow the seed in a frame, and when the seedlings are up prick them off three in a 3-inch pot in light loam soil. Keep the plants close up to the glass, and give plenty of air. When the small pots are full of roots repot the plants into 5-inch ones, in which they should be allowed to flower. The shoots will not need stopping unless the growth is very straggling.

3590.—*Eschscholtzia californica* (C. W.).—You may sow seed in this plant in a warm house. Beware! It is said to be a very untidy plant; but I do not think it so, as its brilliant flowers should not be wanting in any garden. If you have not sown it in your garden before, you may do so now, and you will scarcely require to repeat the operation, as it will come up in abundance in winter years from self-sown seeds.—J. J.

3591.—*Cutting down an Oleander* (O. C. R.).—Cut down the plants at once to 12 inches or 18 inches. When the young shoots appear, and the weather is sufficiently mild, place it in a very sunny spot and give plenty of water, bringing it indoors again at about the end of October. This treatment should ripen the wood, and induce it to flower all the year round. The best cut for the Oleander is the fibrous loam, with a little silver sand added, and it should be pressed firmly around the roots.

3592.—*Green fly on greenhouse plants* (A. Phil.).—The best way of destroying greenfly is by light and frequent fumigations with Tobacco. When this cannot be done the plants, when not in flower, should be syringed frequently and thoroughly with Tobacco-water. This is best done in the evening, and then the next morning the plants should receive a thorough washing with clean rain-water, applied rather liberally with a syringe. To prevent the Tobacco-water reaching the roots the plants should be laid on their sides when syringed.

3593.—*Raising Marvel of Peru from seed* (B. G.).—Seeds of this plant should be sown as early in the year as possible in a warm house. As soon as the seedlings can be handled they should be pricked out in pots or peat about 2 inches apart, using a fine, free, and well-aerated compost. Keep them well up to the light, and about the end of May they may be removed to a cold frame, gradually hardening them to the full exposure. About the end of the first week in June plant them out in the open ground, choosing a sheltered and sunny spot in the garden for them.

3594.—*Treatment of a Palm in a window* (B. E.).—As the plant in question is in good health, and is root-bound, it would be an excellent time now to repot it into a also larger in a warm house. As soon as the seedlings can be handled they should be pricked out in pots or peat about 2 inches apart, using a fine, free, and well-aerated compost. Keep them well up to the light, and about the end of May they may be removed to a cold frame, gradually hardening them to the full exposure. About the end of the first week in June plant them out in the open ground, choosing a sheltered and sunny spot in the garden for them.

3595.—*Hardy Double Primroses* (A. R.).—These Primroses do best in cool, shaded quarters in the summer, such as the north side of a hedge or other outcrop. They should have plenty of water at the roots in hot, dry weather, and when the plants are young, weak soil or other moisture would, no doubt, be beneficial, especially if the soil be poor. The best time to increase them by division is as soon as they have ceased flowering, and before hot, dry weather sets in. If you have no naturally-shaded place to plant them, then a few evergreen branches stuck amongst them will greatly help them to bear the often scorching summer sun.

3596.—*Propagating Hydrangeas* (A. R.).—These are very easily propagated from cuttings, which should be taken off in August, when the wood is partly matured. The cuttings should be about 3 inches or 4 inches in length, and the joints of the shoots should be severed, cutting clean just below the third or fourth leaf. They can then be inserted either singly in small pots or several round the side of a 6-inch one. A good compost for them is a sandy loam, and the pots should be well drained. A slight bed should be prepared, on which place an ordinary frame, covered with a glazed light. Plug the cuttings in this, and keep them well moistened and shaded, and then they will soon strike root.

3597.—*Abutilon vexillarium* (J. Childs).—This is the name of the plant sent. It has small leaves for an Abutilon, and ten bright-red calyx and spreading corolla (of the flowers) of a light-yellow render it very conspicuous and pleasing. Abutilons are very easily grown plants, requiring a mixture of loam leaf-mould and peat made sandy. They require to be well-drained, and to be liberally treated as to water. A Vexillarium may either be grown as small plants, or it is very effective grown to specimen size; but I think it most effective when trained upon a wall in the greenhouse, where it will continue to produce a display until quite the end of June.—J. J.

3598.—*Treatment of an old India-rubber-plant* (N.).—The plant of this, which has become bare of leaves, should be headed back somewhat and be placed in a comfortably warm greenhouse. As soon as possible after the young growths make their appearance, it should

be repotted, taking away as much of the exhausted soil as possible. Use a pot of about the same size as the one it is now growing in. It should be well drained, and the compost should consist of shaly peat and loam and some sharp silver sand. Return it to the warm greenhouse after potting, syringing the plant overhead daily, and shade from hot sun, and do not give much water at the roots until active growth sets in, when plenty will be required.

3599.—*Sparmannia africana* (R. B.).—This is the name of the flower you send. It is an old Cape plant, which has been introduced into this country more than a hundred years, and is still popular for cutting. Its sooty white flowers being very attractive all the year round. There is also a double-flowered form which is very useful. It flowers from about 18 inches in height, and grows some 10 feet or 12 feet high; but if you have no room for such large specimens, strike the young now, and make more young plants; then, when your plants get to large, you may discard them without feeling the loss. Pot them in loam, leaf-mould, and sand in a warm greenhouse; the plant will commence to flower in autumn and continue all winter.—J. J.

Names of Plants and Fruits.

- Names of plants.—Y. R.—*Amaryllis formosissima*—J. Allen.—1, *Cattleya Trianae*, ordinary form; 2, *Odontoglossum vitifolium*; 3, *Odontoglossum luteo-purpureum*; 4, *Lycastron arnoldii*.—M. Lessely.—1, *Odontoglossum luteo-purpureum*, poor form; 2, *Cattleya Sobreders*; 3, *Odontoglossum cirrhosum*.—James Wood.—2, *Miltonia oenacis*; 4, *Oncidium Suttoni*; 5, *Oncidium leucocollum*. Cannot name the *Hippestratum*.—E. Wright.—Cannot name the *Ferax*; too young. Seed again when fronds are fertile. —H. Jarrold.—1, *Dendrobium Wardianum giganteum*; 2, *D. thyrsiflorum*; 3, *D. nobile Cooksoni*.—Miss Bartlett.—The specimens gathered from a wall apparently *Draha murina*. To other one is some *Crucifera* near to it; but the specimen is too poor the name. When sending again number them.—P. B. Chehana.—The Partridge-breasted Aioe (*A. variegata*).—B. A. Haag.—1, *Sisyrinchium grandiflorum*.—J. Hayes.—1, *Cypripedium Bedeni*; 2, *Achelia Barkeri*; 3, *Cypripedium Roebelii*; 4, *Oncidium flexuosum*.—E. J. Jacobsen.—1, *Dendrobium superbum*; 2, *Dendrobium lermouanum giganteum*; 3, *Odontoglossum luteo-purpureum*.—Mrs. Banks.—*Dorolium austrarium*.—A. Suberberg, *Durina*.—*Acacia Verticillata*.—*Alnus*.—*Oreothylax arabicum*.—D. S. B.—*Selaginella Krusiana*, frequently known as *Lycopodium denticulatum*.—Mona.—Cannot name from a single leaf only. Send again when in flower. —D. J. P. Phil.—1, *Narcissus Herfordii*; 2, *Forsythia villoidiana*; 3, *Phlox subulata*; 4, *Dorolium austrarium*.—England.—Seed better specimens, and pack them safely. These sent were crushed out of recognition through being put into a slimy match-box. —Harry Windsor.—The specimens sent are apparently all the same, *Arum maculatum*; but they were much crushed up in transit. —C. Boulker.—*Lithosiphon floridula*.—R. M. B.—*Andromeda grisebunda*.—*Chardonia*.—*Freesia rosea* var.—A. K. Hart.—*Cymbidium Lowianum*.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

H. O. W.—Apply to Messrs. James Veitch and Sons, Royal Exotic Nursery, King's-road, Chelsea, London, S.W. instead of Mr. E. W. Parry, who has given a very good flower of the *Mammillaria Carnaticae*. If you have treated the plant in any special way we shall be glad to receive a note from you on the matter. —Beginner.—Please repeat your queries, and write each one on a separate piece of paper, and on one side of it only. There is no book that we know of that will give you half so much information as *GARDENING ILLUSTRATED*. If you take and read it regularly and attentively. —Constant Reader and Subscriber.—The question as to Water Lilies is replied to in this issue of *GARDENING ILLUSTRATED*, page 104. —North.—"Brown's Forestry" is the best book for you. —James Fleming.—Apply to Messrs. Harbison and Sons, The Grange Nurseries, Bedala, Yorkshire. —Pete.—Take in and read *GARDENING ILLUSTRATED* regularly, and you will get all the information you require. —Spruce Beer.—Write to the editor of *Pharm and Home*, published at this office. —Edward Buckell.—Please send Orchid again. We have not received it. —A. M. Kitchen.—Apply to Mr. E. Hobbay, Cavendish-park Nursery, Rock-road, Cambridge. —W. A. B.—Dust over the rows with soot and lime, and place some lines of thread over the Peas and Beans. —Helen H. Harris.—The Apple-tree roots have evidently got down into a cold, wet subsoil. Lift them and replant in good loam in November next, and well drain the soil if water-logged at all. —Young Gardener, Devon.—The Tomsto-plants are conkered at the root. Have they been much crowded in the seed pans?

Catalogue received.—Farm Seeds, &c. Messrs. Toogood and Sons, Southampton. Books received.—"Manures: How to Make and Use Them," by Frank W. Semper; "Onions for Profit," by T. Grolner; "Calery for Profit," by F. Grolner. Published by Messrs. W. Atlee Burpee and Co., Philadelphia, U.S.A.

POULTRY & RABBITS.

3422.—*Chickens and an incubator*.—"Zeno" does not make it clear what particulars he stands in need of. The eggs are placed in the machine as soon as possible after they are laid, freshness being a most important part of the business. It is a mistake to use stale eggs, even under a hen, but to do so with an incubator is a court failure. Incubators are of various sizes, according to their size and the reputation

of their manufacturer. A fifty-egg machine would cost somewhere about five guineas. Most, if not all, are heated by a lamp fed with paraffin. The incubator is best fixed in a room where fresh air can gain access; but it must not stand in the glare of the sun, nor should it be within reach of hemmoring, or any other disturbance, or the frequent jars will seriously interfere with hatching. There is no reason why the machine should not be fixed in the room to which "Leno" refers, as the warmer the place the less heat will be required from the lamp, but the temperature should be as equable as possible. "Leno" will not be likely to do much good by keeping chickens in a heated room. They are far better when they gain access to the fresh air. Of course, incubator-hatched chickens must be provided with artificial heat, but this is best provided from a regular brooder or foster-mother.—DOULTING.

BIRDS.

3500.—*Feeding Canaries*.—I should be pleased if any one of your readers would tell me what kind of food is best for our Canaries, and for young ones?—A. RADDAE. 3501.—*Robins building*.—Will anyone kindly tell me what time of year Robins build their nests, and if they build in shrubs, and also what they feed on?—LOVVA of Birds.

REALLY GOOD THINGS.

CARNATIONS.—Mrs. Muir, success holder, 6d.; Germanica, yellow, 9d.; Keyard's Holly, apricot, 6d.; Mrs. Laird, superb blue, 6d.; Hero, white, 5d.; Bala, salmon, rose, 4d.; Gloire de Nancy, immense white, 4d.; Redburn, white and clear, 4d.; Salisbury, white, 4d.; Salbury, rose, 4d.; Pink Her Majesty, magenta, 7d.; Old Crimion Globe, true, 2s. 6d. —J. J.

FLOWERING CHEYSANTHS.—Lovely hardy summer and autumn bloomers, grand for cutting. Deiranga, white; Hawking, yellow; Roi des Precoeds, or soon and gold; Pierce's Sealing, bronze; F. Polo, red; Precoeds, golden; and other lovely varieties. Twelve to name, including above, 2s. 3d.; 2s. 4s. 3d.; 4s. 7s.; females an upright 6d. each.

SPECIAL SEEDS for present sowing.—Exquisite Sweet Peas, named kinds, mixed, 6d. and 1s. per packet. Iceland Poppies, white, scarlet, yellow, separate or mixed, 6d. and 1s. per packet. Caradon, double splashed, strain, 6d. and 1s. per packet. Magnificent fancy, unusual, 6d. and 1s. per packet. Sweet doct, 6d. and 1s. per packet. Canterbury Bells, 3d. and 6d. Wallflower, blood-red and gold, 3d. and 6d. per packet. Foxglove, 3d. and 6d. per packet. Sweet William, mixed, 3d. and 6d. All free. Cash.

ROSES, Florist, Boady-lane, Chester. IS. PER DOZ., FREE.—Polyanthus, Pinka, 1 Guiney; 1s. 3d., Auriculars, from best 6d. pair, White Violas (10 packets).—B. ARMITAGE, Horticulturist, Yorks.

WHITE FLOWERS IN WHITE FLOWERS II.—Hartland's "Seed-drift," Double White Fimbriated Poppies. Will also numerous quantities of bloom sown now. The flowers are beautiful, fancy, unusual, 6d. and 1s. per packet. Seed 6d. or packet from—HARTLAND, Seadam, Cork, Ireland. Established 1810.

HARDY FERNS.—40 rare roots, 16d.; 100, 2s. 9d., free. 11 best, 1s. 6d. per packet. Polystichum, C. orach. Adiantum, &c.—H. ANDREWS, Shute Assinater, Devon.

CHEYSANTHEMUMS.—1 doz. best Exhibition varieties, including Mrs. Spaulding, Mrs. B. Coleman, La. Triomphe, and others of equal merit, carefully packed, free, for 1s. 6d. Old Crimion Globe, 6 for 1s. 6d., or 2s. 9d. do.—GRANGE Shepperton green, Middlesex.

GOOD KING HENRY (MERCURY).—The grandest vegetable in cultivation, superior to Asparagus, 40 plants, 2s. 6d., free.—T. HALL, 2, Koscoe-street, Bathurst.

AMERICAN BELLINI, grand Auriculars, 4 packets, 2s.; "Daisy Miller" Auriculars (double, ruby), Yellow Primroses, 1s. doz., free.—LANE, Sydney, N.S.W.

GERANIUMS, autumn rooted cuttings.—Boarlet Viceroy, 1s. 3d. doz.; 2s. 100. Flower of Spring, 6d. doz. Free. Double, 2s. doz., post free for cash. JAMES BARTON, Northbridge-street, Robertson, Brisbane.

FERNS.—Trade.—Stove and greenhouse, 25 Ferns, 2s. in pots, 1s. 100 Large, in 3-in. pots, 6s. doz.; seedlings, 6s. 100. Cypripis, Orestia, Rhandia, and Aralia, 6s. doz. Pines, Palms, Margurites, Hydrangeas, and Pelargoniums, 1s. each. A. omissum large, 6s. and 8s. doz. in pots. Ferns tremula and A. omissum, for making large plants quickly, 1s. and 3s. 100, packed and put on rail free for cash. J. SMITH, London Fern Nursery, Loughborough- Junction, London, E.W.

VIOLETS.—Plant now for fine blooming next season. Wollalaia, giant single blue, 2s. 6d. doz. Coote Bazaar, double white, 1s. 12. Campbell, double blue, very sweet, 2s. 6d. doz. Hilda, 1s. doz. in beautiful kinds. Lists free. 1s. doz. Poppies, Coronas, Mrs. Binkins, &c., and many other good things, 1s. doz.—MRS. WATSON, Hestwall, Cheshire.

SPECIAL CHEAP OFFER.—6 Geraniums, 6 Dbls. Ivy Geraniums, 3 Heliotropes, 3 Fuchsias, 3 French Lavenders, 2s., free. Also 2 Yellow Calceolarias, 1s. 6d., free.—A. TOMKIN, Florist, Sidcup, Kent.

SURPLUS PLANTS.—10 Begonias, 1 Sparmannia, 1 Brugmansia, 3 Dbls. Petunias, 3 Pines, 3 Lactucas, 2 Ferns, 3 Fuchsias, 3 Chrysanthemums, 5 Geraniums, 1 Corollaria, 2 Genistas, 1 Valerian, 2 Solanums, 2 Bourvardias, 54 plants, 6d. free. New Chrysanthemum, E. Siebeck, Mrs. Bunkett, and 1 beautiful Pina, worth 2s., gratis with order.—Head Gardener, 64, Warwick-st., Bathurst.

MERCURY (King Henry).—To cut in May and onward plant, now. Is delicious, superior to Asparagus, no extra cultivation, crown roots, 10s. 3d., free.—ANDERSON, Mill Hill Gardens, Lo. a. n. t. n. Wilsden.

DANIELIAN a Specialty.—Danielian, strong double yellow, Pompano, and Ocaucus, finest varieties, named, 3s. 6d. per doz. post free. Catalogue on application. JOHN THORNTON, 15, Elm-st., Driffield, Yorkshire.

GARDENING ILLUSTRATED.

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CHRYSANTHEMUMS.

SEASONABLE NOTES.

THE present is a busy time amongst cultivators. No matter for what purpose the plants are grown, neglect now in any of the details means failure later on in the season. It is only by grappling with the work as the proper season comes round that it can be kept in check along with so many other matters connected with the garden. The recent bright weather experienced has had the effect of improving the appearance of the plants very much in some instances. No matter in what form they are to be trained, one thing is most essential to success—a sufficiency of space for each plant. Far better it is to grow a less number than to overburden one's space to the detriment of all. I purpose to refer briefly during the present article to the immediate waste of the plants under the various methods of culture. There is no disputing the fact that those grown for the

PRODUCTION OF LARGE BLOOMS, not necessarily for exhibition, but for home use, meet with the greater favour, therefore I will deal with those first. As stated in a previous article, the plants should be encouraged to grow with three shoots after making their first break, this being the number of blossoms each plant is to carry; it is not possible to obtain the best results from plants that are allowed to carry more than one bloom on each shoot. When they are restricted to the number stated the whole energy of each branch is concentrated into the single flower, and with so much better results too. As a rule, the plants make their first natural break during the first three weeks in May, sometimes earlier, owing to unforeseen causes and the manner in which the cuttings were prepared. No matter when this break takes place it should be dealt with promptly; neglect during this period means a waste of energy. All superfluous shoots ought to be promptly removed, restricting the number to three. These are generally the best nearest the point of the plant, although in extreme cases one, or even more, of these will form bloom buds. These also must be cut off with a view of encouraging those lower down to grow strong. Standards are by some persons thought highly of; they need not be of the pattern sometimes seen, where the plants are so closely tied in that the blooms look just as though they were moulded in some particular form, so many inches apart. The forms of standard Chrysanthemums that I recommend are those allowed to grow freely, after the heads, so to speak, are formed, and left to flower at will, disbanding none of the blooms, but allowing all to develop. In this case the free-flowering varieties are to be chosen, such as Mrs. G. Ruddle in the incurved section, Source d'Or and Bonquet Fait in the Japanese list. In addition to these, many varieties of the Pompan Anemone, Pompan and Single-flowered types are peculiarly well adapted to this method of training. There are some, though, who prefer the neatly trained heads and restricted lower

incurved section are the best; they lend themselves to this form of growth easier. The preparation of the plants up to a certain stage is the same in both methods. The main point to observe now is to select those plants which are straight in the stem and encourage them to grow upright until the desired height is attained—viz., 3 feet or 3 foot 6 inches. If the plant does not make its first natural break before that point is reached pinch out the point. This induces other side-shoots to form, which make the formation of the future head. Reduce these shoots to four, and when these have grown 6 inches long again top them. Place a short stake to each plant to prevent an accident to the leading stem. Chrysanthemums grown in

LOW SPECIMEN FORM find many admirers, as a visit to some of our leading exhibitions will testify. Although this form of training is much condemned by some persons, certainly the exhibitions would lose much of their attractiveness if well-grown and skilfully-trained plants were absent. They are not useful for cutting purposes, as a partial loss of the blooms spoils their appearance. However, such plants can easily be grown, which provide a quantity of flowers for cutting; therefore there is no need to spurn the appearance of the trained plants for that purpose. There are two methods of producing specimens—one is growing them to a large size—say, 5 feet in diameter, with 200 blooms on each plant; the other is limiting the plants to about 3 feet in diameter, with from 30 to 50 blooms of high-class merit, quality being the first consideration. Plants of this type are more desirable than those grown for mere size, as the quality of the flowers must then be a secondary consideration, and plants unduly stretched out are not so pleasant to look at. To grow Chrysanthemums in this form the cuttings need striking early to give the plants a long season of growth; when the first shoot is 4 inches high the point should be nipped out of it to induce side branches to form, which gives the basis of the future specimen. When these side shoots are 5 inches long top them again. The plants intended for specimens will now be about that stage in growth. As growth progresses place a few small stakes to the shoots, gradually training them outwards and thus preventing them from being broken, as they easily slip off at this stage. The plants must now have a position in a cold frame close to the glass, where the growth will not be drawn up weakly. The leaves of each plant must stand clear of those of its neighbour. Any defect in the foliage would be detrimental to their appearance later on. The plants will now require a shift into pots 6½ inches in diameter, from those they will go into those in which they are to flower—12-inch for the largest specimens and 11-inch for the smaller. Plants intended to be grown as

BUSHES, to give a quantity of flowers rather than quality, will now have their shoots 6 inches long if they were topped in January. They may now have a second topping, which will induce a larger number of shoots to grow at the base. Plants for the same method of training, but not rooted until the early part of February, will have been topped a couple of weeks since, and now be making vigorous shoots.

should be again topped when the growth is 4 inches long. Shift the plants into larger pots as desired by the state of their roots. On no account allow them to become root-bound, or they require so much more care in watering, and the growth is interfered with. Abundance of water is necessary in all stages to supply their due wants at this season. E. M.

3580.—**Chrysanthemums for cut-flowers.**—I presume "W. B." prefers a quantity of bloom to a few of large size. In that case the plants might be topped once more, when the shoots resulting from the last topping have grown 5 inches long. Afterwards, allow the shoots to grow away uninterruptedly, neither topping nor thinning them whatever. Allow all the flower-buds that form to develop; a nice lot of blossom will result from this method of growing them. The same treatment applies equally well to the single varieties. Pots 8 inches in diameter are large enough for even the strongest plants; some, indeed, will succeed in those an inch less. At no time should the soil be allowed to become dry; the plants will be all the better if liberally fed when the pots in which they are to flower are full of roots. Whatever kind of stimulant is employed it should be used weak, and often, in preference to the opposite. A change of food is beneficial even to Chrysanthemums. Liquid-manure from the cowshed or stable, to which is added a small quantity of soot, is good to commence with, changing it then for some of the various kinds of artificial manures as freely advertised, choosing showery weather for applying these. While employing chemical manures, it is not wise to use them stronger than recommended by the vendors. Very often an extra dose, given, perhaps, with good intentions, is fatal to success. All kinds are easy of application. As a rule, they are sprinkled on the surface and watered in with clear water. During showery weather the rain does the better.—E. M.

3577.—**Keeping birds from Peas and Cherries.**—I have no doubt but that if black thread were run from end to end of the row of sticks in lines about 3 inches apart from the ground upward that it would be found to effectually protect the crop of Peas from the Sparrows. If it is Sparrows that eat the Cherries I believe the black thread would also protect them. I know that this material will keep the Sparrows from the Pear-blossoms in the spring. It is also a sure protection against birds for the buds of hush-fruit, CROCUSES, Cabbage-seeds, Early Lettuce, &c.; but in this locality (Portsmouth) the Sparrows give over during mischief for a season as summer approaches. They do not injure the fruit nor the Peas in the pods. If other birds injure the Cherries tanned netting would be found a good protection. It is advertised in GARDENING very cheaply.—L. C. K.

—There is nothing that will answer the purpose so well as the ordinary netting sold for the purpose. The nearest border will probably be able to tell you where you can obtain it.—A. G. BERRILL.

3562.—**Flowers for a grave.**—Tuffed Pansies, and such like, will suit the position very well, and will bloom promptly well at times.—E. H.

GARDEN WORK.

Conservatory.

Young plants of Tree Carnations will require shifting on, and when established will do better in frames than houses. To do these well they must have good loam, and if the loam of any particular neighbourhood is not suitable it will be better to get some from a district where Carnations do well. The same remark applies to Chrysanthemums, though these plants require heavier loam than Carnations. There is a very great deal in getting the right kind of soil; loam from the beds of good plant cultivators, and it is worth some effort to get the right kind and quality. The soft, silty loams are the best, as gritty matter can be added when required. Next to good loam, which is used more especially for soft-wooded plants, good peat is an absolute necessity for hard-wooded stuff, and it is not often that much peat can be placed upon local supplies. It is far better to purchase the small quantities required for small collections of plants than use the material obtainable from some of the local sources. This is the best season for repotting hard-wooded plants. In shifting or healthy young specimens do not break the ball nor yet lacerate the outside roots by digging among them with a potted trowel, as is sometimes recommended. All that is required is to turn the plant out carefully, remove the crooks from the bottom, and fix the ball of the plant firmly upon the foundation of drainage and rough peat which has been carefully prepared for it, arranging the ball so that there will be one clear inch in space at the top when the potting is completed to receive the water. Be specially careful not to sink the coils of hard-wooded plants too deep in the soil. Earthing up the stems will be fatal; ram the soil in firmly and repot when the roots are in a healthy state as regards moisture, neither too wet nor too dry, and when the day after potting give a good soaking with a roset pot, and afterwards trust to the old expedient familiar to every plant grower of tapping the pot. Plants which have been raised from seeds or cuttings should be potted off and shifted on and kept in warm, close houses or pits to get started. Free graying, pinching if necessary, is essential for the next two months of their harden off and stand outside on coal-ash beds, keeping them well supplied with water. Old plants, after being shortened back a little, may as soon as they break be shifted into 32 sized pots, and be grown outside to get the berries well set. Sometimes these plants are turned out at pots into a warm border, and they usually do very well so treated; but the berries are then later in ripening, and some time is lost in getting the plants established. Shade is necessary now for flowering plants.

Stove.

There is still time to put in cuttings of anything of which young stock may be required, as the soft young shoots will quickly strike in a brisk bottom-heat if kept close. One of the evils to be guarded against now is over-crowding; but such things as *Boerhaavia*, *Amarrillid*, and *Begonias* may be moved to an intermediate house or warm vinery if the plants are quite free from mealy-bugs. *Palme*, *Falala*, *Anthurium*, and *Cyclone* are getting growing larger from year to year, and sooner or later some of them have to be disposed of or sacrificed in some other way. It is generally possible to exchange large plants for small ones of newer introduction and it is quite possible to keep a collection of plants which are well cared for up to date in the matter of new things in this way by exchanges, if the matter is sanctioned by the employer, but not otherwise. The training of some others (*Allamanda*, *Clerodendron*, *Bougainvillea*, and *Sapotea*) should have frequent attention, and if the plants are grown in pots, the fast-growing shoots must not be allowed to twine about indiscriminately, or there will be a difficulty in taking them down to get them arranged on the wire trainers when the blossom-buds appear. Seedling *Saxifraga* and *Gloxinia* will do better in a close pit, where they can be shaded on as they require more space. Many *Orethia* which have completed their blooming will require repotting or basketing; very rough fibrous peat, with fresh Sphagnum chopped small, forms the best compost, the peat to be well filled with drainage. Using such porous materials it is necessary to press them down firmly.

Ferns under Glass.

These are getting into good condition now, as most of the old fronds of Maiden-hair will have been weeded out. Where Ferns are required for cutting the shade must be of a very light character. I prefer screen blinds to roll up and down, as in this way there is a considerable part of the day when the plants will be growing under bright, clear glass, and this would not be the case if summer cloud or whitening is employed; and where appearance has to be studied blinds are best. Seedlings of the species of which we are now in winter will now be ready for pricking off into pans or boxes, to be afterwards transferred to small pots. It is a great mistake to crowd young growing specimens; it quite spoils them for the time being.

Propagating-house.

The stock of bedding plants will now be pretty well provided for, and as soon as room can be spared there are seedling *Begonias* and other young stuff to be helped out. This is a good time for grafting *Oranges* or any other hard-wooded plants. The process is very simple. The scion or graft, which should be a young, healthy shoot, is placed on the side of the stock, a slip of bark and wood having been removed so as to leave a small tongue of bark at the bottom, into which the base of the scion is fitted. The bark of stock and scion should join on at least one side. Tie with moderate firmness, and reduce the head of the stock a little, but still leave on plenty of foliage to keep the sap in circulation. The plants after grafting must be kept close and shaded till the union is complete. An expert hand has but few failures.

Cold Pits and Frames.

As the bedding plants can be moved on to temporary shelters, some of the pits may be got ready for *Melons*, *Cucumbers*, *Green Ginger*, or *Capekums*. Bottom-heat

is necessary for *Cucumbers* and *Melons*, and this can generally be supplied now with stable-manure, sometimes mixed with any of the waste materials to be found in the garden, such as Grass obtained from the lawns. The best prepared beds should be reserved for the *Melons*, so to obtain good-flavoured, well-grown *Melons* the bottom-heat must be continuous. I have had occasionally good *Melons* when the bottom-heat declined before the fruits were ripe in a bright, sunny season.

Window Gardening.

Many are now beginning to make arrangements for the outside window display. Boxes are being repainted and new boxes made. If more effort was made to cover the boxes with foliage and flowers by planting creepers and other free-growing plants along the front, the material with which the boxes are made or its colour will not much signify. I think a perfectly painted box should be completely hidden within a very short time of its being filled.

Outdoor Garden.

The ground now is very dry, and at present there are no signs of rain. Light soils should be firmed by treading. This will be beneficial to *Carnations*, *Panicles*, *Roses*, and most things which have had the spade or fork used among them during the late winter or early spring. Masses of *Wallflowers* are now very bright and showy, and they always flower best in firm ground. The middle of May is quite time enough to sow *Wallflowers* for next year's blooming. *Canterbury Bells* and other *Campanulas* should be sown at once to get the plants strong for blooming next season. Flower seeds will not grow till rain comes unless they are watered, and in all cases watering should be combined with shading. *Rhubarb* leaves spread flat on the ground are better than most things for assisting the germination of seeds. Newly-planted *Evergreens* should have, from time to time, many things will suffer, and not a few lost altogether, unless some pains are bestowed upon them. The first thing is to mulch with old manure or Green-ore something; the second is to give water enough to keep all the roots in a moist condition; the third in the case of valuable specimens is, if possible, to rig up some temporary shade and use a syringe or garden engine freely once or twice a day near the foliage. With proper attention there will be no losses. In purchasing new hardy plants for the borders or rockery, it has an advantage in it in as much as the present is to have them in it, it makes transplanting a certainty. *Antepopsis Veitchii*, *Glenale*, *Fasciola*-flowers, and other kinds of creepers may be planted now out-of-doors to cover walls.

Fruit Garden.

Continue disbanding *Peaches* on walls, and have the Tobacco-powder distributor handy to case insects are present. This saves such a lot of time and trouble. At present the fruit prospects have not suffered materially; some of the blossoms will fall, so matter of course, to the manifest benefit of the crop and the trees too. Very few people have the courage to thin fruit sufficiently, so that a cold night or two, which does the work for them, may be looked upon as a blessing in disguise. The sunhille has done wonders for fruit on trees under glass. *Peaches*, *Grapes*, *Pigs*, and *Melons* never looked better, but though this glorious sunshine has gladdened the gardeners' hearts, it has increased the work immensely. *Melons* have reached up, requiring almost daily attention in tying and stopping; *Vines* had demanded constant attention in thinning, stopping, and tying down. In the early houses sub-tentative had grown at a wonderful rate, necessitating constant rubbing out or pinching. Below the branches the best course is to put out, and above the branch pinch in to one leaf. There are various opinions about feeding *Vines*. Where the borders are shallow and the drainage ample, stimulants, either sprinkled on the surface and watered in or dissolved in the water and applied in this way, must be used very freely. Like in begin the use of stimulants as soon as the berries are thickened, and give a further dressing when the stoning is completed. Whatever stimulant is used is sprinkled on the border and watered in.

Vegetable Garden.

Early *Potatoes* that were planted in February will now push through the soil, and must be sheltered in some way, or the frost will cut them off. Drawing a ridge of dry soil over them will save them for a time, but this is a kind of negative protection; some sort of covering would be better. I have saved a crop by putting *Evergreen* branches among the plants and tying them there. No branch should be long enough to touch the plants, but they should grow taller than they are now. What a nuisance sparrows are among young *Peas* as soon as they come through the ground. Wire guards are essential so long as the *Peas* do not grow through before that time arrives. Ten guards must be taken off and the sticks placed in the *Peas*. There is more than one way of using *Pea* sticks. The best way is to stick them in the ground in a slanting position. When one side of the row has been staked, place the sticks on the other side in a perpendicular position. Fewer sticks will suffice by the way of using them over the upright plant. Continue to prick out *Cucumbers* and see that a sufficient stock of *Winter Greens* is grown. Even the earliest districts might sow now. Olive liquid-manure to *Cauliflowers* and *Lettuces*. Apparage beds in cutting will be benefited by a free and copious application of house sewage; if very strong dilute it with plain water. It has been a good time to wage successful war upon the weeds; the hot dry, sunny weather is a splendid tool. I am in favour of the Dutch hoe because it leaves a free and open surface. The hoe that trends on his work sometimes plucks the weeds again. E. HOSKAY.

Work in the Town Garden.

Even in unheated houses *Tomatoes* may now be safely planted out; but, of course, only strong and carefully hardened plants ought to be employed, while, if they have to stand in any way near the glass, some mat, soaking, or a blind of some kind must be drawn over the stock on frosty or very cold nights. During the summer season, or, say, from the middle of April until the end of October, *Tomatoes* succeed very well in town gardens, and with proper treatment bear abundantly; but during the rest of the year they are not worth house room unless the atmosphere is moderately pure and light and sunshine plentiful. The planting-out system is also decidedly preferable to the culture, though the plants usually succeed better.

ably well in boxes of moderate size. *Pelargoniums* of the Zonal section are now breaking into a beautiful bloom, and even in smoky localities produce a very gay effect, though neither the trusses nor pipe are ever quite so large as in the pure country air. Five-inch and 6-inch pots are the best also in which to flower the plants, unless large specimens are wanted, when they may be potted on into 8-inch pots, but in all cases large pots are undesirable. Always pot firmly, using good rich loam, and keep the plants on a cool bottom near the glass, with plenty of air in fine weather and light shade from hot sun in summer. Plants to flower from April till July or August should be potted the end of February, and another batch potted the end of May will come in to succeed them until the November fog set in, after which the blooms will refuse to expand where the air is more than very slightly smoky laden. The ivy-leaved varieties also are extremely floriferous and useful, especially for window-boxes, balconies, hanging-baskets, &c. These need even less pot-room than the last, and do not suffer from want of water, but when in full bloom and pot-bound both classes should be rather liberally supplied with weak liquid-manures. *Asters*, *Stooks*, and other half hardy annuals may now be successfully sown on a sheltered border of tight rich soil outside, and in this way often do better in the end than those sown under glass, as they are less liable to become drawn out or to damp or "bank" off, though they are, of course, liable to coming into bloom before these started the sowing of the month. The *Salpiglossis* are very pretty subjects to this class with beautifully veined blossoms, and suitable either for pot culture or the open borders; these are better sown early. *Bouvardias* are now breaking into fresh growth, and must be freely syringed over head, but keep the soil on the dry side and repot when a little advanced. B. C. R.

THE COMING WEEK'S WORK.

Extracts from a garden diary from April 29th to May 6th.

Planted several rows of *Soulet Runners*. Dwarf French Beans were sown on a warm border a fortnight ago; they will be sheltered when the frost is over, and protected from wind. Planted out *Cauliflowers* raised under glass; the earliest *Cauliflowers* are coming on under hand-light, and a long row has been planted in a trench along the front of a thorough-house close to the wall. I have cut *Cauliflowers* from to a trench even before those were ready under the lights. I mention this to show that where there are no lights early *Cauliflowers* may be had by planting in a very warm position in a well-manured trench, with a ridge of soil to form a protection along the front. Sowed the main crop of *Peas* in a warm and large warm room. *Chicory*, also for forcing, has just been sown. I have sometimes sown *Chicory* fortnight later, and the roots were quite large enough; if sown too early the plants "bolt" when placed in heat. Planted out early-sown *Leeks* in trenches; also two rows of early *Celery*. Sowed several kinds of *Marrow Peas*, including *Veitch's Perfection* and *Ne Plus Ultra*. I want a good many *Peas* at the end of July and through August and September. Used the hoe everywhere among growing crops to keep down weeds and midge, the *Peas* are pushing through the soil. Put in cuttings of various kinds of Herbs, including *Sage*, *Thyme*, *Tarragon*, &c. Sowed *Cheerill* and made a new bed of Mint. By thrusting a knife down a few inches into the soil the young shoots can be cut off with roots attached, and these planted out 6 inches apart will soon fill up and be useful for gathering. Mulched all outtings with an inch or so of old leaf-mould between the rows. Put in a lot of *Mrs. Sinkins* Pink cuttings on a hot-bed; the plants are intended for forcing. Through a press of other matters I am laborious for the *Peas* and *Chicory*, and will soon form rows. Sowed *Spinach* between rows of *Peas*. It potted *Azaleas* and other hard-wooded plants which have flowered; the plants will be kept rather warmer and closer for the present to encourage root action and consequent growth. Dug over and prepared a piece of land for sowing hardy plants, such as *Wallflowers*, *Sweet Williams*, *Hollyhocks*, &c. Watered recently-planted trees and shrubs; this is being done about twice a week, and will be continued until rain falls copiously. The trees have been weeded, and the weeds which are being sown to store in the walled south wall. Commenced disbanding *Peaches*, meeting the advances of the green-fly by the use of Tobacco-powder; this is superior at this early season, when the nights are often cold, to all forms of washing. Divided the stock of *Double White Primulas*; they were heavily mulched some weeks ago with *Cocoa-fibre* and ash, and roots had begun to form, so that I expect every piece will make a good plant by the end of the summer. Pricked out *Stocks* and *Asters* in beds in the open air; position where they were wanted for filling up in a difficult lot of *Campanula pyramidalis* (*Chimney Campanula*) to form a background to a long border. Top-dressed *Cucumbers* in a house; also tied down and stopped; the growth has been marvellous during the late sunny weather. Thinned *Grapes* in the second house, and took out a few more berries from *Hamburgh* in an early house which have now about finished stoning. Of course, not much thinning is left to be done. Crowded a few bunches appearing too crowded; it was better to cut out a few of the earliest berries, so that those left might have room to grow to the full size. Top-dressed *Vine-borders* with artificial manures, chiefly *Patent Nitrate*. I used this last season, and found it very beneficial to the *Grapes*; it may be used freely without doing harm. I have used 2 lb. to the square yard, and shall probably repeat the dressing later on in the case of the late varieties. Shifted on late-staked *Chrysanthemums* into 5-inch pots; the earliest plants have just been placed in 7-inch pots, and will shortly be placed in the open air altogether; at present they are shaded under a framework of wood, covered at night with canvas.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruits and vegetables for drawing. The drawings so made will be engraved in the best manner, and will appear in due course in GARDENING ILLUSTRATED.

* In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equal good results.

TREES AND SHRUBS.

LARGE FLOWERED OR HYBRID CLEMATIS.

The accompanying engraving shows the effective beauty and interest that a good variety of Clematis may possess when well grown and not too much restricted or trained. A wreath of silver stars like this enforces our admiration, even although the background be only an old black fence of tarred beards, a few wires being strained across it to keep the plant from falling down. Seeing how bold and lovely these larger hybrid Clematises are when vigorously grown, the wonder is that we so seldom see them used in places almost overdone with the forms of C. Jackmani. Such noble varieties as Lady Caroline Neville, lanuginosa, lanuginosa nivoa, Lady Bovill, Symeiana Henry, Standishi, Stella, or Vesta can scarcely ever become too plentiful. Some of the double-flowered kinds are also very handsome when well established, especially Lucie Lemoine or Mrs. Van Houtte, and I know a fine old specimen of C. Sieboldi that is a picture every autumn when covered

quite easy to root their branches by layering them under a large flattish stone, and plants so propagated are the best, albeit the process is a slow one. On light and warm sandy or gravelly soils these plants enjoy a top-dressing or mulching of short, well-decomposed manure every spring, or manure-water may be applied with advantage after growth has begun. B.

TRANSPLANTING RHODODENDRONS.

This is the best time of the whole year for planting Rhododendrons. The plants commence to grow at once, if proper care is taken of them after planting. When autumn planting is practised the roots remain practically inactive several months, and when they become soddened with rains they are much more likely to be injured by frost. Not that there is any likelihood of frost ever killing a Rhododendron, but it may receive such a check that little progress is made for a season or two; but where the planting is deferred until the spring, none of these risks are experienced. Rhododendrons will grow most luxuriantly in the natural soil in some districts, even where no peat is to be found,

quantity of foliage is diminished, this has an effect upon the maturation of the growth. Compost is a capital stimulant for plants that do not make a sufficiency of growth. Lightly scratch the surface, and lay on a 2 inch covering of freshly-gathered manure. As this decays it mixes with the soil. The manurial effects are washed down to the roots. S. P.

The White-flowered Wistaria.—One rarely sees this beautiful climber, although the blue-flowered type, *W. elaeagnis*, is common. The white variety is like it in everything except the flowers, which are pure white, in delicate contrast to the species, and the two might be planted together with happy effect. The variety is a climber well worth growing, but it is not common as yet. A variety I sometimes see mentioned in catalogues is the double; but it is a poor thing—double-flowered, it is true, but not of the slightest beauty or value. Wistarias like a sunny spot and a light soil. There are other varieties of the Wistaria, but the white is the most beautiful.—C. T.

Pyrus japonica virginialis.—Those who prefer purity in the white will give the preference to this fine variety over that of the common white, because of the large size, fine shape, and snowy whiteness of the flowers. But both are remarkably good; the creamy tint of the ordinary white variety goes well with the red as with the pure white. All are blooming freely in the open air just now, and any position appears to suit them—the most preferable from east, southwards to west. I do not think the Pyruses are sufficiently appreciated as plants in pots for flowering in a cold-house in early spring. It is in this way I grow virginialis, and it is remarkable how long it remains in flower, and how successfully it blooms. In this respect it contrasts most favourably with the fleeting character of *Pyrus Pissardi*.—D.

Berberis Darwini.—Often as I have urged the usefulness and beauty of this Barberry as a plant for walls, especially for comparatively dwarf ones, I am unable to resist again mentioning it, for on my cottage at the present time it is truly lovely—notably, a plant encircling a bow window having a west aspect. In addition to being trained a good width under and around it, a single stem has been led up each of the grey stone mullions of the window and then festooned along the top. This being in full bloom is a pretty and rather unusual sight. To prevent the undue obstruction of light, these shoots (especially on the mullions) are after flowering spur-pruned. By so doing we certainly lose the bluish-purple berries, but to make amends for such, a few growths of the Flame-flower (*Tropaeolum speciosum*) are led up these shoots. These in autumn bloom profusely and also berry, so I think the loss of the Barberry berries, in this instance, is amply and interestingly replaced. Neither does this arrangement appear to be in the least detrimental to the Barberry, for it is annually a mass of bloom.—R.

Chinese Plum (*Prunus triloba*).—This is a charming spring-flowering shrub. The flowers, produced with great profusion in April, are individually quite a little rosette of delicate pink. It may be grown as a bush, but it is best as a wall climber, and in many small gardens spare can be found for this shrub, which is perfectly hardy, not troublesome to grow in any way, but likes sunshine. The flowers appear before the leaves and one gets a mass of bloom. The season for planting has gone, but it is one of those good things that should be made note of for getting early next autumn. In many small gardens shrubs of a common kind, usually evergreens, are planted in a way that leads one to think nothing else is available. The Chinese Plum is seldom seen, although very free, hardy, and covered with pretty flowers in the spring.—C. T.

8551.—**Aucuba japonica.**—The *Aucuba japonica* is often erroneously called a Variegated Laurel. To obtain berries you must introduce a male plant or get pollen from a male plant and dust it over the common variety of japonicum when the latter is in blossom.—E. H.

This is sometimes termed the Variegated Laurel, and is one of the easiest garden shrubs to cultivate. The old variety with mottled leaves is the female plant, and was grown for about sixty years in England without bearing a single berry. The green-leaved variety, introduced



White Clematis on a fence.

with its purple-centred rosettes of a soft straw colour. Other good single kinds are: Miss Bateman, Mrs. Bateman, Othello, Lord Londesborough, Fair Rosamond, and Fairy Queen, and a good double-flowered variety of a rich purple colour is the well-known Countess of Lovelace. As wall or trellis climbers all the best varieties deserve notice, but it is necessary to be careful in planting, or failures will be numerous. Good strong plants in pots are best to begin with, and these should be planted out in the position selected for them after all danger of severe frosts is past, say the middle of May. In obtaining these plants, one should be careful to find out if they have been lifted from open-air plunging-beds, or whether they have just been taken out of a warm greenhouse temperature. A practised eye will see this in a moment, but an amateur might not notice the difference, and in the latter case injury to the plants or actual loss would follow their being at once planted out-of-doors before May or June. Another drawback is that nearly all these plants are grafted on roots of wild or common kinds, and the union is often so slight that they are easily broken by a touch or in transit. Wherever plants of the best sorts are established it is

but a sandy loam, while in another place where the least suspicion of lime is present, even in the form of chalk, much expense must be incurred to obtain success with these shrubs. Soil impregnated with lime in any form is fatal to the existence of Rhododendrons—they will not live in it, let alone flourish. Peat or bog soil then has to be introduced, at least 2 feet in depth, for the roots. It is surprising what a number of years Rhododendrons will succeed by digging out a hole, and simply filling it with suitable material, even if such soil does not extend more than 6 inches beyond the roots. Directly the roots reach the outside of the prepared compost and come in contact with the natural soil which is objectionable, a change takes place in the colour of the leaves, these turning pale, and not making free growth. I have grown Rhododendrons under such circumstances as these for many years by adding fresh material for the roots, say 6 inches further all round every six years, and with fair success. I find where the plants are exposed to the full influence of sun and under such conditions of soil a greater quantity of bloom-trusses are produced and less growth, owing to the shoots not being so thoroughly ripened. Consequently upon less vigour and more exposure, all the

some thirty-five years ago, was the male plant; and when it was planted in juxtaposition to the old established variety a profusion of berries was the result. These berries vegetate very freely, and the produce of them has given many fine varieties.—J. D. E.

— I think I have heard this shrub called variegated Laurel. If you want it to bear berries you must get a male plant, the leaves of which are not blotched and are of a prettier outline than the female shrub, their margins being decorated more after the character of a Holly-leaf; plant the male near the female, and the blue-berries will do the rest of the work for you (they like evil-smelling flowers), and you will have an abundance of berries in the autumn.—A. G. SERRA.

3564—**Magnolias not flowering.**—There is an inferior form of *Magnolia grandiflora*, which grows vigorously but rarely flowers. No doubt your plants are of this variety, and I regret I cannot tell you what to do with them to make them flower. The better form, that known as the Exmouth variety, which does so well as a standard in many gardens in Devonshire, has broader and thicker foliage, and a good part of the underside of the leaves is covered with a russet kind of down.—J. C. C.

3572.—**Jasminum nudiflorum.**—If the plant is judiciously cut back now the young growths made during the summer will flower next winter, but of course the centre of the tree will be comparatively bare for two or three years, and if you want a really neat, well-trained specimen, the best way would be to root it up and plant a fresh one. This charming subject should always be pruned directly the flowers are over, and then the young shoots will bloom the following winter. Merely thin out any weak or exhausted wood.—B. C. R.

— As this *Jasmin* flowers on the young wood, spring is the proper time to prune: the earlier the better in order to get the young wood ripened. It is quite late enough now to do it.—B. R.

OUTDOOR PLANTS,

HARDY HERBACEOUS LOBELIAS.

The hardy perennial *Lobelia*s, of which *L. splendens* and *L. siphilitica* may be taken as types, are amongst the most beautiful and useful of autumn flowers. Although fairly hardy, they are very impatient of excessive moisture, and in most districts require protection during winter. This may be done by placing ashes in the shape of a cone over the crowns, or lifting and storing in a dry shed or frame. The latter method, though perhaps more troublesome, is safer, and in every way more satisfactory, as the plants are always under control, and easier to get at for propagation in spring. By storing the roots in frames they begin to grow earlier, and where large stocks are required it is most convenient. Although impatient of moisture during the resting period, they revel in it when in active growth, and where beds can be prepared in the vicinity of lakes or streams, better results will be obtained than in the mixed border or flower-beds. In propagating in early spring they can be divided into single crowns, and these, potted on, soon form sturdy plants ready to plant out on the approach of warm weather. They thrive best in a free vegetable soil, and like plenty of sun, unless in the case of *L. cardinalis*, which I find thrives best in a partially shaded bed.

L. CARDINALIS.—The true plant is one of the rarest, though one of the brightest of the genus. The brilliant effect produced in autumn by tufts of this species well repay any trouble it may give, for though by no means fastidious, the difficulty of growing it well in small gardens in the absence of shade and moisture is very great. It is a real bog-loving plant, being found in wet ground in Brunswick, Florida, and the borders of Texas. It may be described as the least hardy of those mentioned here, and on this account is often considered annual or biennial. It is, however, a true perennial, although maybe a short-lived one, and should be frequently raised from seed to make sure of keeping up the stock. This species is not so liable to disease as the *splendens* varieties, and may be kept a little damper during the resting period. Grown on an ordinary border, it invariably has a weak, stunted appearance, but in a free, rich soil in a shady position, and well supplied with moisture, I have often seen it 3 feet to 4½ feet high, and flowering very profusely. The flowers are of the brightest and most vivid scarlet, and

fully effective, and as they last a long time in perfection it well deserves care and attention. So far as I know, there are no varieties of this species in cultivation. Dr. Gray mentions it varying to rose colour and even white, but this, it seems, is rare, and I have never seen anything but the scarlet form. Parkinson mentions it as "cherished in our garden in 1620," and gives it as "growing near the River of Canada, where the French plantation in America



The Scarlet Lobelia (*Lobelia cardinalis*).

is coated." It differs from all the other species in its bright scarlet flowers and broad serrated leaves. The annexed illustration gives some idea of the effect of a single clump of this grand species.

L. HYBRIDA of gardens, but also called *Milleri* and *L. fulgens* var. *violacea*, appears to be a hybrid between *L. splendens* and *L. siphilitica*, though of this we are uncertain. Its fine rich violet-purple flowers mark it out for special distinction. It is invaluable for grouping in the flower garden or mixed border, and is one of the hardiest of the hardy *Lobelia*s. It may be left out during winter with perfect safety, and can be lifted, divided, and replanted in spring without trouble. The leaves are almost as broad as those of *L. cardinalis*, glandular, hairy, and with the long sepals and hairs of *L. siphilitica*.

L. SPLENDENS.—This species is also called *L. fulgens*. Next to *L. siphilitica*, it is the most prolific of varieties of all the *Lobelia*s, Queen Victoria, Sir R. Napier, Rob Roy, and a host of others having been obtained from it by florists. These vary in colour and habit very much, and as they are all robust, free-flowering plants, they are indispensable in the autumn garden, where they give such striking effects until cut down by early frosts. *L. splendens* differs from the others by its much narrower leaves, almost glabrous, and all but the lower sessile or stem-clasping. It will be found a really good border plant and harder than *L. cardinalis*. The variety *igoea* has broader leaves and larger flowers.

L. SIPHILITICA.—An extremely variable species, and one of the most useful autumn plants we possess. It is very popular for grouping, and proves so hardy and robust in the soils that it might with advantage be

introduced into the wild garden or the mixed shrubbery. It may be managed much in the same way as *L. hybrida*. It will be found to stand the winter well, and as it is prolific in varieties of all shades of violet and purple, varying to rose and white, it cannot fail to become a favourite. North America. Flowering from July to September.

L. TURPA belongs to an entirely different set. It is often called *Tupa Fuelli*, and although a native of Chili, will be found to stand well in the south with such protection as may be afforded with sifted ashes, gravel, or other loose material. It is best, however, against a south wall or in front of a house, and when doing well often attains a height of 6 feet to 8 feet. The flowers are large, brick-red, and produced in large racemes, and the leaves are broad and woolly. It flowers from July to September. *L. Cavanillesii* is said to be amenable to the same treatment as above, but I have not tried it out-of-doors. K.

A note on Primroses.—The great thing in getting good garden Primroses is to select strong colours, not washy or weak shades, very poor in the beds or borders. If good seed is sown, selected from a carefully-tended strain, many bright colours will occur, which should be set apart, and the others destroyed. One sees a large number of worthless varieties, especially washed-out shades of red, which are positively on eyesores. Large, bold, handsome flowers, such as one gets in the beautiful *Manstead* Primroses, are the kind to make an effect in the garden—clear, brilliant crimson, pure white, yellow and allied self colours, very bright and attractive. A poor lot of Primroses is very objectionable, the colours appearing so dull and uninteresting against the beautiful self-coloured kinds that brighten the garden with their flowers.—C. T.

Saxifraga sancta—For many years I wondered why this deep, almost orange-yellow-flowered species should remain comparatively unnoticed. It is always a neat, deep green, shining-foliaged plant, and when in flower in March and April it strikes one as being much brighter than some of the favourite yellows that preceded it by about a month, such as *luteo-purpurea*, *Malyi*, *arctoides*, and the yellow *Burseriana*. I am aware of one objection to it; it has the reputation of being a shy bloomer. You get over this, however, by simply leaving your plants undisturbed beyond a little top-dressing. It should be allowed to expand into tufts as big as a man's hat. A friend wrote me last season from Grange-over-Sands that "a clump the size of a large mole-hill is one of the greatest novelties I have met with. When crowded all over with bright yellow flowers it gave a striking effect on a limestone rockery."—W.

Dwarf Dahlias.—The various forms of dwarf Dahlias are very useful when cultivated so that their flowering period may begin soon after midsummer. Cactus varieties seem to be the most popular at present. To have these and others early (they are now at end of April showing flower-buds), I plant the roots in boxes during February, slightly covering with soil and placing in warmth. They soon start into growth. They are divided when the shoots have started a few inches. If young stock is desired, cuttings are taken off and rooted in 2½-inch pots plunged on bottom-heat. They are grown on in the boxes till May, and then are well prepared by judicious exposure till the end of the month or early in June, when they are planted out in rich ground, and well watered and staked. They begin to open their flowers soon after, and continue blooming till frost puts an end to their usefulness. In good seasons they supply out flowers to the end of October. I do not bold with the system of growing Dahlias to the end of August before they flower, as they sometimes become disfigured during the month of September from early frost.—M.

3553—**Perennials for beds**—One of the best perennials for producing abundances of showy flowers is the *Pentstemon*. Next to that I should recommend *Antirrhinum*, then *Campanula*, *Pyrethrum*, *Phlox*, *Gaillardia*, *Aquilegia* (including *A. californica*), *Ranunculus acuminatus*, *plenus*, *Iris*, *Papaver*, *Aconitum*, and *Dianthus*. Most of the above have endless lovely varieties, and if you fill in between with

Roses and Pansies your garden will be gay through the summer months, though I personally prefer greater variety, to last from early spring to late autumn.—A. G. BUTLER.

— *Gaillardia grandiflora maxima*, or *Hybrida* (orange and red), *Anemone japonica* (white and red), *Chrysanthemum maximum* (white), and *Fuchsia globosa*. If covered with mounds of ashes in winter, the roots will be safe; or the plants may be lifted and stored in boxes, and planted out again in spring. *Salvia patens* roots lifted in autumn and stored in sand may be planted out again in spring. There may also be several beds of Tufted Pansies. *Antirrhinum* in assorted colours, such as white, yellow, and red, make very bright and showy beds; and if the seeds are cut off they will flower all summer. *Geum coccineum plenum* (scarlet), and a bed or two of Iceland Poppies will be showy and fairly lasting. *Pentstemon* make beautiful masses; they are not quite hardy, but if cuttings are taken in autumn, and planted in a cold frame, they will soon make strong plants when put out in spring. Why not try a bed or two of Tea Roses and Perpetual Carnations?—E. H.

— The following are all showy and froo-flowering objects. I append their approximate of growth, also time they flower. *Anemone japonica alba*, 2 foot to 3 feet high, white, September; *Campanula persicifolia*, blue, 2 feet, June and July; *C. carpatina fl. pl.*, white, 2 feet, July; *Chelone barbata*, 2 foot, red, July and August; *Coreopsis lanceolata*, yellow, 2 feet, July; *Chrysanthemum maximum*, white, 1 foot 6 inches, August; *Rudbeckia Newmani*, orange, black centre, 1 foot 6 inches, September; *Helianthus pumilum*, yellow, 15 inches, August; *Lychnis vicaria splendens fl. pl.*, 1 foot, magenta, May; *Stenactis speciosa*, magenta, 2 feet 2 inches, June, July and August; *Bupthalmum salicifolium*, yellow, 2 feet, July; *Gaillardia grandiflora*, orange and yellow, 1 foot 2 inches, July.—S. P.

3547.—**Ten-week Stocks and China Asters.**—Asters are often planted outside in a bed, lifted with balls of earth, and potted late in summer. But the foliage is better when, after being pricked off thinly in rich soil in boxes to get strong, they are placed in 5-inch pots and plunged in the pots outside in a bed of Coconut-fibre or old leaf-mould. If well grown, one plant is enough in a pot. Stocks must be grown in pots all through, or they lose all their leaves. Give liquid-manure as soon as the plants get strong enough to use it.—E. H.

— If the plants are not already growing no time should be lost in sowing the seed thinly in sandy soil in a gentle warmth if possible. When the plants are 2 inches high prepare a sufficient number of pots by first placing half-a-dozen crocks each about the size of a penny-piece at the bottom; over these place a few rough leaves, filling up the pots with a compost of three parts loam to one part of partly decayed horse-manure, pressing it firmly into the pots. Prick into the soil up to the seed-leaves three plants of Stocks and four of Asters, placing them within an inch of the rim of the pot. Stand the pots in a cold frame until the plants are secure from frost, then put out-of-doors in a sunny spot.—S. P.

3544.—**Narcissus flowers dying off.**—All the members of this family need to be growing in the full sunlight to enable the bulbs to ripen thoroughly to give a full crop of flower the next year. Want of maturity, owing to the unfavourable position, is the cause of the flowers dying off. When the foliage changes colour, dig up the roots, and divide them if several bulbs are growing together, and plant them 4 inches deep in any sunny spot.—S. P.

3550.—**Selection of Dahlias.**—Six of the finest Pompons are: *Iolanthe* (orange), *Grace* (orange), *Geo. Brinckman* (white), *Isault* (yellow), *Vivid* (orange-scarlet), and *Don Juan* (maroon). Six show varieties: *W. E. Gladstone* (rose-pink), *Thos. Hobbs* (magenta), *W. H. Williams* (scarlet), *Gloire de Lyon* (white), *Harrison Weir* (yellow), and *Geo. Rawlings* (maroon, nr *H. Turner* (flesh-white). Six fancy: *M. & C. Campbell* (huff), *Peacock* (maroon, tipped white), *Rev. J. B. Canim* (yellow, tipped red), *Major Bartlett* (orange). *Comedian* (orange and crimson), and *Lottie Eckford* (white and purple). Six best Cactus: *Parthea*, *Mrs. Douglas*, *Lady Marcham*, *Duke*

of *Clarence*, *Beauty of Arundel*, and *Juarez*. *Viridiflora* is a semi-Cactus variety, and not a Pompon.—B. C. R.

— Six is a small collection of Pompon varieties, but I should give preference to *Ariel*, the flowers of good form, the colour of a distinct orange-buff shade; *Darkness*, very deep maroon, a very attractive variety for its depth of colouring; *Fairy Tales*, pale-primrose, the flowers very neat and pleasing; *Little Ethel*, white, with the petals tipped with purple; *Vivid*, orange-scarlet; and *White Aster*, the flowers pure white and excellent for cutting. I do not think that you would show *D. viridiflora* in a collection of Pompon kinds, but the flowers are not sufficiently interesting scarcely to go in a show box of Pompon varieties. You should choose some brighter flower. The "*Green Dahlia*" is all right in a miscellaneous collection, and has a certain interest from its distinctive green flowers. Fine show Dahlias are the following, but of course, as this section is of large extent, it is a matter of taste in some degree. You cannot do wrong by selecting *Celestine*, the colour chocolate, on a fawn shade; *Glowworm*, orange-scarlet; *Mrs. Gladstone*, soft delicate blush, without question the best of the light-coloured varieties; *J. T. West*, yellow, topped with purple; *Eclipse*, orange-scarlet, and *R. T. Rawleigh*, rich-yellow. Of the fancy kinds, select *Duchess of Albany*, orange, striped with crimson; *Fanny Stuart*, red, with white tips to the petals; *Frank Pearce*, rose, with stripes of crimson; *Lottie Eckford*, white, with purple stripes; *Mrs. Saunders*, yellow, the petals tipped with white; and *Pelican*, white, with purple stripes. The best six Cactus kinds are *Amphion*, chrome-yellow in colour, with a tint of cherry shade in it; *Henry Patrick*, of the purest white; *Juarez*, scarlet; *Mrs. Hawkins*, sulphur colour, with a lighter tone towards the margin of the petals;

FERNS.

FERNS FOR GROWING IN HANGING-BASKETS.

THIS mode of culture for Ferns has much to recommend it, inasmuch as with a suitable selection for respective kinds of houses Ferns are, on the whole, as well or better adapted for the purpose than any other description of plant with ornamental foliage. Lofty conservatories of an ornamental character are excellent places for displaying hanging-baskets to advantage. Considering that sufficient room for flowering plants can be found upon stages or other positions at a lower level, it is on the whole considerably better to depend upon the baskets being filled with plants that will remain of permanent interest. The best position for hanging-baskets is over the pathways, so as to avoid any drip upon plants beneath them. These may be suspended in two ways with advantage—either by means of slender or sufficiently strong chains or by wire rope running through pulleys. This latter is a convenient method for watering without the use of steps, which have to be used in the other instance. A very good time for watering hanging-baskets is at nightfall, the object being to avoid any drip during the day-time; when this is not suitable the early morning is the next best time. The majority of Ferns in hanging-baskets require but little shade. Where this is the case more water will be found necessary; in fact, Ferns in baskets will, in comparison with those in pots, absorb a deal more moisture; hence, good attention is requisite upon this point. In making up baskets of hanging Ferns it is far better to select a tolerably good and strong plant rather than two or three weaker ones. The sides of the basket should be lined with Sphagnum Moss to hold the soil as well as to retain moisture around the



Hanging-basket of Ferns.

Parthea, salmon, shot with red, and *Professor Baldwin*, orange-scarlet, true shape of the true Cactus character.—C. T.

3507.—**Rats and Water Lilies.**—I should advise "D. H." to wage war against the rats. They will not hurt the plants, but will damage the blooms. I am killing them this season along the banks of a lake just planted with Lilies. It is not usual to have much coniferoid growth where there is a constant flow of water unless it be sluggish. I should try some ducks or other water fowl, but not Moorhens, as they damage the flowers.—A. H.

Sufficient room should be allowed for watering, keeping the crown of the plant in a slight hollow. Around the sides some Selaginella should be pricked in; this will soon take root if the baskets be kept for a short time in a humid atmosphere, and at the same time be an assistance to the Fern itself. The baskets are most durable when made of wire, afterwards galvanised; these may be of various sizes, but those unduly small do not give sufficient room for soil. The tops of the baskets should be the widest part; plain baskets are just as good as those of an ornamental character, bearing in mind that the Ferns are the real ornaments—

not the receptacles. Ornamental baskets of rustic make look very well, but these when made of wood do not last so long in good condition. Those made of pottery are better, but are, of course, heavier; hence wire-baskets are the most suitable for the purpose. The soil for the majority of Ferns in baskets should be about equal proportions of fibrous peat and loam with sand. For an ordinary conservatory that is kept at about the temperature of a greenhouse with free ventilation the following are good kinds to grow—viz: *Asplenium adnigrum*, *Davallia canaliculata*, *Arsinum assimile*, *Leucostium palmatum*, *Nephrolepis linguis*, *Platyterium albidorneum* and *Woodswardia radicans*, the last for large baskets. In a temperate-house the following will do well, viz, (*Oniophlebium subauriculatum*, *Adiantum amabile* (one of the best of all), *A. cuneatum*, *Davallia elegans*, *D. filix-mas*, *Lygodium scandens*, and *Nephrolepis exaltata*. For a stove temperature the following may be added to the foregoing selection—viz, *Asplenium loevisimum*, *Davallia teenifolia*, *Vectichiana*, *Nephrolepis davallioides furcata*, *Adiantum coelestinum*, *Gymnogramma schizophylla gloriosa*, *Davallia bullata*, and *D. Mooreana*, the last for baskets of extra size. *Adiantum farleyense*, where it does not succeed so well as one could wish, should also be tried suspended from the roof in a stove; this treated it often thrives remarkably well. About the present is a very good time for making up Fern baskets. That of which an illustration is now given is a good example. P.

3511—Ferns for a rockwork.—You may have a very charming selection of Ferns for the rockery, or in a shady, moist place the Lady Ferns, Blechnums, Hart's-tongue, and the finer kinds of *Asplenium* will grow with vigour, also the *Osmundas*. I like the varieties of the Common Blechnum Spicatum, as they soon form handsome tufts, the fronds of a deep green colour. There comes a great number of ferns, from crispum, which has elegantly-crested fronds, to those of a simpler character. The Shield Ferns, *Aspidium aculeatum* or *Polyetichum angulare* are very pleasing, when growing in a moist, shady corner, and there is a wealth of beauty in the *Osmunda*, *O. regalis* attaining considerable height, and presenting a bold, robust, and handsome aspect. Then you may get the North American *O. cinnamomea* and the dwarf *O. Claytoniana*, which has fronds of a very bright colour. The Ostrich Ferns are also of value, particularly *Struthiopteris germanica* and the elegant *S. pennsylvanica*, which thrive well in a moist, shady spot. You will find this selection sufficient for your rockwork where there is moisture and shade, and very easy to grow in a good deep soil.—C. T.

ROSES,

ROSE NOTES.

This is a very busy time for the rosarian both inside and out. Roses under glass are in full growth and are constantly demanding attention if one is to keep them in good health. Whether the plants have been forced since Christmas or only allowed to come on naturally in a cool-house, there is ample work to attend to. It is during the changeable weather of this month that Roses are so often spoilt by the amateur and least experienced gardeners. The sun now often shines brightly for an hour or so at a time, and it becomes a hard matter to ventilate the house judiciously. There would be much less difficulty about this if the wind and air were not so keen. An hour of sunshine and the temperature rises with a bound, to fall again almost as suddenly when the sun is behind a cloud. I see very little fire-heat indeed during this month, generally letting the fires out early in the morning and lighting up again about six o'clock at night. By shutting the houses up early in the afternoon and damping down the walls and walks slightly, one can secure a sufficiently high temperature until the pipes are able to replace it. It is less expensive, both in time and fuel, to let the fires out during the daytime if one can manage enough heat by careful ventilation. When the house is kept up to the maximum temperature required by the use of fire-heat, it quickly gets too hot when the sun comes through the glass

hour or two. It is also quite natural for the house to be colder in the early morning than at any other time during the twenty-four hours, and the slight warmth given by stirring the fire up and then allowing it to burn out, is generally quite sufficient for Roses during the months of April and May. Slight shading will be very beneficial, and as this can easily be applied so as to merely break the glare of the sun, I find it much better to have it done in time. My plan is to mix a little whitening with skim milk, and apply this with a brush. A very thin solution will suffice during these two months, and will be found a great help in maintaining an even temperature. Much of the solar heat will be secured without the burning effect the sun has when shining through clear glass. Another advantage is the freedom with which you may use the syringes without fear of burning the young growth, and a gentle syringing during the hottest part of a bright day helps the plants a great deal, as well as moderates the temperature. When the glass is slightly shaded, it is not necessary to admit air so freely during bright weather, and this also is a great gain, because the outside air during these months is often very keen and will bring on mildew in an astonishingly short time. While the Roses are making healthy growths of considerable strength is the best time to afford them some assistance in the way of liquid-manure. It is altogether wrong to give stimulents to weakly growing, comparatively speaking dormant plants. Yet we often see this done, under the mistaken impression that the weaker subject is the one that requires it most. The exact opposite is the more correct treatment, as it is only the stronger growing plants which are able to utilise any liquid-manures to advantage. Manure-water is very apt to make the soil sour and stagnant, unless the roots of the plants are sufficiently vigorous to assimilate such food quickly. Both for healthy and weakly-growing Roses the ammonia arising from an occasional

DAMPING DOWN OF LIQUID-MANURE is very beneficial. Such assistance as this will often give the necessary impetus towards a healthy and more vigorous growth. I also find that the ammonia is useful in checking insects, and never consider that manure-water is wasted when used in this manner. Do not be afraid to let the temperature rise as high as 80 degs. or 85 degs. Fahr. in preference to admitting any keen air upon a bright day. Provided the glass has been ever so slightly shaded, you may moderate the heat and ease the plants by a gentle syringing overhead; in either case, shaded or not, you can assist them by damping down the walks and surface-soil as much as possible without sprinkling the foliage. Clear, soft water will be necessary for such syringing, and care must be taken that it is not used too cold. I would recommend that it never be colder than 65 degs. As I have frequently advised, cold air and drought at the roots must be carefully avoided, or mildew is pretty sure to attack the plants. Nothing can be more injurious than this disease, and too much care cannot be taken in avoiding it. The frequent use of a weak solution of some reliable insecticide is the finest antidote that I know of, and this will always prevent the mildew from getting so firm a hold of the plants as would otherwise be the case. Sometimes the air comes in through a chink in the weedwork or bricks, also through the corner of a broken square of glass; any foliage near to these places is often attacked with this fungoid disease. Such foliage should be removed at once and destroyed. It will also be well to stop up the holes in some way. Roses are partial to fresh air, but it must never be colder than they have been used to, nor must it come to them in the form of a draught. Sooner than this, I would keep the house entirely closed. There is also a great deal to be done in the outside rosery during April and May. The early part of April is the best month for pruning Roses in northern or cold and exposed situations, and is also the best time for the more tender Tea-scented and Noisette varieties even in warm and sheltered places, while the end of April is quite soon enough for this class if the situation be in any way exposed. Having pruned the plants, give the surface ground a light forking over again, and as soon as the eyes are pushing into growths of about 2 inches to 4 inches take the first reasonable opportunity to work the

hee among the plants. This will check any seedling weeds, and at the same time assist the plants. Soon after the plants have reached this stage—which will generally be about the end of May—they are likely to be troubled with the Rose-maggot or caterpillar. These must be hand-picked as soon as they appear. Many birds will assist in clearing off these enemies, and I have often watched the common house sparrow eating them. This bird is a great nuisance in many ways, but he has his good qualities as far as the rosarian is concerned. The strange thing to me is, that when these birds have tasted the maggots they are positively ravenous after them, and yet in some seasons they do not seem to eat them at all. R.

CLIMBING ROSES AND THEIR USES.

WHAT can be more beautiful than an Ayrshire or Evergreen Rose scrambling up the stem of some old tree, which is probably bare of branches for the first 10 feet or 12 feet from the ground-line, although its lofty head is a fine feature on the outskirts of a lawn or shrubbery? Deftly and rapidly these Roses twine and wind themselves around the rugged trunk till they reach the branches above, where, spreading and bending downwards, the clusters of flowers gracefully intermingle with leaves and branches. Climbing Roses are equally well adapted for trailing over arcades, painted iron arches, arbours, and rustic temples. For the purposes just indicated, the Ayrshire, Evergreen, and Multiflora Roses are the best, while Gloire de Dijon and Lamarque both do well on painted iron arches and trellises. They grow vigorously when well fed, often making shoots 10 feet to 12 feet long in one season. They are very hardy, and when fairly established flower most abundantly. For low fences the Hybrid China, the Hybrid Bourbon, and the strongest-growing Hybrid Perpetuals may be used; and if a wall with a south aspect requires to be covered, whether high or low, some few of the Noisette, Tea-scented, and Bankian Roses are the very best kinds that can be planted. The general management of climbing Roses is familiar to every Rose-grower. The Bankian Rose alone requires special treatment. It is common to hear of this Rose growing freely, but flowering sparingly. This is usually due to the system of pruning, very little of the latter being necessary. The gross shoots should be stepped during the growing season, and the thin wiry shoots removed early in the spring. The aim should be to obtain and preserve a goodly number of moderate-sized, well-ripened shoots, for it is such, and each only, that produce flowers. T.

ROSES ON WALLS.

ROSES may be grown almost equally well on walls at every point of the compass under favourable conditions of soil, selection, and culture. With the single exception of due north in bleak, unsheltered localities, almost all Tea and other Roses may be successfully grown on east, west, or north walls. The chief differences will be in the time of blooming rather than in the quality of the blooms, with, perhaps, the two exceptions of Cloth of Gold and Maréchal Niel. A west wall or fence will produce more perfect Roses than a south one, while the commoner Teas, such as Gloire de Dijon and Homère, will often come more perfect on a north than on a south wall. And then the variety of aspects produces such a charming succession of the same Roses throughout the year. It is always worth while growing a few Maréchal Niels on a north wall for the sake of obtaining some fine flowers in the late autumn. It is easy to protect such tender Roses as the Maréchal Niel, Lamarque, Triomphe de Rennes, Niphetos and others on north or east walls in winter, and gather such flowers as can seldom be cut from southern or western aspects. Of course, the earliest Roses from the open will be gathered from the warmest walls, but it by no means follows that the finest Roses will be gathered from the sunniest aspects. After or even before midsummer the finest Teas and other Roses are often gathered from the coolest aspects. It is, in fact, quite a relief to turn from the panting heat of the midday sun's broad glare in June to pick Tea Roses from the deep shadow of a north or the partial shade of an east

wall or fence. Such Roses as Gloire de Dijon from north walls put on new colours and more delicate forms, and are virtually new Roses as well as old favourites at new seasons and in unexpected places. Hence the season of most practical moment is that all aspects may prove best for Roses according to times and circumstances, and each will contribute to the greatest of all Rose charms, continuous supply. F.

Rose "Reine Marie Henriette" under glass.—It is only towards autumn that the deep colour of the flowers of this Rose is seen when grown in the open air, and as it is not so free-flowering at that time as in the early summer months, it is not considered a first-class Red Rose for outdoor culture. Under glass, however, it is always very highly coloured and forms one of the very best deep Red Roses we have. For early forcing there is probably no Red Rose superior to Reine Marie Henriette. It forms a particularly pleasing bud of a long and pointed shape, and each one opens into a good-sized flower, while it leaves nothing to be desired in its freedom of growth and flowering. This Rose may be treated exactly the same as Marechal Niel, and, generally speaking, it will give better results. The flowers are also a grand contrast in colour, and

out the plant altogether and replace with another. Oftentimes the second plant does well. All strong-growers are liable to canker, but Marechal Niel is about the worst.—P. U.

— The Rose is attacked with canker and will do no more good. If the young shoots are below the cankered part it may be left for a season and see what comes of it. Fere des Jardins (yellow) and Niphetos (white) are good Roses under glass.—E. H.

3561.—Marechal Niel Rose in a conservatory.—Under the conditions which you describe I think the following will be your best plan. Cut away the whole of the wood that has already flowered, and so get rid of much of the green-fly at one sweep; at the same time, you will be doing quite correct in throwing the whole of the plant's strength and energy into the young wood for next season. I expect the reason the plant looks weakly is because the flowering shoots are now over and exhausted; the severe attack of green-fly which you mention would also tend to give the Rose a weak and sickly appearance. Why allow the Rose-aphis to gain any hold upon your plants? Under glass it is so simple to steer clear of this pest, and the remedies have frequently been given in GARDENING.—P. U.

— The growth of this Rose always gets weak when it is crowded. You had better cut

the man who may have to work it. The best staff I could obtain is that of an old hand taddy rake. It is used in the following manner: First, in taking hold of the shaft give the lawn a good sweep right and left with the bottom of the board, which will cause the worm-patches to fly and sweep evenly over the surface without being unsightly, but will be beneficial in helping the growth of the Grass. A man with practice will with ease take a drift 7 feet wide, and go over a large lawn in an hour or two. The same method of working the tool will answer well also for clearing off leaves from the lawn. Keep the handle well firm in the hand; and not allow the board to wobble down first on one side and then the other.—Geo. Woodcock.

THE EDELWEISS IN DEVON.

The specimen of the alpine Edelweiss of which I sent you a photograph, and which is represented in the annexed engraving, was planted four years ago in rather poor gritty soil in a crevice between lime rock and in a sloping position with a southern aspect. This evidently suits it best. The first year there were only two small blooms on the plant, next year it had six considerably larger, and last year there were



OUR READERS' ILLUSTRATIONS: The Edelweiss in a Devonshire garden. Engraved for GARDENING ILLUSTRATED from a photograph sent by Mr. G. S. Symons, Chaddlewood, Plympton.

when grown under glass are altogether superior to those from plants cultivated in the open air. Our plants of this grand Rose make quite as strong and long growths as Marechal Niel, frequently throwing from four to seven or eight shoots 12 feet to 15 feet in length, and which flower with even more freedom than those of Marechal Niel. Where a good Red Rose is wanted, and sufficient room can be afforded, I can very strongly recommend Reine Marie Henriette, and, provided it is grown upon the long-rod system and treated the same as Marechal Niel, I am sure it will please all who give it a trial.—E.

3581.—Marechal Niel Rose in a greenhouse, &c—I should say from your description that the plant has that formidable and mysterious disease called "canker." If so, it would fully account for all you complain of. Stems often split with this disease, and one great authority informs me that the disease is caused by an overflow of sap eventually bursting the sap-vessels. No doubt this is the case in some instances, but in others it is caused by injury, followed by what seems to me to be a species of gangrene. If the young shoot you mention is below the split and cankered part, by all means cut away the remainder and leave the former to grow freely. If not, I would cut

away at once quite half of the branches right back to the stem, and shorten back most of the weak shoots on those branches left. If it is inconvenient to fumigate the conservatory for the purpose of destroying the green-fly you had better dissolve 2 oz. of soft-soap in 1 gallon of water, and the next day syringe the plant with the liquid when the house is closed at night.—J. C. C.

3332.—Worm-casts on lawns.—I have myself during many years been put to my wits' end in adopting various means to battle with this nuisance, and in most cases have failed. The weekly use of the roller makes all smooth for a few days, but still it leaves a patchy surface, and has the unneatly appearance of a person badly pitted with smallpox. The best remedy I have discovered is a very simple and cheap one—namely, procure a piece of deal board about 22 inches in length and 5 inches wide, and 1-inch thick. Then obtain a staff about 8 feet 6 inches in length, and adjust it as a handle in a slanting direction to the board, to which it should be screwed by two screws. The staff to be so adjusted that the handle end will be raised at an angle when fastened to the board of about 3 feet from the ground, or it can be adjusted higher or lower to suit the height of

eleven blooms, many of the flowers measuring from 12 inches to 14 inches in circumference round the outside edge of the points. Last year I tried some plants in another part of the rockery in richer soil and on the flat with the roots some little distance from the rock; there were numerous small blooms, but all were a dirty greyish-green in colour, a great contrast to the silvery foliage and snowy-white woollen bracts of the beautiful specimen you have engraved, and which were the admiration of all who visited our gardens during the last summer. The German name Edelweiss means "Noble White," with reference to its beautiful colour, and it is also called "Etoile du Glacier," (Star of the Glacier). When grown successfully it is certainly one of the most beautiful of alpine plants. G. S. SYMONS.

3546.—Getting rid of worms.—The lime-water was not strong enough, perhaps, or it was not applied in sufficient quantity to reach the larger worms, which lay deeper than the small ones. Place as much quick lime in water as will be taken up in suspension as it dissolves. When the lime in bulk settles to the bottom it is strong enough, or, what is more correct, the water will not contain more, therefore it is useless adding it.—S. P.

INDOOR PLANTS.

SCUTELLARIAS.

I HAVE received flowers of one of these pretty plants for a name from "A. Milne," and he says it has made his stove bright and gay since Christmas, which I do not doubt. As I find one of my readers taking a fancy to these plants, there are one or two kinds which I would recommend to his notice and advise him to add to his collection, these being much stronger growers than *S. Ventenati*, which he sends. They also produce a larger raceme of flowers, and these are much brighter in colour with longer tubes. These plants should be grown in an intermediate house, potted in loam, leaf-mould, peat, and sand, in about equal parts. They should have an abundant supply of water, and be pinched at the points pretty freely in order to make a succession of bloom. Treated in this manner, adding a little Clay's Fertiliser occasionally, these plants may nearly always be kept gay during the whole year. *S. Costaricensis*: This is a strong and robust growing plant for a Scutellaria, producing stout and long flowers which are set in close racemes. The tube is a rich crimson-scarlet, and the limb of a bright orange-yellow. The flowers are admirable ornaments in the table glasses, mixed with Ferns and other blossoms. Indeed, all the species may so be used, but the plants should not be out too hard, so as to rob the plant-house of its colour; but the fact of cutting a head occasionally helps to set the plant growing, and thus maintains a succession of flower. *S. aurata*: In this we have a very different coloured species, and it is also robust in growth; it makes, however, dense racemes of bloom, which are light-yellow in the tube and the limb orange-yellow. This is not quite such a continuous bloomer, but it flowers very freely. *S. Ventenati*: This is the most slender growing of the kinds here mentioned; but if not grown in too great a stove heat, and with a free circulation of air, it will continue to flower mostly all the season, producing racemes of a brilliant scarlet. It is a plant which is specially benefited by having its flower-spikes cut. *S. Moccisiana* is a superb kind, having very much the habit of *S. Costaricensis*, but it is not so strong in its growth, but it bears a splendid raceme of long tubular flowers, the tubes of which are a bright orange-scarlet, and the limb clear, rich yellow. No more beautiful flower can be cut for room decoration than a raceme from this species, and it produces its flowers very freely.

BLANDFORDIAS.

I AM very glad "S. S." has taken up this fine family of plants. The original one, *B. nobilis*, was introduced into this country about ninety years ago, and this is the species least seen now growing. The fact that these Blandfordias have been starved out of our gardens has caused *nobilis* and all the more recently-discovered kinds to be discarded by the majority of our plantmen, however; but anyone who has seen them doing well, as I saw them, say two years ago, when on a visit to Sir Trevor Lawrence's place, must be commended for endeavouring to grow them. "S. S." says he has got the kinds *nobilis*, *flammea*, and *Cunninghami*, and asks where he can procure more, and for some hints upon their cultivation? To answer the first part of the question, Mr. Bull and the Messrs. Veitch, of Chelsea, have been notorious for having introduced some of the most beautiful forms of Blandfordias, and you should by all means give them a trial, for in all probability they still retain some of these old favourites amongst their host of plants. Mr. Williams, of Holloway, too, has many plants, and I think also Mr. Cuthush, of Highgate, could supply some. Now for their management and cultivation, which may be said to be amongst the easiest imaginable. These plants have not been found at all in Northern or Western Australia, but they occur frequently in the hilly parts of this country from Tasmania to Queensland, growing in hoggly places on the hill sides, so that they always require to be potted in peat soil, and I have grown them well in a mixture of peat and loam, kept rather moist through the winter months, and when they begin to grow they like a large quantity of

water, so that good drainage is essential. They will succeed well under ordinary greenhouse treatment, and when they flower in the summer-time they present a magnificent sight, well deserving the attention of all. The following kinds I have grown and flowered, and I commend all to the attention of my readers.

B. nobilis.—This, although an old species, is a very desirable plant. It produces an erect stout stem, surmounted with a large terminal cluster of pendulous flowers, which are of a rich deep-orange, passing into bright-yellow at the margins. *B. Cunninghami*: A magnificent species, which was discovered many years ago by the well-known Australian explorer, Allan Cunningham, and we have to thank the Messrs. Henderson, of the well-known nurseries in St. John's-wood, now no more, for its introduction to our gardens. It has a very stout erect scape, producing a large cluster of flowers some 2 inches long, which are deep rich orange-scarlet, becoming rich clear-yellow at the tips. *B. aurea*: This kind was introduced to cultivation by the Messrs. Veitch, of Chelsea, and it is at the present time perhaps the rarest kind of all the Blandfordias in cultivation, and its flowers are perhaps the broadest. They are borne just in the same manner as the other species, drooping, and of a clear bright-yellow. *B. flammea* is another lovely plant, which first came into notice from a plant that was grown in the Dublin gardens by Dr. Mackay. This is a very strong-growing plant, the flowers large, the colour being rich deep orange-scarlet, yellow at the tips. *B. flammea princeps*: The above plant had been doubtfully referred to some of the other species, but when Mr. Wm. Ball exhibited this plant before the Royal Horticultural Society in 1875 it was at once proclaimed to be a variety of *flammea*. Like all of the Blandfordias, it has drooping bell-shaped flowers, and the colours are much the same; but in this case, instead of being orange or orange-scarlet of some shade they are here of a rich, brilliant crimson, tipped with yellow. Some few other kinds are known, and I dare say, when the interior of Australia comes to be more explored, some more beautiful kinds may be found. J. J.

Dwarf Cannas.—The dwarf French Cannas are very charming, compact in growth, and vigorous. They are excellent to grow in pots for the greenhouse and conservatory. A very bright flower, and new too, is *Progression*, brilliant orange, barred with a reddish colour. It has very broad petals, and is an excellent kind. A good point about these French mixed Cannas is their fine leafage of good colour. A few other useful varieties are: *Admiral Courbet*, the flower yellow, with red spots; *Antoine Clément*, cherry-salmon, very useful and distinct; *Antoin Crory*, crimson; *Felix Crousse*, orange-red; *Jules Christien*, carmine crimson, the leafage deep-green; *Louise Christien*, yellow, spotted with red; *Paul Bert*, the flowers golden-amber, and the leaves of a fine deep colour; and *Ulrich Branner*, rich red, shaded with orange.—C. T.

Planting Freesia bulbs.—The earlier the bulbs are potted, the more freely they will start into growth. I pot mine about the middle of August, and every bulb starts in about six weeks from that time. If potting is deferred until September is well advanced, some of the bulbs will frequently remain dormant. The main point is to give them a good roasting in a sunny greenhouse, after the foliage dies off, and pot them before the warmth of summer is gone. Loam, with a liberal addition of leaf-soil, suits them best.—J. C. B.

Rhodanthee in pots.—Both the pink and white forms of the pretty Rhodanthee are largely grown for market. Of course, these are all in 4½-inch pots. The seed is sown in January for the first batch, the pots taking the places just previously occupied by Cyclamens. It seems to be an important element in the culture of these Everlastings that the soil should be very firm, so as to induce stout, stookey growth. Were the soil too light, the plants would be apt to run tall. Seed is sown thickly, very thickly in fact, as the grower holds that it is better to have the plants too thick than in many cases so thin that many pots have to be thrown aside as useless. However, it does not seem as if the plants are unduly crowded, judging by the admirable way in which they bloom so profusely

when about 10-inches high. The selling price is not considerable, but it is a paying one all the same.—D.

3559.—Climbers for a conservatory.—There are other fine Passifloras besides *P. princps*, of which *P. Imperatrice Eugénie* and *P. quadrangularis* can be strongly recommended. Of others, beyond those you already have, *Mandevilla suevoles*, *Laelia gracissima*, *Rhynchospermum jasminoides*, *Bougainvillea glabra*, *Hoya carnea*, and, in a little shade, *Fuchsia* of almost any strong growing varieties, would all be suitable for such a structure and temperature. You might even try an *Allamanda* and a *Stephanotis* or two, as with plenty of heat and moisture during the summer both succeed admirably even where the temperature does not exceed that of an ordinary greenhouse in the winter.—B. C. R.

—*Clematis ledwica lobata* is a very good climber for a conservatory; it has white flowers, which are freely produced in spring. Roses love sunshine, but when in blossom a thin shade will keep the blooms fresher longer.—E. H.

3466.—Seedling Cyclamene.—Young plants should have for the next two months a constant temperature of not less than 60 degs. by day, with from 5 degs. to 10 degs. less at night. They should be shaded from hot sun, be kept nicely moist at the roots, and be sprinkled overhead in the morning in sunny weather. Early in July they should be put into 4½-inch pots, and from that time till October are best in a cold frame. If grown in an ordinary greenhouse temperature, keep them at the warmest end of the house and treat them as above mentioned.—J. C. B.

3580.—Carnations from cuttings.—It is not too early to take cuttings of Carnations; I began with the variety *Miss Jolliffe* and other True-Carnations in January, and continued to put them in until April. Cuttings of *Malmaison* may be put in as soon as they are ready; I had some ready in March, but had no time to put them in. They require a little bottom-heat and to be kept under close glass lights of some kind until roots are formed. It does not check the growth of the plants, nor does it in any way prevent the flowers from developing by cutting or slipping off the side-growths.—J. D. E.

—You are not likely to do very much good with cuttings so early in the year, the side shoots at present will be too seppy to root readily. Wait until August and prick your cuttings out into rich sandy soil, pressing the earth firmly round each one, then give a good watering and leave them alone.—A. G. Burton.

3555.—Palm-leaves dying.—This is a very common fault; at least, among plants of this kind in both sitting-rooms and cool greenhouses. It is caused by want of warmth and moisture in the atmosphere, and would soon disappear (at least, as regards young leaves, though there is no remedy for those already affected) if the plant could be removed for a time to a warm and moist place, such as a stove or forcing-house. Watering is, however, a most important point, and either too much or too little would soon give rise to something of the kind. In a cool temperature water should only be given during the winter and early spring when the soil becomes really dry, so that it ought never to become even "moderately wet" at all—that is to say, during the season of rest. Snip off the brown parts with a pair of scissors, leaving the ends of the leaves still pointed.—B. C. R.

3573.—Bulbs from South Africa.—Those who have friends in South Africa frequently get bulbs or plants sent over in the same way, no doubt as this correspondent has done. Through a similar source a lot of Cape roots came into my hands a few years ago, containing most of those mentioned in this enquiry, and all I can say in their favour is the garden was not much the richer for it, chiefly for the reason that they arrived at an unattractive time of year to start them. This correspondent is, however, more fortunate, as the present is a good time to commence to acclimatise them. Taking the subjects in the order named the *Watsonias* are perhaps the best known, and are supposed to be hardy if the bulbs are protected if left in the open ground, but in the West of England I could not get them to flower unless given greenhouse treatment. The *Antholyza* is not any hardier, but more easily managed, and blooms fairly well in pots. *Hemantus* (Blood-flower) is a brilliant subject when well grown. It requires careful greenhouse culture

to get the bulbs to flower satisfactorily. The *Cyrtanthus* is very similar to the *Amaryllis* in character, with large bulbs and thick fleshy leaves, but a difficult subject to get to flower. *Satyrium* (*Frog Orchis*) belong to the terrestrial Orchideae, and the varieties I had to deal with did very well in a substantial pit, but except that the flowers are curious they are not likely to reward you for the time and space they occupy. You must not lose any time in getting the whole of them potted. During the summer let them have the shelter of a frame, and in September remove all but the last mentioned to a greenhouse. Next year get them fresh potted early in March.—J. C. C.

3543.—**Treatment of Fuchsias.**—If you have the command of heat a temperature of 55 degs. to 60 degs. will start them into growth, and then by pinching they can be moulded into shape desired. Shift into larger pots as more space is required. Any good soil will do. Turfy loam and leaf mould, or very old manure, with some sharp sand, will grow them well. A moist atmosphere and a thin shade in bright sunshine during growth will be an advantage. The plants also should be kept near the glass.—E. H.

— If the plants have been neglected they will not do so well as those that have been properly cared for, but it is not easy to answer the question without more information. The size of the plants should have been stated, and what is the nature of the neglect. Fuchsias are really greenhouse plants, and I do not like a high, close atmosphere. Even small plants should be cut back a little before they start into growth; and when they have started just a little, shake them and repot into flower pots a size smaller, to be repotted again when they have made plenty of roots. They do best if placed in a light position in the greenhouse.—J. D. E.

— You do not give much information about the plants, but I presume that they have been allowed to run up and droop over, so as to look unsightly. Cut them down to a length of about 8 inches and tie them in with bast to a straight stick; keep somewhat dry until growth recommences, and then encourage with weak liquid manure twice a week. By the way, if they have been left in thumbs repot in 5-inch pots.—A. G. BURTON.

3529.—**Orange tree from a pip.**—If you shorten back the young Orange tree it will, of course, grow more bushy, and when grafted it should be cut back to encourage the graft to grow. When grafted it should be placed in a close frame till the union is complete; otherwise it will not succeed.—E. H.

3531.—**Malmaison Carnations.**—The Carnations have probably been forced too much, and this has caused the mal-formation; but it will happen occasionally, even when there has been no attempt to force them. It is not a disease at all, and the only way to prevent its occurrence is to grow the plants well, using good rich loam, and taking care that the leaves are kept free from green-fly and mildew. When the plants are in small flower pots it is a good plan to dip them in a mixture of soft-soapy-water and flowers of sulphur. This will destroy any mildew or fungoid growth as well as the green-fly. When Carnations are forced, especially at mid-winter, they should be placed up near the roof glass in the lightest possible position that can be obtained for them, and admit air as freely as possible, according to circumstances. If the insects inside the petals are thrips they are very troublesome, and make a sad mess of the flowers. The best way to get rid of these is to fumigate with Tobacco. The oldest and true *Souvenir de la Malmaison* is a beautiful bluish colour. There is a variety with pink flowers a sport from it. It is usually termed the *Pink Malmaison*. There is another sport with striped flowers, which is grown under the name of *Lady Middleton*. The crimson "*Malmaison*" is *Mme. A. Warocque*. There is no yellow *Malmaison*. I have no knowledge of the *Germanica Tree Carnations*. Are they different from the usual type of *Tree Carnations*?—J. D. E.

— Plants of this Carnation that have forced into bloom at an early period of the year often produce deformed blooms. For early blooming the plant should be layered in July, putting two strong layers in a 5-inch pot as soon as they are well rooted. By the end of the autumn the pots will be fairly filled with roots, and no more repotting will be necessary. It is when the plants are not well furnished with active roots, or are in too large pots, that imperfect blooms are produced. Too much moisture at the roots will have the same effect.—J. C. B.

FRUIT.

APPLE DUMELGOW'S SEEDLING (WELLINGTON).

The question of deterioration of this and other standard varieties need not give intending planters any uneasiness or prevent their being grown. Given an suitable soil and proper treatment, there is no fear of the ultimate result being anything but good. Near where I write there is an old orchard which contains fine old



Fruiting-branch of Apple "Dumelow's Seedling."

trees of *Ribston Pippin* that bear well and a large proportion of the fruits are large. These trees have holes at least 1 foot in diameter. In the same orchard are fine trees, quite as old, of the *Lemon Pippin*, *Dutch Codlin*, and the true old *Golden Pippin*. From these trees grafts were taken some two live or fifteen years ago, and the trees thus propagated now occupy another orchard, and are without exception in the finest health, forming a practical and conclusive reply to the deterioration theory. I quite believe that the pruning-knife has a great

deal to answer for, and that excessive pruning and the absurd system of double cropping (so called) have helped to produce canker and other evils. If fairly young trees, not too badly cankered, are allowed to have their heads, simply thinning the branches sufficiently to admit light and air and leaving them undisturbed at the roots, their improvement in their general health after a season or two will be marked. *Dumelow's Seedling* is never at its best unless allowed freedom of growth, with very little pruning more than keeping the centres of the trees clear from twigs and the main branches shapely. In common with the *Blenheim* and others, close pruning spoils all chance of a full crop. Two marked peculiarities of this Apple are the curiously speckled bark of the wood and the hammered appearance at the apex of the fruit. The tree, being a quick grower, should be allowed plenty of room to develop, a crowded orchard being especially bad for this kind. I fear that this Apple will not commend itself to those who prefer kinds which grow their own sugar, but there are others who think these latter insipid, and who prefer more piquantly acid fruit which requires artificial sweetening, and to those who think thus, one may say that *Dumelow's Seedling* or *Wellington* will beat all other late-keeping Apples for cooking. At the present time I have plenty of good *Norfolk Beauty*, but the colour when cooked is against this, so that it will not be asked for while the more attractive *Wellington* is to be had. A fruiting-branch of this fine Apple forms the subject of the annexed illustration. T.

FRUIT PROSPECTS.

NEVER in the recollection of the oldest gardener was there a better display of fruit blossom or finer weather to ensure a good set, and unless we get some very decided return of wintry weather the crop must be enormous. Of course, there are other causes of failure besides spring frosts, notably cold, cutting winds; but this year the icy chilliness we have usually experienced whenever the wind blew from north or east seems altogether absent, and the air has been quite mild, with just enough breeze to stir the pollen of the fruit blossoms, without doing any mischief. Pears and Plums have been completely covered with snowy blossoms, and *Chorrite* also beautiful. Apples are fast expanding, and give promise of a marvellous display, the bloom being not only very abundant, but remarkably fine. Old and young trees are alike crowded with flowers, even maiden trees one year from bud or graft are blooming freely. The old fallacy about planting fruit trees for the next generation to get the benefit is getting pretty well exploded, as either the trees are getting more precocious in their bearing or else the mode of pruning favours early fruitfulness. Bush fruits are remarkably full of bloom, and *Gooseberries* are already formed and fast swelling up into fruits, so that at the present rate of progress we may look for good-sized fruits at *Whitsuntide*. *Strawberries* are pushing up fine sturdy flower-spikes, and mulching the soil ought to be done at once, for drought is a great enemy to *Strawberries* and *Raspberries*, and in a fine season in light soils they need constant watchfulness to keep the roots from suffering. JAMES GROOM, Gosport.

3542.—**Angle for a cool vinery.**—An angle of 40 degs. will do very well for a cool vinery; but 45 degs. would do better, as in the latter case the action of the sun's rays is greater, which in the case of a cool vinery is an advantage. If, however, you wish to grow plants as well as Vines in the same house, the angle you mention will be best, as you will have more head room; but you will have to pay for the latter by the increased cost of the front wall or lights. I should mention that the steeper the roof of a vinery the more liable the foliage of the Vines is to get scorched, unless the structure is ventilated early in the morning.—J. C. C.

— Forty degs to 45 degs is a very good angle for a cool vinery.—E. H.

3520.—**Black Humbergh Vine.**—The Vine has been treated well, but owing to its being planted outside it has not made vigorous growth enough to produce fruit. After another year's growth it may be strong enough to do so. It would allow the following growth to run

up as far as they will go; the side-growths should be trained out, and stopped at the fifth leaf, and when the side-growths are stopped this will throw greater vigour into the leading shoots. When the Vines show fruit it is usual to stop the laterals at the first leaf beyond the bunch, stopping all other supplementary growths, and the Black Hamburg is the very best variety that would have been planted in the greenhouse.—J. D. E.

3554.—Dying Peach branches.—Dead branches should never be permitted to remain on Peach-trees. When these are cut out it is generally possible by rearranging the healthy branches to fill up the wall again with new growth. The probable cause of the presence of scale on Peach-trees is their weak state of health. The trees should have been washed when leafless and before the buds had started with Gishurst Compound, 4 oz. to the gallon of water. Blighted or blistered leaves should be pinched off.—E. H.

The Peach-tree seems to be in rather a sad plight, if there is an intention to wait until the entire side of the trees is dead before removing those that are dying. There is no reason why any branches should die upon a Peach-tree if the leaves were kept clean, and the roots in a healthy growing medium. Blight on the leaves and scale upon the wood will cause the young wood to decay, and after it is dead the sooner it is removed the better. The scale should be removed when the leaves fall in the autumn; wash them off with a brush and soft-soapy-water. Aphids on the leaves and mildew can both be destroyed by washing them with soft-soapy-water in which flowers of sulphur has been dissolved. The mixture can be applied with a syringe as soon as any of the parasites appear.—J. D. E.

3576.—Vines in a coolhouse.—The disbudding should be done as soon as the bunches are visible, leaving that showing the best bunch and removing the others. The tying down should begin before the shoots touch the glass. If the shoots are looped down as far as they bear without risking their splintering off they may be gone over a second time in weather like we have had lately in five or six days, and the final tying given in five days more. Stopping should be done as soon as the shoot extends beyond the second leaf. Two leaves are generally enough to leave. Some growers only leave one leaf beyond the bunch, but I like to have two, and should leave more if there is room without overcrowding.—E. H.

3570.—Vine culture—The temperature of the house should not be kept too high, 55 degs. by night and 65 degs. by day will be ample until the Vines come into bloom, when both can be raised 5 degs. Admit air in the morning when the thermometer rises to 60 degs by opening the ventilators at the top a little, allowing the heat to rise along with air. Do not open the front lights, except for a short time during the middle of the day when the sun is shining brightly and wind from the east is not blowing at all. Much of the trouble from mildew in Vinerias is caused by opening the front ventilators wide, thus causing a direct draught to blow over the bunches, chilling the air in the house. If the spurs are within 1 foot of each other on each side of the main rod the shoots should be disbudded to one at each spur. As a rule the bunches are visible on the new growth when this is a couple of inches long. Disbudding should take place immediately the best bunches can be seen. Pinch the point out of each side shoot two leaves beyond the bunch. Lateral growths will spring from the joints after the point is taken off. Remove these entirely below the bunch; above it allow one joint to be made first. Bend the shoots gradually down to the wires; if they are strong it will not be wise to pull them down more than an inch or so each day, or they may possibly snap off at the junction. Do not syringe the Vines at all after the bunches have formed, but moisten the paths, walls, and stages of the house twice daily, to create atmospheric moisture, which will to a great extent check the growth of red-spider, if the Vines are infested with this insidious pest. In the case, though, of wet or cold weather, the damping down process should cease for a time, to be again renewed upon a change to brighter weather. As the roots are in an outside border they may not require watering at all; so much,

however, depends upon circumstances regarding this. If the border is a raised one, unoccupied with any kind of plant and the roots near the surface, water may be required once or twice during the summer. It is, however, a good plan to mulch the surface with half-decayed horse-dung, about 3 inches thick. This prevents the moisture from evaporating from the soil so fast, keeps the surface cool, thus encouraging root action by preventing their being driven downwards in quest of moisture. The question of cropping the Vines is one of circumstances guided mainly by the health of the Vines and the weight of the individual bunches. A Vine covering 13 feet of rafter should carry 20 lb. of fruit. When the berries are the size of Peas, thinning should commence, nipping out the small berries, leaving room for those left to swell to their full size; without being unduly crowded.—S. P.

Thinning Peach and Nectarine flower-buds.—When buds on Peaches and Nectarines are few and well placed, I invariably find them set well and the fruit proportionately large. While shoots are allowed to remain crowded with buds large and small, the setting is less certain and the crowding of the flowers is against the strength of the fruit. When small and weak at first, they never attain the same perfection as selected buds, which have never been cramped for room by their fellows and had full liberty to expand on the best side of the shoots, fully exposed to sun and air. When shoots are heavily laden with buds, I run the finger up the backs of the shoots, clearing off every bud, and then the front buds are thinned a little later, so that they can be allowed all the space the fully-developed flowers require. A deal of bud-thinning can be done in a few hours. I think it was from reading Mr. Coleman's notes on Peach management that I was induced to strip the buds from the backs of the shoots in the summary manner indicated. I have thinned Peach buds always when they required it for more than a quarter of a century, and experiments frequently practised have taught me that the small amount of labour expended is highly beneficial. On our early trees this year I have had to thin off thousands of fruit after bud-thinning was practised. Some trees were left unthinned. Though heavily cropped, they have not the display of large, well-placed fruits. Thinning of wood buds is generally done as soon as they can be picked out—before the fruit-buds are much on the move. One shoot is left at the base of its predecessor to supply fruit next season, and a shoot is left as a leader at the top of the fruit-bearing one to lead up nourishment.—M.

Moisture for Apricots.—During May it is certainly advisable to give Apricots plenty of moisture and nourishment if the soil is light or porous, as it is surprising the amount of water and feeding stone fruits will take when in poor light soils. I have of late lifted my Apricot-trees every third or fourth year and given new feeding material—good loam, not rank manure. No matter how old, all have been treated in this way, and some large old trees of *hemekirk* have been removed to different positions with excellent results, as they bear large quantities of fruit and do not canker as formerly. Apricots delight in a compost with which mortar-rubble, charcoal refuse, brick rubbish, and burnt earth are largely incorporated. This material requires a lot of moisture, and as the bottom of the border is thoroughly drained, it seems as if the roots revel in unlimited supplies of moisture and feeding. As our trees are on raised borders we feed well, often giving liquid manure and mulching at this season. I find the nearer the roots of the Apricot can be kept to the surface the better, and if these are healthy there is little canker. The periodical lifting encourages this surface-rooting. The lifting is done in September before the trees shed their foliage. The roots of large trees are cut round one autumn and lifting is done the next.—H.

3567.—Sewage water.—House sewage may be profitably used for all strong-growing plants and fruit-bushes when diluted, but should not be given to any delicate plant, and it is not adapted for plants in pots in the greenhouse.—E. H.

"H. C." is quite right. Sewage water properly diluted is invaluable for the garden. I have used hundreds of gallons of it during the

past month, both for plants in pots in the greenhouse and for Apricots and other established trees in the open, and if I had sufficient I should apply it to Peas, Cauliflowers, and similar vegetable crops, also to Raspberries and Gooseberry and Currant-bushes. My Strawberries want root-melature very badly; but in my strong soil the liquid sewage causes them to run too much to leaf. In lighter ground it would benefit the crop immensely.—J. C. C.

ORCHIDS.

CYPRIPEDIUM PHILIPPENSE.

I HAVE received a flower of this plant from "J. Edmonds," asking if it is *C. Sandermanii*, and he also wishes for a few words as to its treatment? This *Cypridium* was sent home here in the first place by Mr. John Veitch when engaged in collecting Orchids for his father, about thirty years ago, or nearly so, and it was named upon its first flowering *C. levigatum*. I think it was Bateman who thus named it, but it was afterwards found to have been named before from dried specimens by Reichenbach as *C. philippense*. At first it was very rare, and it commanded long prices, and for some time this plant appeared difficult to manage, and so it remains to this day if it does not get just what it requires. Mr. Sander, of St. Albans, introduced some five years ago a very similar plant, which he called *C. Roebalinii* after the collector that sent it him, and which many people now assert to be the same plant as *C. levigatum*, but I really do think there is a varietal difference. It belongs to the same section as *C. Sandermanii*, and so does *C. Parishi*, *C. Ruthechildianum*, and one or two others that we know; but your flower appears to me to be the true form of the plant sent home by Mr. J. Veitch. This Orchid comes from one of the hottest parts of the world, and it grows naturally exposed to the full heat of the sun at nearly the level of the sea, so you may imagine it requires much heat under cultivation. I have found this plant and all the others belonging to this section thrive best in a house in which the temperature does not fall lower than about 65 degs. at any time in the year, and in the summer, of course, it will be much hotter. This and all others of the section may be potted in a similar manner to the majority of the *Cypridiums*, draining the pots exceptionally well, and as before said, keeping them in the warmest house, and also maintaining a very moist atmosphere, and well exposing the plants to the light. I know of no other matter which will tend to their welfare, saving in not overloading their roots with the soil, and the leaves should also be frequently wiped with the sponge to keep away that direful enemy, the black thrips, and in doing this take the greatest care not to break the leaves, or the remedy will be as bad as the disease. MATT BRAMBLE.

A new hardy plant—A very pretty hardy plant, introduced in 1891 from Japan by Capt. Torrens, Baston Manor, Hayes, Kent, is called *Schizocodon soldanelloides*. It is allied to the beautiful *Shortia galacifolia*, and is a plant that one would think amateurs would take to. It has been known many years, but never brought to England alive until 1891. It does not seem difficult to grow and flowers very freely, the leaves not very large, and the flower-stems are short, the flowers about as large as a farthing, prettily fringed, and of a pink colour. It makes a mass of colour with its many bright rosy-pink blooms. I do not know whether it is hardy, but it seems to like the same kind of treatment as *Shortia galacifolia*—i.e., a fairly moist soil, and will succeed well in pots. It is named *soldanelloides* from the aspect of the flowers being like that of a *Soldanella*.—C. T.

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THE KITCHEN GARDEN.

OPEN-AIR TOMATOES.

In the cultivation of Tomatoes in the open air there are two extremes to guard against—viz., the starvation treatment on the one hand, and overfeeding on the other. In inverted plants stems and leaves are certainly large, but so devoid of stamina as to easily fall a prey to disease, while the fruits do not set freely. The soil the plants are being prepared in must not be overrich upon any account, neither must the stations nor borders for planting. These latter are very often too loose and rich; consequently the plants ramble away and make a soft, immature growth. Some of the best crops of Tomatoes I have ever seen were produced from plants growing in large pots and boxes, half plunged, against a sunny south wall. This system can be strongly recommended, but there must be no lack of attention in watering and feeding, especially if a dry time should ensue. I have seen plants even when growing in this open up against south walls, where the root room

be kept growing in a fairly warm and airy structure, and be repotted into 7-inch pots as they become ready. Any neglect in potting on the plants is prejudicial to them. Exposing the plants or hardening them off too early preparatory to planting out is a poor method to adopt. The middle of May may be quite time enough to commence inuring the plants to cooler treatment by removing them to an airy pit, and by the end of the month the plants may be fully exposed, during the daytime at any rate. After this date it will depend upon the season whether they may be set out or not, but about the first week in June, or even a week later, there need be but little fear in trusting them in the open, as after planting a slight protection may be afforded for a few nights. I am much in favour of confining the plants to single stems, although I see no good reason why two, or even three, stems should not be encouraged from each plant, the main point being to keep all lateral shoots rubbed out as soon as perceived. I have certainly seen and also grown good plants fan-shaped; but it depends largely upon the season whether this form may be encouraged. During

yet invented gives the same practical results. With one exception, I think the tall-growing Peas are preferable to dwarf ones; the exception is in the case of the first early, and this is owing to the fact that in all Peas I place individual quality of the Peas in front of mere quantity. Peas are grown for flavour and not for the number borne in each pod. For a first early I prefer Cannell's English Wonder, a variety growing not more than 18 inches high. William I. may give a greater quantity of pods, but the quality of the Peas is but second rate. As main-crop sorts I prefer Duke of Albany, Duchess, and Fortyfold. The last named is not an exhibition Pea, as things go nowadays; but for supplying the table with Peas of exquisite flavour this Pea cannot be surpassed. In height it grows 6 feet in well-managed soil. The latest crop is produced by No Plus Ultra; short in the pod it may be, but good in flavour, and plentifully borne. More than this, as a mildew-resisting variety this is quite the best. Where tall stakes are a hindrance Vastor's Perfection and Stratagem are good substitutes; neither of



Tomatoes in the open air at Burleigh.

was not restricted, suffer to such an extent from the want of moisture at the roots as to cause the foliage to curl up and have a decided bluish cast. Narrow borders raised above the surface can be highly recommended, as by this method the roots are in a warmer medium, and, being partially confined, they do not ramble away, but make a firm and fruitful growth. A stout plank placed on edge about 18 inches from the wall will be sufficient space, but it must be remembered that, the root-run being curtailed, feeding and watering must not be neglected. Again,

THE SOIL provided for the plants to root in is often too rich. Some fertile loam or even ordinary soil, with a fifth of pulverised horse-manure rubbed through a sieve, with a fair proportion of wood-ashes, will form a root-run capable of supporting the plants until the fruit is well advanced. If I knew that the soil was not of a fertile nature, a little superphosphate and kainit as a source for potash would be added, and with the certainty of the plants making a satisfactory growth. We must first promote a firm growth, then feed after the plants need support, this being according to the nature of the season, soil, and extent of root-run. The plants from the earliest stage must

a favourable time it is very easy to allow a few lateral shoots to form, so as to extend the growth of the plants if needed, these being topped after a bunch or two of fruit has set. Tomatoes are essentially sun-loving plants, and they must be so grown that almost every gleam of sunshine can reach them. A good example of open ground Tomato culture is shown in the annexed illustration. A.

NOTES ON PEA CULTURE.

PERHAPS there is no other vegetable that is looked upon so favourably, apart from the Potato, as a well-developed Pea. It may be that this crop is regarded as a luxury, but it is one that gives an excellent return for labour expended. As in all matters affecting the amateur as to vegetable crops, the question of a selection of suitable varieties is the most important. Without good sorts successful results cannot be expected in the same sense as where none but those are cultivated. Tall-growing varieties are, it is well known, more productive of a crop than dwarf sorts. The reasons are obvious. The point of objection lies in the difficulty of providing stakes sufficiently tall for varieties over 3 feet high. Unfortunately, no substitute

these grow beyond 3 feet high. The Pea is one of the few vegetables that do not absorb nitrogen from the soil; therefore, to apply this chemical in the form of nitrate of soda is simply a waste. The haulm may be slightly increased in length, but the quantity of the pods is none the more.

MANURE is essential to success, but it should not be applied in the manner that some suggest—viz., digging out a trench as if for Celery, placing a thick layer at the bottom, covering it with soil, and sowing the seed thereon. The objection to this plan of cultivation is that the roots quickly find their way through the manure to the sides of the trench, which they cannot penetrate, owing to the manner in which the latter was cut out of the solid ground. The roots in this limited area of this trench quickly absorb the moisture from the manure, and in the case of a few dry days the plants are languish for more, hence mildew quickly takes possession of the haulm, and failure rapidly follows. It is much better to deeply dig the ground over in the autumn, adding manure freely then, and when sowing the seed draw out a wide drill with a hoe, allowing at least 3 inches between each Pea. In land deeply dug the roots have an opportunity of rambling away at will,

and are less liable to drought, and, consequently, are more secure from mildew. So many amateur cultivators spoil their chances of success by sowing the seed too thick; they seem to think that the thicker the Peas are laid the greater number of pods will be borne. Peas object to be overcrowded perhaps more than any other vegetable. Weak haulm means a correspondingly thin crop of pods. Space for a free development of the leaves and haulm induces also a trenching habit, which is favourable to a full crop.

MULCHING the surface soil for at least 18 inches away from the row on each side, conserves the moisture in the soil, and by the aid of frequent waterings the manurial property is washed down to the roots, which thus receive the benefit from the manure in two ways. Moisture at the roots is essential to success during dry weather. The time in watering Peas is well spent. Where mulching is practised it is doubly so. Another mistake most common is that of neglect in staking the Peas. Support directly to the tendrils are visible on the plants is absolutely necessary to success. To permit the plants to grow 1 foot high before tendering them any support, and allowing the haulm to fall on one side, thus crippling its progress at this early stage, is a practice strongly to be condemned, but, I am sorry to say, it is very common. I am not in favour of the practice of topping the points of the plants at a certain height to induce a greater crop of Peas to form by concentrating the energy of the plant into a limited number of pods, except in the case of requiring them for some special purpose, such as exhibition. I favour an extended growth up to 8 feet if the plants seem inclined to grow that much.

S. P.

3563—Manure for Potatoes.—Superphosphate of lime is an excellent fertiliser for Potatoes under any circumstances, and probably the best thing, generally speaking, that could be employed. It should be sprinkled in the drills when planting at the rate of 4 cwt. or 5 cwt. to the acre. It is also useful for Onions and other root crops, and I fancy does Peas and Beans some amount of good, but for all such it ought to be worked into the ground a few inches, and not be allowed to come in contact with the seeds. Kainit is beneficial to Potatoes on light or hungry land, but is of no use on a damp or heavy staple, or where much farmyard manure is used.—B. C. R.

3574—Forcing Seakale.—Seakale may either be forced where grown, covered with pots, which should be surrounded with warm manure mixed with tree-leaves, or the roots may be lifted when the foliage dies off, and forced in any warm place where the light is excluded. Seakale may be forced in deep boxes with close fitting lids in a warm greenhouse in any dark corner under the stage, or they may be planted 3 inches or 4 inches apart in a genial hot-bed, the frame to be closely matted up. I have used frames for this purpose fitted with wooden shutters instead of glazed lights. A bed suitable for forcing Potatoes will produce good Seakale.—E. H.

3568.—Tomatoes in a small house.—Tomatoes drop their blooms from various causes, but in this instance I incline to attribute it to an overmoist and close atmosphere, especially at night. Until the plants have a pound or two of fruit set on each it is best to keep them rather on the dry side, but when well laden water and liquid-manure may be given freely, yet not till the soil becomes moderately dry. Again, with a night temperature of 55 degs. a little air ought to be left on at the roof at night as well as by day, unless it is very stormy outside. My idea is that with so much moisture, and a high night temperature with no air on, the atmosphere becomes too humid, and this causes the blooms to drop. You can scarcely ventilate Tomatoes too freely, as long as the temperature of the house does not fall below 50 degs. Of course the plants are not shaded in any way.—B. C. R.

— Yours is a very common trouble early in the season. The cause of the flowers dropping is because the fruit did not set. The season will set this matter right as it advances; meanwhile keep the air of the house warm and dry. Maintain the same night temperature, and when the weather is fairly mild, give a little air.

at the top of the house all night. The flowers also drop off sometimes later in the season after some fruit is set, which I believe to be caused by the inability of the plants to sustain them. It has often been suggested that the flowers should be fertilised to help them to set their fruit, but I get as good crops and quite as early since I have left off doing so as I did before. As a matter of fact, I have dissected many of the flowers, and although all the parts that go to make up a perfect flower may be present, they are so placed that I cannot see how the cultivator is to manipulate upon them in a way that will assist fertilisation.—J. C. C.

3579.—Cucumber plants dying.—You have put your question so clearly that I cannot think there is much doubt about what is the cause of the plants dying off so mysteriously, as it is clearly traceable to the soil, which either engenders canker in the stem, or else it is infested with some insect that penetrates the roots of the plants, which causes them to suddenly collapse. It is one of those cases that require minute inspection of the dead plants before one could say whether the injury is caused by canker or insects. I may tell you that your arrangement of the bed of soil on a bench over hot-water pipes is just such a one where the plants would suffer for the want of root moisture; but the intelligent way in which you have stated your case does not point to that direction as the cause of the injury. I advise you to keep up a relay of fresh plants to make good any failures that occur this season, and next year to start with fresh soil obtained from a distance.—J. C. C.

3558.—Seakale from seeds.—Seakale-roots may be raised from seeds, though it is rather late for sowing now. The young plants ought to be coming up now. Sow in drills 1 inch deep and 15 inches apart. Thin the plants to 1 foot. To grow strong roots in one season requires good land and cleanly culture. Seeds sown now may produce roots for planting out next March; but they will not be strong enough for forcing. Cuttings of the roots make the best plants. The cuttings are usually taken off the roots when lifted for forcing, are laid in moist earth or sand till March, and are then planted out. The root cuttings should be about 4 inches or 5 inches long. The old roots now in boxes should be taken out and cut up and planted. They will probably make roots strong enough for forcing in boxes next winter if well cared for.—E. H.

— I raise a large number of plants from seed annually. Sow in March in drills drawn the same depth as for Peas. Sow or plant the seeds about 3 inches asunder in rows about 14 inches apart. They will grow into good-sized plants by the end of the season, but they require another season's growth before they are large enough to force. I have used a few of the larger one-year-old plants for forcing sometimes, but the heads are not the full size. The roots that have been grown in deep boxes outside may be again grown to force another year; after the heads of Kale have been cut for use, a number of shoots will start from the crowns underneath the cut part, but they ought all to be removed except the strongest one.—J. D. E.

3549.—"Pipy" Celery.—Checks of any kind will make Celery "pipy." Rank manure with the roots thrust into it is a likely cause, especially as you say you plant deep. The manure for Celery should be well decomposed, and should be forked into the bottom of the trench, and well blended with the soil. But there should always be soil enough for the manure for the Celery to be planted in without coming into contact with the manure immediately. I think sinking the bell of roots into rank manure when first planted often leads to pipy Celery and holting.—E. H.

— There is more than one cause why Celery becomes "pipy"; but more frequently than not it is through sowing the seed too early and growing on the plants in too high a temperature. For a main-crop the beginning of March is soon enough to sow the seed for the North of England, and an ordinary greenhouse warm enough to bring on the plants, and a month later does admirably for other parts. Liquid stimulants will also cause the mischief. Use a moderate quantity of rotten manure in the trenches, and give plenty of clear water in dry weather, and do not commence forcing too early.—J. C. C.

EARLY RUNNER BEANS.

THERE is much difference in this vegetable. Some people prefer the white kinds (that is, those varieties that have white blossoms) to those with scarlet flowers. For early use I prefer them, and I may be wrong, but I fancy their pods are more succulent than those of the scarlet form and other kinds in cultivation. I have grown the Giant White, and it is one of the best. Last season this variety yielded enormously, bearing very large, thick, fleshy pods of great length and of excellent quality. I had previously grown the large white, but this variety is far superior and of equal quality. I think this variety must be a selection from The Czar, as it resembles that variety in shape, but is, I consider, of better flavour. There is also another runner with white seed named Mammoth White and very much like Giant White. For exhibition the above varieties are excellent. To obtain early runner Beans is worth a little trouble, and they can be readily raised indoors by sowing in the middle or third week of April in pots or boxes in frames, and when up giving thorough exposure to get properly hardened for planting. When this plan is adopted, the runners give a lot of Beans some time in advance of those sown in the open ground. I do not mean that the scarlet-flowered varieties do not succeed as well as the white-flowered, but having tried them both together, I find the white-flowered varieties a few days in advance of the scarlet type. I know there are often failures with these Beans when sown in heat and planted out. This is owing to a variety of circumstances; many succumb to cold winds, having been improperly hardened, as Beans are extremely tender, and if sown in heat require careful management before exposing to all weathers; indeed, I think there is little gain by sowing in heat either these or the dwarf French varieties, and I prefer cold frames. If sown in 4½-inch pots in April in

A COLD FRAME, giving no water till the seed has germinated, and growing as close to the glass as possible, sturdy plants result by the second week in May, when they can be planted out in a light soil. If the ground is very heavy or of a clayey nature, it is best to prepare a suitable piece by freely using light soil for the drills. It is best for these early Beans to prepare a trench similar to that for Celery, placing the light compost on the surface in the trench for planting the Beans. When a trench is used, the Beans are sheltered from cold winds and readily protected at night by laying a few sticks across the trench to support mats or shading material, and in dry weather are more readily supplied with moisture. These Beans may be grown without any stakes. Of course, they do not yield like those staked, but for early use the pinching necessary to keep them dwarf throws them into bearing earlier, and this is important when they are required for early use. When grown dwarf, pinching the tops should take place when they have reached 18 inches to 2 feet high, and they should be planted much closer together—3 feet to 5 feet is ample. Very often in light soils, with a deficiency of moisture, the flowers drop prematurely, owing to drought, but with dwarf kinds this rarely occurs, and it is easily prevented by placing litter between the rows. Some may object to growing Runners in this way, and advise sowing the dwarf French Beans, which are most serviceable for the earlier supplies, but for summer use soon become tough and stringy, and do not continue to yield like the Runner, which will give supplies till out down by frost. I also advise the culture of the Butter Bean. This forms a pleasing novelty, is of superior quality when cooked whole, and is not tough if gathered young. G.

3323.—Treatment of Palms, &c., in jardiniere.—If these plants are growing without drainage in China bowls their roots are probably so much destroyed as to be practically useless, and for this reason it is impossible for them to thrive. The roots of all growing plants require a certain amount of air, such as can be had through porous earthenware, and also they need to get rid of standing water, which soon becomes sour and rots them. The only exception to this rule is in the case of some aquatic plants. For drawing-room decoration, plants such as Palms, Aspidistras, Ferns, &c.,

must be placed in clean pots, with excellent drainage, arranged so as to allow the free egress of water, and covered with a bit of Moss to keep the drainage from being choked with soil, which otherwise is apt to silt down into the chinks and close them. If the plants are not too far gone they had better be placed at once in pots only large enough to hold them comfortably, which can be slipped into jardinières when necessary, with a compost of two parts peat to one of loam packed firmly round them. They should then be put into a warm conservatory or hot-house, when they may, after some months, throw out fresh fronds and leaves, and in time recover their health; but if they have become shabby and the roots are in a bad way, it would be wiser to throw them away and start with fresh plants, for they will never be good for much.—
I. L. R.

GARDEN ENTRANCES.

IN reply to "G. B.," "R. H.," and others on this matter, we call attention to the annexed engraving, which faithfully portrays the entrance to the kitchen and fruit garden at Heckfield Place, Hants, during the late head-gardener's (Mr. Wildsmith's) lifetime, and is, in fact,

their parentage in part to *R. ciliatum* there is not one whose value in the greenhouse surpasses this. A specimen over 3 feet in diameter planted out in one of the beds in the large temperate-house at Kew is generally about now in its greatest beauty, the trusses of bloom being unusually large for this class of *Rhododendrons*. Owing to its rapid growth, this hybrid is of somewhat loose, but elegant habit, and to keep it in shape the longer shoots should be cut back several inches each season after flowering. It is at the same time a dwarf plant, and will probably attain no greater height than *R. ciliatum*, which is rarely more than 2 feet high. The leaves are about 3 inches long, pointed, and covered with fine short hairs. The flowers are borne in rounded trusses each from 4 inches to 6 inches in diameter, and pure white. The free-flowering qualities which are well known to be characteristic of this section of *Rhododendron* are in no instance more apparent than in this representative. Cuttings strike freely if placed in very fine sandy peat and kept close in a moderately warm case. Their growth is somewhat impeded in a young state on account of their forming a flower-bud on every branch, even when only an inch or

sized clump being placed in a pot that will admit of three-quarters of an inch of soil being placed between the roots and the sides of the pots. The pots can be stood away in any cool place free from frost, or they can be stood in the open and treated as bulbs are for forcing into bloom, by being covered with leaves and manure. When they begin to grow, all the light possible should fall upon them, and air be given on all convenient occasions to keep the plants sturdy. There should be no lack of water, and if the plants could be stood in the open and have the benefit of a warm spring shower, they would be all the better for it. The roots so adapt themselves to division that a stock can soon be worked up. A large number of roots of this perennial are annually imported from Holland.
R.

DAFFODILS FOR POT CULTURE.

I THINK it must be admitted that very little use is made of the genus *Narcissus* as compared with other groups of spring flowers, as, for example, *Hyacinths*, *Tulips*, and such like, bulbs which undoubtedly make a rich and effective display in the conservatory or greenhouse. To my mind, both these bulbs lack in a great measure the general elegance and beauty which characterize many *Daffodils*. As cut flowers, from a commercial point of view, these *Daffodils* hold a good position, or at least many of them, but as pot plants they have yet to become popular. It would, I think, materially assist to this end if the leading growers of these flowers were to make special efforts in this direction, and so let the public see that *Daffodils* are specially adapted for pot culture. True it is, we have them in endless numbers as cut flowers in the spring months, and a few occasionally in pots here and there, but nothing approaching a representative display. By reason of the present mode of arranging cut flowers of these things for exhibition, much, if not all, of their natural grace and beauty is lost. There is such a number of forms and colours, that one wonders why they are not in more general use, even if only for the sake of variety. And then, again, the majority are so readily grown in English gardens, that by exercising due care when flowering is completed, and planting them out in good ground, one may soon be possessed of a nice stock for future use. Some kinds—indeed, many—are suited to forcing earlier in the year, but I am not at the present moment referring to this so much as to endeavour to secure a more general use for these *Daffodils* as pot plants, blooming, it may be, a few weeks in advance of those in the open ground, and thereby prolonging the flowering season. Nor is this all, for it is impossible to overestimate the superiority of those flowers which are grown under glass to that of those expanding or partially so in the open ground. Dwellers near large towns know well enough that every shower of rain brings with it its quota of smut and soot, and this once upon the flower robs them of much of their purity, and defies all attempts to cleanse them afterwards. But grown under glass, even in a cold-house, all their purity may be preserved, and the flowers may be inspected at will and seen to the best possible advantage. In this way many amateurs with cold-houses could not possibly have them better occupied in the early months of the year. By flowering them, too, very near to their natural season, there would be no great strain upon the bulbs, which may be left to bloom another year in the same pots, or shifted into larger ones, as the case demands. Few kinds can display themselves to greater advantage when given this

COOL TREATMENT under glass than that noble bicolor, *Empress*. In the open ground it is, of course, a grand flower too, but the protection I have named brings out all its purity and gives it a refinement that can never be seen in the open ground. The flowers, too, are very lasting, even when fully expanded, particularly so if overhead watering be carefully avoided. The variety *Horsfieldi* is also beautiful, not so bold generally, but somewhat earlier, while a later variety may be found in *Gravées*. Three bulbs of either of these would be sufficient for an 8 inch pot, shifting into a larger size as necessary. The variety *princeps* is useful when grown in this way, and though its segments are somewhat thin and thin, it possesses a grace of its own and, indeed, is preferred by



Garden entrance at Heckfield Place, Hants.

a view of central walk leading on to the pleasure grounds. Throughout the entire length of walk there are flower borders on each side, some 4 feet in width, backed by hedges of *Lawson's Cypress*. The borders, as far as the first arch, are wholly planted with herbaceous perennials, and the trellis work over the walk is covered with *Clematises*, *Roses*, and *Honeysuckles*. Beyond the first arch are borders of much greater length, which in winter are furnished with small shrubs of various kinds, mainly Japanese *Retinosporas*, and in summer with flowers somewhat after the bedding-out form, only by mixture of plants, in preference to masses of one kind. Single and *Cactus Dahlias*, *Gladioli*, *Hyacinthus candidus*, *Herbaceous Lobelias*, *Marguerites*, *Marvels of Peru*, and large *Pelargoniums* occupy the space next to the *Cypress* hedge, the front part of borders being filled with dwarfier plants of various kinds, such as *Heriaria*, *Sedum*, *Antennaria*, and the like. We do not know a better or more effective way of laying out and planting the borders, &c., than is here given, and we recommend our querists and others to follow it out as far as their space, &c., will allow.

two high; these should, therefore, be removed as soon as formed until the plant reaches a suitable size to develop them.

DIELYTRA SPECTABILIS.

THIS *Dielytra* is very useful in many ways. It is one of our best forcing plants, and large clumps of it grown in pots or tubs are most useful for conservatories, while smaller specimens are valuable in the greenhouse for mixing with *Azaleas*, *Epacris*, *Narcissi*, and many others. It is equally valuable in the open border; it will grow almost anywhere and in any soil, and with a freedom that is most grateful. Then the roots can be divided, and if planted out in nursery-beds, soon grow into large established clumps of a serviceable character. I think the best time to divide is when the foliage begins to turn a little yellow in early autumn. When I divide, I dig out a trench, put into it some refuse soil from the potting-bench, and cover the roots with it, treading the soil firmly about them, and if the weather is dry, a good soaking of water is given after three or four days. *Dielytra spectabilis* requires a great deal of moisture, and occasionally it seems like a pail or two of soap-suds, especially so when the sun is hot. It makes a good window plant, and can be potted in September and October, a good-

Rhododendron multiflorum. Of all the numerous hybrid *Rhododendrons* which owe

some for this very reason. It is by no means a formal flower. There is one group to which I wish particularly to direct attention, and which for some reason or other is by no means popular for cutting. This is the Leedal group, probably the more chaste of all, and singularly beautiful when grown in pots for home decoration. When fully expanded, the flowers, unfortunately, do not travel well, and this may to some extent account for their not selling in the market. This fact need not exclude them from being grown as pot plants for home decoration. Very beautiful are the starchy blossoms of the type, and being sufficiently pure, I have repeatedly used flowers of this in memorial wreaths or the like. This kind should be planted more thickly together, say six bulbs for a 7-inch pot. The variety Stella is a light, graceful flower, and there are endless others among the single incomparabilis section equally well suited, and all more or less beautiful. Among the golden trumpet kinds, Golden Spar and maximus are excellent. Sir Watkin and Emperor are both first-rate kinds and very telling, possessing excellent constitutions and multiplying freely, points that must not be overlooked. But apart from all these there are the kinds usually forced in quantity, such as ornatus, obvallaris, and others, and, of course, equally well adapted to the purpose here indicated. I am not much in favour of the double kinds for pot work, for they must be staked, and in the case of the remainder I find it best to plant them as deeply as possible in the pots, as this gives better support for the leaves and stems than when the bulbs are only just buried. The variety ornatus is very liable to fall about if not just covered with soil, but if buried 3 inches deep in 8-inch pots, they stand much more firmly and a very slight support is sufficient. It is the best of this section, and being cheap, may be grown in large quantities. Quite a small bulb of this variety produces a good flower, and a dozen flowering roots may readily be accommodated in an 8-inch pot. E.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in *Gardening Illustrated* if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of *Gardening Illustrated*, 57, Southampton-street, Covent-garden, London. Letters on business should be sent to the Publisher. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as *Gardening Illustrated* has to send press notes in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in *Gardening Illustrated* should mention the number in which they appeared.

3602.—Wireworms and bulbs.—What is the best remedy for destroying wireworms without injuring bulbs?—GREENLEAF.

3603.—Forcing Rhubarb for market.—Would anyone kindly give me all particulars how to force Rhubarb for the early market?—M. B. J.

3604.—Erics after flowering.—Will anyone kindly give me directions regarding the treatment of Erics after they have blossomed in pots?—BELLFIELD.

3605.—Deutzias in pots.—Should Deutzias (flowered in pots) be cut down when out of flower, and what is the general treatment for summer?—J. WOODWARD, Stamford.

3606.—Hydrangeas for market.—Would someone please give me the names of the best Hydrangeas for market, and state how they are best propagated and grown?—M. S. J.

3607.—Treatment of Palms.—Will anyone kindly give me some information concerning Palms, and state whether they require large pots, time for potting, nature of manure, &c.?—JANU.

3608.—Double Cineraria becoming single.—Would someone kindly state what makes my double Cineraria bear single flowers this year? Last season it bore nice double blossoms.—B. E.

3609.—Watering a garden.—I shall feel much obliged if someone will kindly tell me if it would injure my garden to water it during this dry and sunny weather, with cold winds and sometimes frost at night, as my gardener tells me it would do more harm than good to apply water?—EWE.

3610.—Training Peaches.—Can Peaches on a garden wall be advantageously trained on standard wall espalier wire or wire-netting, or is there anything better and easier than nailing to the wall?—T. G.

3611.—Vines the first year.—How and when to step the side shoots? How far apart should these be? The side-shoots are about of an oval length up the rods, and with flower-bunches showing on each.—T. G.

3612.—Lime-water and worms.—Is the lime-water used to get worms out of flower-pots the clear water after lime has settled, and may it be safely used with all plants; or is there anything preferable?—T. G.

3613.—Flowers for a wall.—Will someone kindly tell me what flowers I may grow on an east-north-east wall? There is a border under the wall. Would *Pansies*, *Sweet Sultan*, *Candytuft*, *Centurion Bell*, &c., grow in such a situation?—ARMINA.

3614.—Dark spots on Tomato-leaves.—How can I prevent dark spots coming on the leaves? It appears to be a kind of fungus. The plants are growing in pots in a greenhouse entirely to themselves, full south, light and airy; no heat but the sun.—O. C. S.

3615.—Flower-pots.—Ordinary flower-pots are not very ornamental. I should feel much obliged if somebody would inform me where I can obtain pots answering the same purpose, but more ornamental and suitable to be placed on the dining-room table.—H.

3616.—Cacti from seeds.—I have some *Cacti* just come through, they are like little round bulbs about the size of a Pea, they are a notch in the top and a few little white bristles in between the notch. Is that the way they grow, or are they no good?—B. E.

3617.—Canna seed not growing.—Will someone kindly tell me why some seeds of *Canna indica* superba, planted in pots in a greenhouse, with a temperature of 55 degs., sown two months ago, have not yet shown the least signs of germination and what I should do?—W. B.

3618.—Treatment of a Myrtle.—I have a Myrtle, but I am anxious it should bloom. My treatment, I fear, is wrong. Will "J. C. G." or someone else, kindly give me a hint as to treatment? It is a fine healthy bush, and is kept in a greenhouse, but it will not flower.—J. B.

3619.—Culture of Gloxinias.—Will someone kindly give a few hints on the culture of my Gloxinias; they are now changing leaf, and when will they be likely to bloom? I have read that they flower in six months from the time of sowing the seed. Is this so?—B. E.

3620.—Anemones at Nice, &c.—Will anyone please tell me the names of the lovely double pale Pink Anemones that grow so splendidly at Nice, Cannes, and Menton, and also the names of the Double Scarlet? I also wish to know if it is now too late to plant any of them?—EWE.

3621.—Willows from seed.—Will someone kindly tell me how to raise the common Willow from seed? I know the usual way from cuttings, but I want to get some from seed, and I should like to know when they should be collected and how treated afterwards?—EWE.

3622.—Tuberoses in a hot-bed.—I have Tuberoses in a hot-bed, it has thrown up two shoots from the crown and seven or eight round the base of the bulb. Shall I take them off and leave the two on the crown; and if I pot them will they root and flower or shall I throw them away?—B. E.

3623.—Superphosphate and nitrate of soda.—I have about 1 cwt. each of superphosphate and nitrate of soda and shall be glad to know in what quantities I should now apply it to the surface soil of garden Apple, Pear, and Plum-trees, also if dry and watered in, or dissolved in water?—CORDON.

3624.—Bulbs from Capetown.—I have just received from Capetown bulbs of the following: *Amesylepis*, *Belladonna*, *Watsonia marginata*, *Lilia maculata*, *L. viridiflora*, *L. stratioides*, *Freesia africana*, *alba*, *Babiana macrantha*. Will someone please to inform me which of them will do planted in the open air?—M. K.

3625.—Hyacinths and Tulips.—I had two boxes made 4 feet long, 3 feet wide, and 2 feet deep, with holes at bottom and sides, 4 inches of clinkers at bottom, the rest potting mould. They have done very well. I should like to keep them in the boxes without moving them. Would "J. C. G." tell me whether they will succeed that way?—W. D.

3626.—Strawberry flowers.—I am anxious to know whether you can account for Strawberry blooms opening with black hearts? Does it arise from frost or disease, and can anything be done to prevent it. Last year I thought it arose from frost at the time when the blooms were opening, but at present there is great heat, and my gardener is very much puzzled so be the cause of it.—MRS. MELVILLE.

3627.—Cyclamen culture.—Would someone kindly give me a few hints on Cyclamen culture? My friend has some plants which do not do very well, the bloom is poor and the leaves do not come very large; they are stood out in the summer till time to take them in, and are kept pretty dry and potted at the proper time, and then they do not do well. Would broken manure mixed with the soil or bone-meal be of any good?—B. E.

3628.—Auriculas in pots.—Two years ago I struck some offsets of Auriculas in small pots, and last spring I had very good blooms. I then repotted the plants entire, and this year the blooms are weak and unsatisfactory. I suppose all offsets should have been taken off and struck, repotting old plants in small pots. Is this the case? In order to save trouble and produce a better show, would I answer to place several offsets together (but rooted separately) in a 5-inch pot? What compost should be used? How should varieties which are shy of producing offsets be treated in order to induce them to do so freely?—O. B. W.

3629.—Creeper for a trellis.—I shall be glad if anyone will give me a hint as to some pretty creeper, other than *Vitis*, which would do to cover a trellis at the east end of my small garden? The sun is quite shut out at the east end by trees (Limes), backed by a very lofty building. The sun never touches the part of the wall I wish to cover till it reaches south-south-west at the present time, and in the winter scarcely at all. If anyone

can suggest any creeper of such an enterprising character to be likely to succeed in such an unpromising position, I shall be very grateful if they will let me know what it is? The soil is, of course, impoverished by the roots of the Lime-trees.—CALCUTTA.

3630.—Loam for Chrysanthemums.—Is it best to sift fibrous loam after it has been well pulled to pieces through an loach sieve for potting Chrysanthemums? Is putting the rough fibre over the crooks right; or is it best to leave all the fibre in the soil? I see "E. M." in *Gardening Illustrated*, April 15th, says that it ought to be used in a rough state; but, not having used any before till this season, I did not know if there would be any harm in leaving all the fibre in, as there seemed such a lot of it without sifting it. And would "E. M." tell me where I can get blue loam on Chrysanthemums and the price? I shall be much obliged for advice.—W. D.

3631.—Climbing Roses for a house wall.—Will someone be good enough to give me the names of two or three climbing Roses of different colours suitable for planting against a house wall with a north-east aspect (on which there is little sun except in quite the early morning, in the south-western suburbs of London [neighbourhood of Wandsworth-common])? I have, I think, read somewhere that some of the old Bourbon Roses are suitable for such situations, and that *Sauvignon* is the Malmeson especially will thrive and flower well without manure; but none of the catalogues I have been able to consult seem to speak of *Sauvignon* de la Malmeson as a climbing Rose.—TYAN.

3632.—Rose "Climbing Niphotos" &c.—I shall feel obliged if someone will kindly inform me respecting the treatment of the Rose "Climbing Niphotos"? I have a plant of it grown in a border under glass since last May. It has made four shoots, 12-16 feet in length, and again these have broken into side-shoots in every direction. Two very inferior flowers bloomed about a month ago; there are two more buds now formed. Is it the height of this Rose to make wood and not to bloom? It is planted in a house where only Roses are grown. I ideal and W. A. Richardson have been discussing profusely, I generally have the climbers out back after blooming about May. Is this treatment right for the Niphotos? I have d'Or a good climbing Rose for indoor work?—L. E.

3633.—Which is the right boiler?—I should be greatly obliged if "B. C. G." or "J. C. G." or any other reader of *Gardening Illustrated* would give me advice as to the best and cheapest boiler? I mean when I say cheapest, that which requires the least fuel, as the cheapest as to the first outlay is not always the cheapest in the end. I want to heat a lean-to vinery. The piping would be about 250 ft. 4-inch. I know a few boilers such as Loughborough, Invincible, Horse-shoe, and then comes the coil, which my mind follows closely. There may be others which I know not, which may surpass even those I have named for cheapness and economy. I will just mention I have a Tortoise boiler which is only doing a third of what I shall require, so shall take out this one and add to the piping. The Tortoise has done the work fairly well, but uses a good deal of coke. The principle of it I do not like, as there does not seem enough beating surface, and much heat is lost up the chimney I think.—F. C. C.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

3634.—*Ocologyne oristata* (H. R.).—The flowers came duly to hand, but there was a particle of soot more than I have noted to be the case with any other. I have never heard that the *Chatsworth* variety is scented.—M. B.

3635.—*Cattleya Mendellii* (G. G.).—I cannot say what has caused the plant to produce such bad flowers; but, from the fact of your saying a 1st blooms upon the spikes are similar, I should be tempted to say it is through your own bad management. State treatment?—M. B.

3636.—*Madeoella Armini* (J. Fielding).—Your flower is a very fine form of this beautiful little species, the sepals being large and of a bright crimson-purple, each having a slender yellow tail nearly 2 inches long; this was introduced from New Grenada by Mr. Sandor, ten years ago, and it thrives well with the various *Odontoglossums* from the same country.—M. B.

3637.—Beef-suet-tree.—I am asked by "John Chambers" if there is such a thing? Yes, he is quite well informed; there is such a tree. Its systematic name is *Shepherdia argentea*, and it belongs to the Sea Buckthorn family. It is so called in the vernacular, I suppose, on account of the males which which the underside of the leaves are furnished. It comes from North America.—J. J.

3638.—*Cypripedium inaeigne* (E. J. B. B.).—All the varieties of this plant—and they now are very numerous—may be grown in a cold frame if kept moist, and they may be exposed to full sunshine, saving through the middle of the day. Plants thus grown will flower very late, unless they are subjected to a good heat in the autumn.—M. B.

3639.—*Dendrobium Falconeri* (Mrs. E. F.).—This appears to be the name of the flowers sent. I should like to know if this plant has little knobby stems caused by the joints being swollen? If so, it is the species named above, and is a native of Assam and Khasi. It has always been a somewhat rare plant, and some years ago it was very scarce.—M. B.

3640.—The Loakey-moth.—E. Frazer sends me a basket of eggs of this moth, asking what they are? The English name I here give; its systematic name is *Clitocampa neustria*. You had better be careful not to let your trees, and out each nest of eggs through, so as to get them off the shoots, put them into a box and so as I am doing with those sent me—that is, cremate them, for this caterpillar is one of the most destructive insects to fruit-trees. It lives in large nests upon the trees, and completely strips them of leaves; when one tree is done they migrate to another, then, of course, all the vigour and strength of the tree is expended. I do not wish to exterminate the moth, but I should like to know how to preserve them from destruction.—J. J. LEINOS AT

3641.—*Oclogyne cristata* (E. J. B. B.).—I do not know if the Chataworth variety of this plant flowers in summer or not, and if your plant is showing spikes of bloom now, it certainly will be flowering late in the spring; but are you sure they are not grown instead of flower spikes? The temperature is a sufficient one. Yes, they enjoy the sunshine, but must be shaded during the hottest part of the day.—M. B.

3642.—*Brassavola Digbyana* (A. M.).—This plant is somewhat a shy bloomer, but it has a wonderful flower, which has opened with me upon several occasions, and, if you wish it to do so with yourself, you should pot it the same manner as I have pointed out for a Leslie or a Cattleya, and grow it in the East Indian-house, and rest it in the cool end of the Cattleya-house. The plant comes from Honduras.—M. B.

3643.—*Oncidium macranthum* (G. Jones).—You should not destroy the buds on your plants simply to get the name. The two sent are not of the least use for that purpose, and you have deprived yourself of about 8 inches of flower-scape by doing so. Some six weeks hence, if you then want a name, I shall be very glad to give it; but what do you think of your deal with the buds sent? But you will perhaps be too chary of the flowers to cut them.—M. B.

3644.—*Odontoglossum Ruckerianum* (H. W.).—This is the name of the variety sent. You may be as well pleased with it as if it had turned out the true Alexander; it is a beautiful spotted form, and I have noted that these natural hybrids are freer bloomers than the kinds which we here at home designate as species. Of course it thrives under just the same treatment as the true form of O. Alexander, being found growing together, it naturally would.—M. B.

3645.—*Insect in garden soil* (John Bargiel).—The insect you sent is the grub of the common Cockchafer (*Melolontha vulgaris*). These grubs are most destructive to the roots of many plants. I cannot suggest any remedy but turning them out of the ground wherever you can find them, no insecticide of any kind. What for a plant? I flag for no apparent reason. It is always well to examine the roots as far as one can, and often one of these grubs will be found to be the cause.—G. S. B.

3646.—*Oroidiontine* (A. N.).—I am pleased to find you have been so successful in blooming *Oclogyne cristata*, especially as you appear to have so little accommodation for them. You should grow beside *Oncidium tigrinum*, *Odontoglossum Rossi majus*, *Lycaste Skinneri*, *Anulosa Clowesi*, *Maxillaria grandiflora*, and *Sophranitis grandiflora*. All these, I think, would do with you; they might want a little humouring to get them to take to your treatment, but afterwards all would be well.—M. B.

3647.—*Epidendrum fragrans* (K. J. B. B.).—Can you have this plant true to name? Why do you ask if it is a hybrid? If you have the true plant it was imported and flowered in England considerably more than a hundred years ago. You will see it figured in the *Botanical Magazine*, t. 1898, and it is found all over South America and in many of the West Indian islands. I should ascribe the cause of your plants losing their leaves either to an overdose of water or too great exposure to the sun.—M. B.

3648.—*Odontoglossum* (J. B.).—The four varieties named will all do together; they require shade such as they would get in a north house, kept very moist in the summer, but less water on the stages and floor in the winter. They must have air, but it must not be admitted so freely as to dry up the moisture, and in the winter the temperature should be kept about 48 degs; through the summer the house must be kept as cool as possible. Your other two plants require a drier and brighter atmosphere than the *Odontoglossum*.—M. B.

3649.—*Dendrobium chrysanthum* (T. James).—This is the name of the specimen sent, and no name, but I take Roloboch's authority for its being distinct. Your flower is a very good form of the species; but anemostium is a different thing, being larger, and with a deep blackish-purple velvety stain at the base of the lip. Your plant is flowering at its right season; the one you thought it to be flowers nearer midsummer. Both plants come from Burmah.—M. B.

3650.—*Oclogyne pandurata* (J. Elphinstone).—The flower you sent is of this species, either a poor variety or badly done. Perhaps you have starved the plant. I used some thirty years ago to think it was a very difficult plant to grow; but in the time we were striving for the cool system, and this plant will not put up with such treatment, it being imported from Borneo by the Messrs. Low, of Clifton, a little over forty years ago. It comes from near the coast to that country, and therefore you cannot well give it too much heat and moisture.—M. B.

3651.—*Pleione leaves turning brown* (K. J. B. B.).—I should think these plants must have been dry at the roots, or at least, must have been subjected to a very dry atmosphere, or perhaps to both. It appears to be a very bad case, and cannot but have a bad effect upon the bulbs, that are forming; but if you maintain a careful supervision over them through the season the many recover. They like sun and light, but from their thin membranous leaves it may be at once inferred they cannot stand the sunbake full upon them during the whole day.—M. B.

3652.—*Cypripedium hirsutissimum* (Miss M.).—Yours is a good coloured form of this beautiful species, which was first sold in Stevens' rooms for a new species of *Cypripedium*, many taking it for C. igneum. It was shown first by Mr. Parker, then a nurseryman at Wotton, and from this fact it was thought that he forwarded it first; but I had seen it past its best previous to this. It comes from Northern India; but I think the Messrs. Low imported their plants from Burmah, and from the richness of the colour in your flower I should think it was one out of the same batch.—M. B.

3653.—*Vanda Ameliana*.—A. N. asks me "How do you account for a plant of this species throwing up a flower spike, which, after growing a inch, and a half, suddenly stopped and gradually withered away?" Well, if the doctor comes to see you when ill, he has an opportunity to judge of your appearance, ask you sundry questions, and is able to prescribe for you; but you require me to state a case without seeing the individual, and being treated, the state of the atmosphere since last Christmas,

the temperature, or anything about it; but I should say, speaking in the dark, that the latter was too low and the former too wet.—M. B.

3654.—*Dendrobium nobile* (Tay.).—The flower you sent is a very good one as regards shape, but it is a very light coloured form. The question you ask—in what way *nobile* differs from *nobile nobiliss?*—could not have come at a better time, for I have a flower of this latter variety on hand, just in the nick of time; it measures 4 inches across, and the petals are over an inch in breadth, and the colour of the sepals and petals is deep crimson throughout, the lip large, and stained in front with a large blotch of crimson, and then comes a zone of white, the base stained with a deep blackish purple velvety blotch; magnificent is far too poor a word to use for it.—M. B.

3655.—*Dendrobium flowers fading*.—J. Butcher says: "Can you tell me why these flowers fade so quickly? I put the plants as soon as they open into the flowering-house, so that it is not used by them getting wet. No, this probably is not the case, but I know it is a common fact of the plants to move their plants into the flowering-house, which I keep much drier, under the impression that the blooms will last longer; but I have frequently said that the plants should be allowed to remain in the house where they open, and I have proved it twice without number; but the flowers should on no account be wetted with water from the syringe.—M. B.

NAMES OF PLANTS AND FRUITS.

*. Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton Street, Strand, London, W.C.

Names of plants.—Mrs. Scarlett.—Cannot name from leaves only.—A. N. H.—Send both Ferns again when trends are fertile.—Odonto.—It is one of the forms of *Odontoglossum odoratum*, coming near to the variety *hebraicum*.—B. Castle.—1, *Vanda tricolor*; 2, *Oncidium hexacolum*; 3, A form of *Maxillaria variabilis*; 4, *Odontoglossum Peseatoris*.—J. Dugan.—Specimen too much shrivelled.—C. White.—1, *Madevalia ignea*, a good ordinary form; 2, *Lycaste Harrisonii* alba; 3, *Odontoglossum giorium*; 4, *Cypripedium Boyallii*.—F. B. B.—*Rhodoendron ferrugineum album*.—C. J. A very good flower of *Dendrobium Delhoussianum*.—M. White.—Yes, it is a very good form of *Odontoglossum Ruckerianum*, but not sufficiently distinct to name.—T. W. A.—*Vanda*; 1, *Vanda Ameliana*; 2, *V. tricolor*; 3, *V. tricolor insignis*.—M. S. Douglas.—Cannot name from crumpled up leaves only.—Calan No. 13.—*Fuchsia procumbens*.—J. D.—1, *Prunus Padue*; 2, *Berberis stonophylla*.—G. T. G. R.—Looks like *Prunus Padue*, but too much shrivelled up to determine the name accurately.—X. Constant Reader.—1, *Senecioia incana*; 2, *Infundibuliform specimen*.—*Jeanette Potemayna*, *Coleyza Bay*.—*Spartanopsis africana*.—H.—*Acer platanoides*.—Robert Greening.—*Berberis stonophylla*.—Mrs. Hutton.—*Polygonum cuspidatum*.—Olney.—*Berberis stonophylla*.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

New Shop.—Apply to Mr. George Moore, Salesman, Covent-garden-market, London, W.C.—F. Oliver Hughes.—Apply to Mr. J. Groom, Seaford Nurseries, Geopfort, Hants.—A. Adcock.—The *Cineraria* leaves are attacked with the grubs of the *Marguerite Daisy-fly* (*Phytomyia affinis*), and the only thing to do is to pinch the leaves wherever the insect is seen to be at work and so destroy it. Some of the worst affected leaves had better be picked off and burnt.—Robert Greening.—The *Wallflowers* appear to be of a badly saved mixed strain. We have often seen *Wallflowers* "sport" in this way, and do not think the soil has much, if anything, to do with it.

Catalogues received.—*Choice Exhibition Pansies*, Messrs. Albert Morris and Co., Carlou, Ireland.—*Dahlia*, *Chrysanthemum*, *Bedding Plants*, &c. Messrs. J. Cheal and Sons, Crawley, Sussex.—*Catalogue of Fries*, Messrs. E. H. Krelage and Zoon, Haarlem, Holland.

POULTRY & RABBITS.

3656.—*Poultry breeding, &c.*—Will someone kindly inform me the best published authority on poultry breeding and diseases?—Marsu.

3657.—*Blood in the yolk of eggs*.—I always attribute the presence of blood spots in eggs to forcing the birds too much. First-class layers, such as *Microras*, if fed too well, are likely to overtax their egg-organs, and thus bring on some temporary derangement. In such cases it is best to feed lightly for a time, or change the birds to a fresh run, and thus check laying. When there are blood-streaks in the yolk, I should say the eggs have been sat upon, so that incubation has commenced.—Doulton.

3658.—*Poultry-keeping*.—Yes, it is much better to keep only one cock with your hens, as having several cocks would take away from the value of the eggs when required for sittings. You must not be distressed at not having many eggs at first; hens will not lay for four or five days in a fresh place. They must be given plenty of pounded mortar, or what is better still, oyster-shells, to form the shells of their eggs. Now that the winter weather is here, and there are plenty of grubs and insects about, your fowls will not need

more than two meals a day. The first meal should be soft food, scraps from the house mixed with Barley-meal or sharps, and in the evening, before going to roost, a good meal of grain, either Barley or Indian Corn. Go on feeding them till they cease to roo when the food is thrown at a little distance, but no longer, as it is then clear that they have had sufficient. It is most necessary that they should have fresh water given them every day; the vessels should be properly rinsed out at least twice a week. Yes, there are white *Minorcas*. Your white hens might possibly be *Leghorns* if they have short yellow legs, but otherwise, if their legs are brown and white, they are probably *Minorcas*.—Poka.

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GARDENING ILLUSTRATED.

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Founded by W. Robinson, Author of "The English Flower Garden."

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FERNS.

SHADING FERNS.

FROM now onwards throughout the summer months the shading of Ferns is a subject for consideration. It is a point in Fern culture that is far too frequently carried to a great excess; the inference is arrived at without due thought that just because some Ferns thrive best with shade, others also must necessarily do the same. Far from it, however, for on the whole the opposite might be said to be the case. When shading is employed, particularly if it be at all dense, the growth of the plants is in the majority of cases considerably weakened; this is further aggravated by the adoption of permanent shading during a period of dull weather. The result is a soft, flaccid growth, which in the case of such as many of the Adiantums is further seen in enlarged pinnae. This, in some instances, as in the case of *A. Farleyense*, may look very well, but it is not of such an enduring nature as one would desire. Again, where a

HEAVY SHADING is upon the plants when not required, the result is an excessive atmospheric moisture, which is not easily dispelled without additional fire-heat, simply because the temperature does not rise sufficiently high to effect this desirable purpose in the case of all Ferns, the Filices excepted. Then ensues a period of damping off amongst such stove Ferns as the *Cymogrammas* and many others where the growth is dense. *Adiantum cucurbitum*, instead of retaining its fronds intact, will under these conditions go off in the same fashion when thick and the plants themselves too much crowded together. Where permanent shading is used at all it should be of as light a character as can be employed with safety. Do not on any account smother the glass as if whitewashing a wall or a ceiling, but lay on the mixture as lightly as possible, or employ the thinnest of shading material, which is of the two the better medium. During a period of cloudy weather, but all the more so when rainy as well, the damping-down and watering require to be performed in a careful manner, with a considerable diminution of the former part of the work. If done in a perfect factory fashion, with no distinction between hot and dry weather as against the opposite extreme, it must not cause any surprise if the Ferns suffer.

FERNERIES composed of rockwork arranged in an artistic manner, with the plants turned out, are often placed in positions where shading by means of blinds is next to impossible. In such cases the shading should be of the lightest kind, if really used at all (for in some instances none need be applied). All depends upon the distance from the glass, or whether climbers other than Ferns have been allowed to drape the roof. If the house be a tall one, there will be less danger of injury from scalding, while the climber, as well as adding to the effect, also serve a good purpose in intercepting any possible ill effects from the solar rays. It is a somewhat popular notion that Tree Ferns require a considerable amount of shade, but this is a mistake in the

case of most kinds. I can point to instances where none whatever is used, and where huge plants of *Dicksonia antarctica* thrive most luxuriantly. *Cysthea dealbata* and *C. medullaris*, also *Cibotium regale* and *Alsophilla australis*, can be grown in large houses without shade with safety as long as they do not come into contact with the glass. *Dicksonia squarrosa* and a few other tender kinds are safer if shading is employed. Of the smaller growing Ferns, there are a few of the Adiantums which are very sensitive to full exposure to the sun's rays, such, for instance, as *A. trapeziforme*, *A. curvatum*, and *A. cardiochlamis*. These should always be carefully looked after. On the other hand, exposure will in many cases intensify the beautiful roseate and bronzy tints peculiar to many Ferns, particularly the

ADIANTUMS, the shades of colour of which when the plants are shaded are not nearly so beautiful. It pays to keep all such Ferns grouped by themselves, the interest enhanced in their increased beauty being ample compensation for any little additional trouble. All Ferns which are grown more particularly for decoration either as plants or for cutting should be well exposed so as to ensure an enduring growth. One often hears the keeping qualities of the Maiden-hair Fern condemned when the fault more often than not is in its management. When grown cool, well exposed to light, and in an airy house or pit, it makes all the difference between lasting and fading; more so even when the precaution is taken to immerse the fronds for a time in water before use. In a mixed fernery the taller or tree varieties will often afford sufficient shade to those which may perchance require it without resorting to any artificial means whatever. Filmy Ferns, of course, require shading. For these I would recommend to have that of a permanent character, to avoid any risk of injury either from exposure or from sudden fluctuations in temperature, the one being as injurious as the other. *Gleichenias* are not nearly enough grown; these need but little shade. So treated, their fronds are far more enduring, although not perhaps quite so large in their parts, thus making most suitable plants for decoration. Neither the *Nephrolepis* nor the climbing Ferns will bear too much exposure.

CLIMBING FERNS.

LYGODIUMS.

THESE are singularly beautiful Ferns, and very free-growing. The fronds increase in length indefinitely, and remain permanently on the plants. They abound in the eastern tropics, and extend to New Zealand. They are also found in Mexico and Brazil, and one species has been found in Florida and Massachusetts, in the northern hemisphere. Lygodiums form beautiful objects in a fernery, being extremely useful as rafter plants, for clothing pillars, &c. These plants should be potted or planted out in a mixture of light loam, leaf-mould, peat and sand, but they must have good drainage if they are to succeed. They like an abundant supply of water to the roots, and during the summer months sprinkling overhead morning and evening will

suit them admirably. This latter should not be done whilst any sun is shining upon them. The following known kinds are worthy of cultivation. *L. articulatum* is a native of New Zealand, and although members of the genus are found throughout the tropics, the present species is not found anywhere else saving on Norfolk Island. It is abundant through the Northern and Middle Island, frequently growing 50 feet and 60 feet long, forming, we are told, dense screens in the forest. The sterile pinnae are each from 1-inch to 3 inches long, rich green on the upper side, often quite glaucous on the lower side, the fertile pinnae contracted, somewhat fan-shaped. This is very suitable for the cool fernery. *L. flexuosum*: The pinnae of this are divided nearly down to the base, are 6 inches or 8 inches long, deep shining-green above, paler beneath, fertile fronds contracted, bearing the fertile spikes in close rows. This is found in many places through the Malay Archipelago, the Philippines, Ceylon, &c., and consequently requires the stove. *L. japonicum* is another species which thrives well in a cool-house, and I once saw it used as a dense leafy screen between a warm house and a cool house. It is a handsome growing plant, from Japan and various places in the East. The Japan form makes an elegant little climber. *L. venustum* has deeply lobed segments of a rich bright green. I have never seen a fertile form of this plant. *L. palmatum* is a species from North America, and is usually considered hardy; it is an interesting plant, but growers are very apt to be misled by its being called hardy. It differs from the other species in seldom making fronds more than 18 inches long, and I have never seen it with fronds exceeding 2 feet. The fronds are palmate, usually three to five or seven-lobed, the colour being bright green. The upper part of the frond for about a foot is occupied by the contracted fertile fronds. It forms a handsome plant on the rockery of the cool-house, where it will drape the rocks beautifully.

3617. — **Canna-seed not growing.** — The temperature mentioned is not sufficient to raise these plants with any degree of certainty: they require a strong hot-bed of 80 degs. or 85 degs. If the seed was thoroughly fresh and good, and had been soaked before sowing, it might, however, have germinated; but the ordinary seed of commerce is not to be depended upon—at least, such is my experience. All you can do is to take the seeds out of the soil again, and if they appear still sound, re-sow them in fresh, sandy soil, and plunge the pots in a strong bottom-heat. It is, however, very doubtful if they ever germinate now.—B. C. R.

— Some six weeks ago I bought a collection of the new hybrid Cannas. The seeds were soaked in warm water in the way I usually treat Cannas, for twenty-four hours, and were then sown in pots of warm soil in a Cucumber-house. I think we have now about half-a-dozen plants up out of 400 or 500 seeds. The conclusion I have come to is that, there being a large quantity of seeds of these hybrids, a little doctoring had been done.—E. H.

GARDEN WORK.

Conservatory.

Young, growing hard-wooded plants may have a shift now; it is well not to overdo. The drainage must be perfect, and in sufficient quantity to allow surplus water to pass away freely. All the fine half rooted plants must have good post, enough clean dead being mixed with it to keep the soil open. Firm potting is essential, and sufficient space must be left at the top for water. Most of the plants will have received what pruning was required some time ago, and the young shoots will now be making some progress; but if the pruning has been omitted better wait now till the roots are working through the new soil. All hard-wooded plants are the better for a little pruning. I generally prune Epacris and Acacia considerably; but other plants of the different genera grown are pruned more or less, as each case seems to require. Hard-wooded Heath and Azalea do not generally require pruning. All newly-potted plants should be kept a little closer for a time, and a thin shade during the hottest part of the day will be beneficial. Outtings of Abutilons and Eupatoriums may still be struck for growing on. Of course, the worm, oley pit is best for the work. Fires may be discontinued now at any rate, while the present bright weather lasts. However, the furnace and flues thoroughly cleaned, so that the fire can be lighted quickly if required. The weather still out-comes wonderfully hot and bright for the season, and plants rush into bloom and fade sooner than usual. Light shades to temper the strong heat will be drainable, unless the roof is heavily covered with creepers. Large boxes which are difficult to work blinds upon may be made quite comfortable by a free growth of climbing plants dangling about. Various in variety to use autumn-flowering subjects; mists of V. and some of them will soon root now and will make flowering to off in 6-10 pots in the autumn. This variety will do well in the shaded house, as it is as early as possible hardy. Agapanthus are now throwing up flower spikes. This old plant, when of large size, is very attractive, and might be more common, as so much can be made of it, both indoors and outside. A large mass in a tuft that will stand out on the lawn is always effective, and the abetter of a cool-house in winter is all that is required. Forced Lilacs of the candelum type will now be pretty well over, but L. Harlowe is coming into the ground in a cool conservatory. Very useful are the Stationer, when grown to a good size. Liquid-manure will increase the size of the blossoms, but it must not be used very strong. Isthemic guano or Oley's Fertiliser, half an ounce to the gallon, will be strong enough.

Unheated Greenhouse.

Those just making a start with a new house may gather all the information they can about suitable plants for walls, pillars, &c., and get them planted now, this being the best season for doing so, as the growth being made and well ripened up before winter will stand more frost. I am referring more especially now to those things which have a certain amount of tenderness in them. Many of the Chinese and Japanese plants, and some of the Australian plants, will do with only the protection of a glass roof. Tea Roses are always available for covering roofs or walls, but we do not all like the same tints, and more variety is wanted. Camellias planted in a suitable soil will flourish to a charming manner the back wall of a lean-to house. Myrtles, again, can be utilised in various ways. Lycopodium alba and rosea will be best planted in a bed of peat in a shady position. Arnoldo Donax variegata also does much better planted out in a cool-house. Give it room enough and it forms a handsome specimen.

Stove.

I am still putting in outtings of Polioceles. Where anything of a stock is required it is hardly possible to get all the outtings at once, and outtings struck now or even later will make very useful stuff (6 inch pots); besides, it is better to have some plants later in producing their heads of bracts than others. I like to see a few of the white variety mixed with the scarlet. A group of the latter, with a plant or two of the white form dropped in round the margin, heightens the effect. Caladiums will now be in splendid leafage if the syringes is used. Only soft water should be used for the least time, and give the leaves a smudged appearance that will detract from their value for decoration. There is an increased demand for those pretty-foliaged, tropical Asparagus plants, commonly called by those who do not care much about correct nomenclature Asparagus Ferns. Very pretty is A. plumosus scandens climbing up a pillar or against the back wall of a stove or any other warm house. The plants do not increase very fast by the usual methods of propagation; but seeds, when obtainable, will soon work up a stock. Pans filled with Klintonia are charming for many decorative purposes, and are easily propagated and grown to a suitable size. Panicum variegatum is useful for growing in small pots to margin shelves and stages, or to fill in round the bottom of baskets in which Ferns are planted. Outtings of the points of the shoots put in now will soon root.

Mushroom-house.

Unless the house is in a very cool position it will be better to make Mushroom-beds outside now, either placing the north side of a wall or sinking them in a trench below the ground level. A cool place is the most suitable. Make a clearance of all old beds which are exhausted, and remove the remains of Spakale roots, Rhubarb, &c. Give liquid-manure to beds still in being, and maintain a humid atmosphere by damping walls and floors.

Orchard-house.

Regular treatment will be necessary, and to make the most of the sunshine. My usual course is to take off about half the ventilation at 3 P.M. and close finally at four P.M., using the engine to give the trees a good wash at the same time. Very closely glazed houses might have a chink of air along the ridge of the house in the evening to be kept on until night, but usually more or less ventilation gets in through various openings; but under any circumstances air should be given by six o'clock in the morning, to be increased as the temperature rises till full air is on. I look upon ven-

tilation at this season as a most important item of management. Finish thinning the young shoots, and if there are more fruits on an tree than they ought to carry, when ripening, remove them at once. Why permit trees to carry a heavier load, even for a short time, than is necessary? Liquid-manure may be given now two or three times a week, and a little rich compost should be placed over the surface of the soil when the trees are in pots.

Pits and Frames.

Bedding-plants may have full exposure now during the day, but should be covered for a little longer at night. There will soon be plenty of empty pans and pots now, which may be utilised in various ways, some being planted with Tomatoes, Cucumbers, Melons, Capeloums, &c., and others prepared for growing on Cyclamens, Primulas, Clove-roses, Tree-Carnations, &c., in.

Window Gardening.

Get all window-boxes put into proper repair and painted. Where there are several sets of boxes, those intended to be filled with tender things to come in after the spring flowers are over may be covered and placed either on the greenhouse stage or in a pit or frame to grow and get strong, ready for the windows when the weather is suitable. In the windows inside the room do not keep old, useless plants. One well-formed plant is more effective than dozens of old, badly-grown subjects. This rule would apply everywhere—grow few plants, but care for them.

Outdoor Garden.

Hyacinths and other bulbs exposed to the full sunshine have been shorter-lived than usual this season, and there will probably be a chance of getting the beds prepared for the summer-bedding plants earlier than usual. When the beds are constantly cropped, more must be done in the way of manual top-dressings. The best dressing for beds from which bulbs and spring flowers have been cleared is a little earth, old manure, or old Mushroom beds well broken up will do mixed with the shared refuse from the rubbish-heap. The fine material will blend with the soil, and the roots of the plant will strike into it immediately. There is a very praiseworthy tendency nowadays to substitute hardy plants for the ornamental bedding stuff, and those who have adopted this plan find it a pleasant change. Of course, if a glare of colour is required, Pelargoniums, if the season happens to be suitable, will supply it; but in a wet time the Pelargoniums run too much to leaf and are not satisfactory. To mention only a few hardy plants suitable for massing, I will first list the Hybrid Galliardias. The plants sown outside last May will now be ready to go out, and they will commence blooming in June and continue till November. For late summer and autumn broad mass on the lawn of White Japanese Anemones has quite a distinct character, and everybody admires it. I have had masses 20 feet over that were very attractive. The red variety is also effective in its way. A mass 10 feet or 12 feet over of Lavender on the lawn is a charming object when properly managed, and it is not absolutely necessary that these groups should have a formal outline; but I think they look better when the Grass grows right up to the foliage, so that there is no bare margin. Have not space now to refer to other hardy bedding plants.

Fruit Garden.

Forced Strawberries were never better in colour or flavour than they are now, thanks to the bright sunshine; but the watering has been a very heavy business. The bright weather has enabled us to feed more liberally without doing harm. As soon as frames or pits can be opened clear, they should be washed with a good clean water, and filled with fermenting materials, and put out strong plants of Melons as soon as the temperature is right. These plants will produce ripe fruit early in August. In several ways Melons are different in their requirements to Cucumbers. They must have soil with plenty of body in it—i.e., heavy loam, and they do best in a firm root-run. Do not bury the collar in the soil over much. In dull, wet weather this may be a cause of canker. A little air early in the morning now is necessary in all fruit-houses. When panes are closed at 8 o'clock in the morning, anything will grow, and it is more sure to be trouble some. During this bright weather be very careful with the Aes. I am letting the trees go out in the morning when the sun shines bright; placing the plants between two trees is not only a waste of fuel, but it does harm, as it necessitates much labour to maintain the proper humidity to the atmosphere, and if this is neglected the red-spider will soon put in an appearance. Continue disbudbing Peaches on walls, and use the Tobacco-powder where necessary. I should recommend that all fruit-trees on which walls should be watered copiously, especially Apricots and Peaches. The position is a dry one, and the season, especially in the eastern counties, is unusually dry and hot. Look well after inside berdses of vinerias and Peaches. A more liberal supply of water will be required than is generally the case, and stimulants may be used freely where heavy crops are the rule.

Vegetable Garden.

To get up successional crops of anything in a dry, hot spring like the present, thoroughly soak the land before sowing the seeds, and shade afterwards till the seeds germinate. Seeds are sown in hot, dry soil without some preparation being taken, they will not grow all the same. Such a thing was never known before in April. One wonders where the growers' profits come from; but I suppose the hot sunbabe has rushed them on, and they must be got rid of in some way; but the jog-trot way of the past would not have produced them. I suppose the cucumber benefits—i.e., if Cucumbers may be considered a wholesome article of diet. Spare frames may be filled with Cucumbers now, placing a little warm manure in the bottom to give the roots a start. Tomatoes in cold-houses are coming on rapidly, and require a good deal of attention

in regulating and stopping growth. It is not well in crowd, especially if it is attended to only at any time to be in. In good sized houses where the rows run across the borders 2 feet apart is a good distance, and the plants in the rows will do very well at 18 inches. E. HODAY.

Work in the Town Garden.

The protracted drought and almost tropical sun renders watering a very heavy business, both indoors and out, but it must be done, for without a due supply of moisture nothing can be expected to do much good at this season. A light shade on the glass reduces the labour of watering considerably, and prevents scorching, besides prolonging the beauty of the flowers. A movable shading is always to be preferred, but falling thin, a thin coat of white or lime-wash answers the purpose fairly well. Flour and water (not paste) made rather thick, and a very little whitening added, forms a capital shading, and, if the plants are not nearly transparent, is not readily washed off by rain, but is easily removed when necessary. Out-of-doors, all trees, shrubs, and plants that have not been in the ground long, and are still but imperfectly established, must be kept well watered, or they will perish to a certainty. The morning is the best time to water now, though an overhead shower early in the afternoon will also be advisable on hot days, but though we have had no frost to speak of, here in the south, at least, for the past week or so, the plants are still cold, and under such conditions the foliage at any rate ought to be dry. Newly-laid turf also must be regularly watered until it becomes established, and where Grass-seed has been sown this also will be all the better for a good shower with the hose or engine every two or three days. Late flowering herbaceous plants, such as Michaelmas Daisys, Chrysanthemums, Christmas Roses, Pyrethrum uliginosum, &c., may still be divided and replanted, but keep moist subsequently. Thin out hardy annuals already up, and sow a last lot for late flowering. Cases of will be the best for a cool-house, such as the Cornflower, Marigold, Sunflower, Annual Chrysanthemum, and a few others will stand a lot of drought unharmed. Lose no time in sowing Asters, Stocks, Zinnias, Phlox Drummondii, &c., on open borders; these must be kept moist and have good, rich soil. Plant out shrubby Calceolarias without delay in deep, well-manured soil, and keep moist. The more forward batches of bedding plants should now be removed to cold pits or frames to be hardened off, and Dahlias also. Shift Tomatoes for outdoor planting into 6-inch pots, also any for which space cannot be found under glass at present. Pelargoniums coming into flower must have weak liquid-manure about twice a week; very the character of the fertilizer as much as possible. In the outdoor garden Acoriolas are very beautiful just now; this is the right time to sow seed in a cool frame. Tie up the stems of Carnations loosely to neat sticks. B. C. H.

THE COMING WEEK'S WORK.

Extracts from a garden diary from May 6th to May 13th.

Moved plants from a house to pits and frames to harden them off for the flower-beds; those plants which have not been out some time have been shifted a stage further on to open places where covers can be used at night. The proper hardening of the foliage has a good deal to do with their early effectiveness when placed in the beds. Plants turned out with softer foliage through being imperfectly hardened by gradual exposure will certainly suffer. Another thing that should be looked to is to prevent the roots working through the bottom of the pots into the bed in which they may be standing. If taken from such a position with the roots suddenly broken, the plants will die, and very probably the edges may turn brown. Picked off early sown Primulas, and potted off Cyclamens, Balsams, and Cockscombs. Sowed Chinerias, Rearranged conservatory. The climbers have rather stolen a march on us lately, and only a few days' delay at this season means entangled growth and extra work. Pelargoniums are now a special feature, and include a good selection of show and floral, Zonal, and those with scented foliage. These last are always popular. They add rather more than their share to the garden, and do not do much harm to the plants. After the bulk of the Pelargoniums are over will come special features in Fuchsias, Gloxinias, Achimenes, &c. This will be in addition to the usual greenhouse plants in bloom at all seasons. Tied down, stopped, and removed laterals from Vines in various stages of growth. In the early house when the Grapes are colouring the laterals will be allowed more freedom for a time. Though this may be carried too far, and by encouraging late root action prevent the Vines getting the necessary rest. Still a little more fling to the roots of sluggish Vines, or even if not sluggish, will do good if not carried too far. Apricots have set thickly under a double thickness of fishing-net, and some of the smaller where much crowded in clusters have been thinned. The fruits are quite large enough for use in the kitchen. I have had to water many things, chiefly those late transplanted, including fruit-trees, new beds of Asparagus, &c., and the Peaches and Apricots on a south wall have had a good soaking from the pond, and a light mulch placed round the trees as the position is very warm and dry, but without doing much harm to the plants. After the bulk of the Pelargoniums are over will come special features in Fuchsias, Gloxinias, Achimenes, &c. This will be in addition to the usual greenhouse plants in bloom at all seasons. Tied down, stopped, and removed laterals from Vines in various stages of growth. In the early house when the Grapes are colouring the laterals will be allowed more freedom for a time. 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TREES AND SHRUBS.

CLIMBERS FOR ARCHES AND WALLS.

CHINESE KIDNEY BEAN-TREE (WISTARIA SINENSIS).

This well-known climber is so hardy and such a rampant grower, that success seems assured by simply planting it and leaving it to take care of itself afterwards; but a little art and care bestowed upon it much improves its beauty. When the Wistaria is used for covering the side of a house or for a shade to a piazza or archway, as shown in the annexed engraving, some definite system of training should be adopted in so far as to decide what piers or columns of the piazza or archway are to be covered, and whether the plant is to be trained along the cornice or to be carried yet farther upward to screen a window. When this is done, and the necessary rods or wires have been provided, the proper shoots for the use required should be selected, and thereafter all others that may interfere with the

be treated in the same way as those of the previous year, and so on year after year. By following this course of treatment long continuous wreaths of flowers will be produced. When the leading stem or stems have reached the length it is intended they should attain they should also be stopped, and the final effect will be an orderly and trim appearance of the plant, which yet must not appear stiff and formal. Treated thus, the Wistaria may also be grown on the lawn, or as a specimen plant in the shrubbery, either on single stems or on ordinary shrubs with several stems. H.

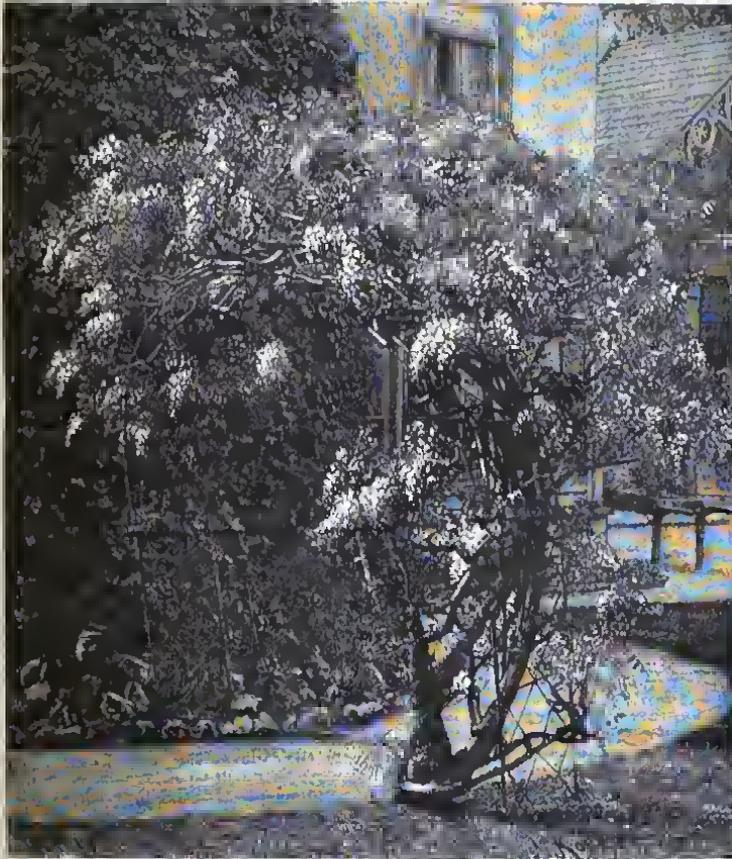
Deep coloured Flowering Currant.

—There is a variety of the Flowering Currant known as *atro-rubens*, in which the flowers are very much deeper in colour than those of the ordinary form. In *atro-rubens* both the individual blooms and the racemes in which they are borne are smaller than in the case of most of the others, but they are produced in such

others, but when the best is obtained it is a really handsome shrub. The leaves of this leaf are deeply lobed and of a glossy green tint, so that it is throughout the season very ornamental. In the whole of these *Ribes* the foliage is retained well throughout the summer, and it is rarely attacked by insects. —H.

RUBUS SPECTABILIS.

EXCEPTION is at times taken to this *Rubus* on the ground that in some situations it may become a perfect weed; but much the same remarks will apply to many other beautiful plants, the object of the gardener being as far as possible to find the spot most suitable for them where their charms can be seen to the best advantage without interfering in any way with their neighbours. The *Rubus* in question is a native of North America, and is a free, upright-growing species that from the profusion of suckers soon forms a large mass, and reaches a height of 6 feet to 8 feet. The drooping blossoms, which are borne in great numbers, are bright purple; a tint but little represented among outdoor shrubs. This *Rubus* is the first of the genus to unfold its blossoms, which open about the same time as those of the Flowering Currant, so that there are really very few shrubs then in bloom. It is better adapted for the wild garden or a spot where the conditions are unfavourable to a plant at all delicate in constitution than it is for highly-cultivated ground. This *Rubus* will hold its own in hot sandy soils, and also succeed far better than most shrubs under the shade and drip of trees. The next species to bloom after that above mentioned is *R. deliciosus*, a beautiful shrub, and one well worthy of a place among the most select. This, which is totally devoid of spines, forms a much-branched bush, clothed with lobed Currant-like leaves, and about May it is profusely laden with pure white blossoms like single *Roses*. *Rubus nutkanus*, with large lobed leaves and pure white blossoms, is another Bramble for which a place may often be found, and much the same will apply to *R. odoratus*, whose flowers are purplish. Towards the latter part of the summer the most conspicuous of all the Brambles are the two double-flowered forms, white and pink, but more especially the latter. In this, the blossoms, which are borne in great profusion, are composed of a number of closely packed quilled florets of a pleasing shade of pink colour. As they are at their best when most shrubs are over, and will succeed in soils that are of too dry and sandy a nature for many things, these Brambles well merit a word in their favour. During the winter season, when quite devoid of foliage, one species stands out quite conspicuous from any of the others by reason of the stems being of a silvery whiteness, which, associated with other things, may tend to form a striking winter picture. This Bramble is the Himalayan *R. biflorus* or *leucodermis*, a strong growing, rambling kind. T.



Wistaria sinensis on an archway.

design to be carried out should be vigorously cut away. A system of pruning nearly similar to that of the spur system in Grape-Vine pruning should then be adopted—or rather, a method combining that with the system generally adopted for fruit-trees which bear their flowers and fruits on old spurs. The Wistaria, though a climbing plant, like the Grape-Vine, produces its flowers from old spurs like a Cherry, a Plum, a Pear, or an Apple-tree. In the month of July all shoots or eyes on the main or leading stems that may be reserved should be pinched back to within a foot of the main stem in order to check the rampant growth. These shoots will again break into growth from the buds just behind where the shoot was stopped off, and after they have grown a few inches in length they should also be stopped in the same way. The result will be the formation of flower-spurs at the foot of the shoot first shortened. Early in the succeeding spring these shoots are to be cut back to within five or six eyes of the main stem, and the young shoots from these eyes are then to

numbers and are so brightly coloured, that the difference in size is only noticed on close inspection. This variety is by no means common, though it has been known for many years—indeed, it is one of the few varieties mentioned by Loudon. In making a selection of the most distinct Flowering Currants, there may be noted, in addition to the above, albidum, with large clusters of bluish-white blossoms; glutinosum, whose leaves are destitute of down, and flowers of a pinkish-lilac shade; flore-plena, very interesting and pretty on close inspection, but at a little distance it does not present any particular noticeable feature, except that it is later in flowering than any of the others. The form known as Gordonianum, which is supposed to be a hybrid between the ordinary Flowering Currant and the golden-flowered *Ribes aureum*, must have a place among the best, as its orange-red flowers are distinct from those of any of the others. Lastly, there is the golden-flowered Currant itself, some forms of which are superior to

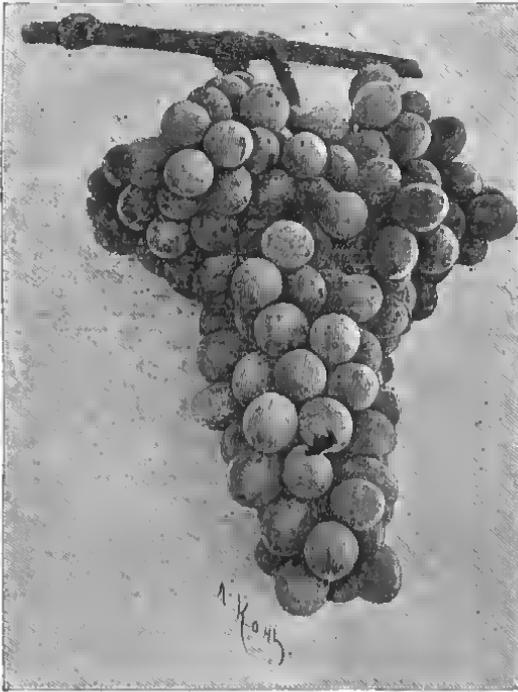
3623.—**Superphosphate and nitrate of soda.**—Although I have about 200 yards run of Cordon Apple and Pear-trees I cannot undertake the responsibility of recommending you to use either of the fertilisers you mention for the trees without I knew more of their condition than your inquiry furnishes. Not knowing how long they have been planted, or the kind of soil they are growing in, or whether they are promising to give a crop of fruit this year or not, it would be unwise to advise you to apply the manure you mention. There is no doubt your trees would be benefited if their roots had a good soaking of water this dry weather. —J. C. C.

—The former is a fine grey powder, and should be sprinkled on the soil round the trees at once, and lightly pricked into the surface with a fork. A hundredweight will be sufficient for about a quarter of an acre of ground, and unless rain comes shortly it should be well watered in. The safest and best way to use the nitrate is to dissolve it in water, 1 ounce to each gallon, and give the trees a good soaking with the solution when the soil becomes moderately dry, though, as a rule, two or three applications during the season will suffice, as this substance promotes growth rather than blossom or fruit, and if applied in excess will do more harm than good. —J. C. C. CHAMPAIGN

FRUIT.**BEST GRAPES.****MUSCAT OF ALEXANDRIA.**

THOUGH one of the oldest of cultivated Grapes, this Muscat is still at the head of the list of white Grapes in respect of both flavour and appearance. It requires a little more care and

It is mistaken economy to stint the fire if it is really needed, and during the time the bunches are lengthening out and the blossoms expanding there must be a generous warmth from 65 degs. to 70 degs. at night to make sure of the blossoms setting well. It is well also to assist the setting when the pollen grains are ripe and active, either by shaking the trellis or drawing a soft hair brush lightly over each bunch, or by



Grape "Muscat of Alexandria."

skill to bring it up to the highest possible condition as regards that beautiful amber tint of colour and high finish found in the best examples than such varieties as the Hamburgh, Alicante, and Sweetwater; but when the roots are kept within touch and the Vines treated generously, there is no special difficulty which may not be easily overcome by those who think out their position and carry out promptly the lessons taught by the changeable conditions under which gardeners have to work. By generous treatment I do not mean that the border should be lavishly manured. I believe more Vines, Muscets and others, have been hopelessly ruined by using strong farmyard-manure in the borders than by any other cause. Keep the roots in a healthy medium, and the interior management must be wretched indeed if the Grapes are not fairly good. Judging from my own experience, I should say Muscets require a firmer, heavier loam than Hamburghs to bring out their best points. That the Muscat of Alexandria has a vigorous constitution is proved by the number of old Vines still doing good work in many old gardens in this country. Given a suitable treatment, preferably partly inside and partly outside the house, not too circumscribed in extent, nor yet so large nor deep as to place the roots far away from solar warmth in summer, the growth inside to have room to strike out and not trained too near the glass, especially if the house is of modern construction—from 16 inches to 18 inches is a good distance—there should be no difficulty in obtaining good Grapes. Close stopping or pinching is not wise. There must be a good breadth of foliage, but overcrowding of young growth is ruinous. Wherever there is space to fill it will be better to disregard the orthodox advice to pinch at the first or second leaf beyond the bunch. Let the Vines occupy all the space, but do not overcrowd the leaves. In the matter of work, one good substantial leaf is better than two or three small thin ones. Again, in the application of artificial heat, do not expect the same result as the making of saving the proverbial "hearth of tan"

the adoption of any other expedient which experience teaches is best calculated to secure a good set. The annexed illustration represents a good example of a bunch of Muscat of Alexandria Grape. As regards stimulants, most cultivators use something, either in the shape of top dressing or in a liquid form, and if the horders are well made and properly drained, it pays to be liberal and generous in the matter of sustenance when the Grapes are swelling. II.

Pruning Figs.—This is undoubtedly the best time to prune Figs out-of-doors, as it can now be seen which shoots are best furnished with young fruit, these being, as a matter of course, retained. Cut as many of the old shoots out as can be dispensed with, training those retained at from 6 inches to 8 inches apart on the wall, being careful to allow sufficient room in the shrod loops for the individual shoots and branches developing themselves. By pruning the trees just as they are pushing into leaf the risk of injury through bleeding incurred when the trees are pruned at an earlier date is avoided. I have followed the above practice during the past twenty years with very satisfactory results in the way of crops. Of course, a judicious system of thinning and stopping the young growths during the growing period is essential to success. Lay in one young shoot between each pair of last or previous year's growths, stopping these at about 2 feet, and pinching all superfluous shoots hard back to allow of the light reaching those retained.—W.

3576.—Vines in a cool house.—You may begin to dishud the Vines as soon as the young growth is long enough to handle, or, in other words, it is a good plan to remove all but two shoots from each spur, finally choosing the one to remain that shows the most promising bunch of Grapes. When this shoot is brought down to the wires the other one may be removed. The object of leaving two shoots for a time is because there is some danger of their snapping off from the spur as they are being brought down. For this reason the young growth

should not be brought down to the wires all at once. In a general way Vines require to be gone over and tied down about three times. If you stop the shoots at the third joint above the bunch three ties will be ample, the last tie being given just before the flowers open. After this you must keep all the lateral growth pinched back close to the shoot below the bunch, and at one joint above that point. Do not be tempted to overcrowd your Vines because they show a good number of bunches. If you want to avoid the berries shanking, and to insure the Vines remaining in a fruitful state, one large bunch of Grapes to every foot of raftar, or two small ones, is all they should be allowed to carry. Remove ugly shoulders from the bunches, and thin out the berries as soon as they can be handled. Vines have started early this year, even in cool-houses, therefore there should be no difficulty in ripening the crop; but as we cannot tell what the subsequent weather may be, it will be wise to make good use of the sun's warmth now by closing the house early enough in the afternoon to cause the thermometer to run up to 90 degs. or 95 degs. Give a little top-air early in the morning, and damp the floor and walk three or four times a day in bright weather.—J. C. C.

3611.—Vines the first year.—Try to keep the side shoots not less than 12 inches nor more than 18 inches apart. The dishudding will have been done before this. Stop each shoot two leaves beyond the bunch. I have occasionally left three leaves where there was room enough, and I have sometimes been compelled to pinch back to one; but two leaves seems about the happy medium. Tying down to the wires must, of course, have careful attention.—E. H.

— The length at which the side shoots ought to be stopped depends very much on the space available at the side of the main rod. If the Vines are not planted nearer than 3 feet from each other, and assuming that the best bunches on the Vines shows at about the third joint of the side shoot, then the point of the shoot ought to be removed two joints above the bunch. Another guide is this: Allow as many main leaves to develop as there is space for between the main rods, but do not overcrowd the foliage. One fully developed leaf is of as much value to the Vine as half-a-dozen that is weakened by overcrowding. Therefore, in some cases it may be right to pinch the shoots above the second leaf, and in others at the third. In a day or two after stopping the side shoots lateral growths will spring from the nodes. These should be pinched at the first joint. Suhlaterals will also grow. These are best removed entirely by pinching with the finger and thumb. If the side shoots are 1 foot apart on each side of the main rod they will have then sufficient space for free development of the foliage.—S. P.

— Act on the principle of the more leaves the more roots, and therefore the more roots the Vines can make this season the stronger they will be next, is the plan I advise you to adopt. In the first place select the strongest shoots on each side of the cane and let them form five or six leaves before you pinch off the tops. The flower-bunches (as you call them) should be removed at once. If the Vines are vigorous the side shoots will form fresh growth. This must be pinched back to the first or second joint. The leading shoot on each Vine may be allowed to grow to the top of the house before you pinch off the top—unless you find the lower shoots are not making satisfactory progress. In that case stop the leader at once, and let it form another; this will divert the sap into the lower branches. If the roots are in an outside border and have not been watered, let them have a good soaking at once from a pond or open tank, and immediately after lay on a mulch of half rotten manure 4 inches thick.—J. G. C.

3610.—Training Peaches.—By the aid of stout galvanised driving-eyes, an inch long, fixed in every other course of bricks, 6 feet apart, thus having wires threaded through the holes every 7 inches or so apart, according to the thickness of the bricks, a capital trellis can be made by anyone. No. 8 galvanised wire answers well for tying the branches to. If the wall is a long one, a stout support ought to be fixed at one end, and the wall. Angle iron, an inch wide, fitted with belts and nuts, will be

necessary to keep the wires tight. The wires ought to be almost close to the wall, allowing just enough space for passing the tying material between the bricks and the wire. If a wide space is allowed the tree do not receive benefit from the warmth of the wall, but a draught is created; this is harmful to the trees.—S. P.

—Peaches can be trained on strained wire on a garden wall. 15-gauge wire will do, and it may be taken diagonally up and down the wall, so as to form diamonds. This gives greater facilities for training than if the wires are strained horizontally, though the latter will do very well for all trees except Peaches. The wires should be strained on round-headed, galvanised nails driven into the wall at suitable intervals. To make the wires form diamond pattern, the wall will have to be gone over twice, working the second set of wires obliquely in the opposite direction. The wires for Peaches should be closer than for other trees.—E. H.

3624.—Strawberry flowers.—Frozen Strawberry blossoms do open with black centres, and I have seen the same thing happen when the plants have been allowed to get very dry so as to injure the young roots.—E. H.

ROSES.

ROSES AND THE WEATHER.

WE are surely passing through one of the most extraordinary seasons for Roses that has ever been recorded. At any rate, I cannot remember anything like it before. In a recent number of GARDENING, I mentioned how I saw the White Banksian Rose in flower in the open air in the West of England at the end of March. A week later I saw in another garden that beautiful old Rose, Réve d'Or, with scores of well-expanded flowers upon it, and hundreds of buds on the point of opening. Gloire de Dijon was well in flower on warm walls in many gardens before the middle of April, and in warm, sunny corners the old Pink Monthly Rose was quite plentiful. But in my opinion Réve d'Or takes the first place as the best early flowering Rose. The plant to which I refer was, indeed, a sight worth going a long way to see, and made me wonder why people will persist in planting Maréchal Niel, which is rarely satisfactory, while there is such a reliable and beautiful variety as Réve d'Or, which grows well in all ordinary soils, and produces a plentiful crop of flowers both in the spring and autumn. As I write, the weather is tropical in character. The abnormally high temperature, and the surface of the ground as dry as dust, is not exactly the kind of weather that rosarians require, and should the present climatic conditions continue, the dates of Roses shows will have to be altered to an earlier period to meet present circumstances. At no time in my experience do I remember when Roses required the soil over their roots mulched so much as they do this season.

THE DROUGHT has penetrated so far down that only those who water freely and mulch heavily can expect to get a good show of flowers. With regard to mulching, I do not know of a better system than that practised by Mr. Baker, of Exeter, who is well known as a successful exhibitor of Roses. This gentleman gives the roots a good soaking of water first, and then covers the surface soil with a thick layer of manure, and on the manure a thin coat of earth is spread. This is obtained from between the rows of plants. Insect pests are likely to be very numerous, and none more so than the green-fly, and in this connection I must say a good word for the house Sparrow, as I know from observation that these birds consume good numbers of these insects, as only to-day I have watched them amongst my Roses and seen them go from branch to branch, clearing off the flies as they went. I am not an admirer of the Sparrow generally, because he eats my early Peas and devours my neighbour's corn; at the same time I must confess that the harm he does is balanced by the good in the number of insects that he destroys when we do not touch his appetite with young and tender Peas and ripening corn. It is, however, not advisable to wait for the birds to clear off our enemies. The simplest remedy that can be used for all Roses that are within reach is to dust the affected shoots with Tobacco-powder; but the most certain plan of killing the flies is to dip the shoots into some soapy water, or in the case of climbing plants to syringe them with the liquid.

Soft-soap, dissolved at the rate of 2 ounces to a gallon of water, will kill every insect it reaches. But neither this nor any other liquid application will be effectual if it is applied when the sun is shining or the wind blowing, as in either case the liquid would be dried up before it has time to do its destructive work. J. C. C.

CLIMBING ROSES.

FOR pelous, pillars, arches (see illustration), arbours, walls, sides of houses, and high buildings, &c., only those Roses are suitable which have more or less of what is called a climbing habit of growth. Roses which make long rambling growths, whose shoots are unable to stand up without support of some kind, these are the kinds which do duty as climbers. Before determining on the kind of climber to plant, however, the height the plants are required to attain must be considered. Most of the vigorous Hybrid Perpetuals and Teas may be relied on from 8 feet to 15 feet if the soil be good, and on warm, sheltered walls 4 feet or 5 feet higher. The extra strong growers of the same classes, with the Noisette and Hybrid Noisette, will cover well up to 15 feet or 20 feet or more. The Banksian Roses are excellent as climbers, but should only be planted against walls in rather sheltered positions; they are only summer bloomers. The white and yellow may be both relied on up to 30 feet in good soil, but the large white will run much higher. This kind is evergreen, except in very sharp winters, which is a great recommendation, but it is not so prolific in its blooming qualities as the two first-named varieties. The old Blush and Crimson China Roses will also run up the face of a wall freely to a height of 30 feet, and, as before stated, for continuous-blooming qualities they are unsurpassed by the varieties of any other family of Roses; indeed, they are frequently out at their best when inexorable frost sternly interposes and checks them; in spite of this, however, it is not unusual to find a few buds still unfolding at Christmas-time. The old-fashioned summer-blooming Roses before alluded to are capable of almost anything in the way of height; probably in good and deep soils they would climb in a very few seasons, if

and to take off unripened ends. Climbing Roses away from walls should not be planted in very exposed positions, or, as a rule, they will fail to gratify the cultivator. Climbing Roses may be used to screen unsightly buildings and other objects, by training them to galvanised wire or other fences or supports, and, except when the leaves are off, answer this purpose most admirably, by the interposition of their loveliness. All the above methods of growing these Roses not only yield good effects, but give supplies of flowers for cutting. Heretofore, however, I have not mentioned Moss Roses, because, from an ornamental point of view, in the outdoor garden, as growing plants, their value is comparatively small. As cut flowers, however, they are among the most exquisite of Florist's productions. E.

Early Roses.—"J. C. C." in his notes on Roses in GARDENING, April 22nd, page 95, mentions that several flowers of the White Banksian Rose were cut from a plant in the West of England on the 31st March. He may be interested to hear that this Rose, or rather the yellow variety, was in flower in the South of England at the same time. At Easter I was staying at Worthing, and on the Tuesday (the 4th of April) I walked through the little village of Sompting, some two miles off, which is noted for the curious Saxon tower to the church. The village lies in a very snug position at the foot of the South Downs, and on the houses I noticed the Yellow Banksian Rose in full bloom, and I have no doubt that they were so on the 31st of March. The climate of Worthing seems very suitable to the cultivation of various plants, and the amount of land in its immediate neighbourhood now covered with glass-houses is enormous, and is still increasing. From passing glances at the houses, they seemed chiefly to contain Vines, Cucumbers, and Tomatoes. The well-known Fig-gardens at Tarring, a village close by, being another proof of the mildness of the climate.—G. S. S.

3632.—Rose Climbing Niphetos.—Yes, it is the habit of this Rose to grow luxuriantly the first year and not produce many flowers, but if you have patience you will get plenty of flowers next year on the wood it is now making.



Rose arches.

well tended, any ordinary church-steeples. They completely cover themselves with blooms during the blooming period, if rightly treated, and all the treatment they require, if in good soil, consists in tying them to their supports, pruning out weak and exhausted wood, and encouraging to the utmost such vigorous young shoots as may be required. No growths need be shortened, except to keep them within the bounds allotted to the plant,

If you require large blooms the young shoots must be trained out 6 inches or more apart. Personally, I like to cut the plants back the same as you have here in the habit of doing, but I think you had better adopt the let-alone plan for one year, and see how you like it. I shall be disappointed if you do not succeed with this Rose to your satisfaction.—J. C. C. You have treated your Roses excellently, and I am glad to see that William Allan

Richardson have flowered freely with you, I can only imagine that the wood of Climbing Niphedea did not get sufficiently matured last autumn; it is a later grower than the two other varieties you name. I have found it very free blooming, but not quite so much as W. A. Richardson. You are quite correct in cutting the plants back now, or as soon as their crop of blooms are over. Reve d'Or is not one of the best Roses for indoor culture. It grows too strong, is apt to be almost evergreen, and seldom ripens under glass sufficiently to produce a full crop.—P. U.

3661.—**Climbing Roses for a house wall.**—A north-east aspect is not suitable for the better forms of Roses. Gloire de Dijon (fawn colour) will, however, do for one; Félicité Perpétué (creamy-white) is also quite hardy, and Sir Joseph Paxton (rose) is also suitable. If there is much space to cover, the Ayrshire Roses will do it sooner than those I have named, only the quality of the flowers is not so good. The best of these are Dundee Rambler (white) and Splendens (flash colour). The Garland (fawn) is one of the Maak Bease, and a capital grower. You are right about the character of Souvenir de la Malmaison in so far that it will thrive and flower without much sun; but it is not a climbing Rose, and, therefore, not adapted to your purpose.—J. C. C.

I am afraid "Tyro" will scarcely be successful in growing Roses on a north-east wall, and so near to London. Souvenir de la Malmaison is not a climber, but, like almost all Roses, it can be used as such for low walls, &c. If "Tyro" means to try a few Roses I can recommend the following as being those most likely to suit his position and locality: Cheshunt Hybrid (red), Gloire de Dijon (buff), Sir Joseph Paxton (red), Coupe d'Hébé (pink), Madame des Tartas (red), Boule de Neige and Coquette des Blancches (white), while the best yellow is likely to be Tour Bertrand.—P. U.

ORCHIDS.

LÆLIA ELEGANS.

Blossoms of two or three varieties of this plant come to hand from "G. Ellis," and I would here caution my readers about sending flowers, and it should be borne in mind that blooms cut on Saturday morning, packed in a dry wooden box, are not delivered until Monday morning, and they lay, consequently, a day and night in the office in London, which does not add to the lustre of their flowers, so, once for all, I would say do not send me flowers either home direct or to the office on Saturday, especially if you want an opinion respecting them. My present contributor wants to know if I do not consider one of these a good dark variety of elegans, but I cannot so flatter him that it is a dark variety at all; but it is certainly a very dark-lipped and good form of the light varieties, the sepals and petals being flushed with rose, and the whole front lobe being of a dark crimson-maroon. The other two flowers are fairly good varieties of the typical form, and which are usually seen blooming at this season. Now such forms as L. præstata, L. Morreniana, L. Bromeaana, and L. Turneri and some others which I could name, and which I have seen so fine in the Woodlands collection at Streatham, all seem to flower in the autumn months, and these light varieties mostly open their blooms in the spring and early summer. This Lælia is supposed to be of hybrid origin, and certainly I do think from the variability in the plant there is much ground for the supposition; but then there are some forms called elegans which I do not think have anything to do with that plant, for, irrespective of colour, there is so much difference in the shape of the lip, an item I have always looked upon as being of special importance; for instance, there are L. Wolstenholmie and L. Schilleriana, which some consider as merely forms of elegans, but which would appear to me to be totally different. But I hope my friend, Mr. Seden, will soon set the minds of us all at rest by letting us see what he can raise by cross-breeding under artificial means. Well, all I can say further to "G. Ellis" is that the flower sent is a very good one; but it is not a dark variety. It should be potted, as I have so frequently told my readers, in good peat fibre and some chopped Sphagnum, and the pots must be well drained, and the plants should stand at

the hottest end of the Cattleya-house, because they like a good deal of heat when they are growing, and also a moist atmosphere, and they do not like to be dried very much in their resting season either.

MATT. BRAMBLE.

THE WHITE MOTH ORCHIDS, WITH A NOTE ON PHALÆNOPSIS APHRODITE.

THE flower sent by "A. Calder" is a great beauty, and I am not surprised that my friend has obtained this under the name of P. amabilis. Now this is one of the errors made in naming the plant when it first flowered in this country, which occurred in the then celebrated nursery of the Messrs. Rollisson's, at Tooting, and it was mistaken by Dr. Lindley for P. amabilis, which had been known to science some time previously, and so the mistake was perpetuated in our gardens; but the true amabilis is the plant which is generally known in our gardens as P. grandiflora, and for its introduction we are indebted to the Messrs. Veitch, of Chelsea, who had it sent to them when at Exeter by Lobb, and from the plant specimens have been sent by "Mr. Calder." It is distinguished by its larger and lighter green leaves and by its usually larger flowers, and in the shape of the lip. P. Aphrodite has oblong, deep-green leaves, which beneath are of a deep purplish hue, and flowers of a pure white, the lip also being white, more or less marked with purple at the base and marked with yellow. It is a magnificent plant when done well, and it keeps a very long time in perfection; indeed, the flowers will last far too long for the well-being of the plant and should, therefore, be cut, after, say, a month or six weeks are past, by which means the plant is relieved of the severe strain put upon it by the large amount of blossoms, which have been called white Moth-flowers. Now, how to grow these plants successfully is one of the reasons why "Mr. Calder" has written to me, in order that I may enlighten him somewhat. Well, this is always a delightful task, and one in which I sometimes am successful, as letters, which I from time to time get from my readers, testify. Well, to grow Phalænopsis is very simple and very easy, requiring only a little care and attention. The first thing I contend for is a house which has ground for the floor instead of stone or a concrete pavement, because then there is a gradual moisture from the earth always arising which is highly beneficial to the plants. This may be planted sparsely with dwarf Ferns or other low growing plants. The house should also have plenty of piping, so that in cold weather, when artificial heat has to be depended upon entirely, there need not be any hard driving of the fire. Shading must be carefully attended to, and the sun should never be allowed to shine upon the plants, although I like the house to face the south. Well, now I think everything that is necessary has been said about the house, saving, perhaps, the ventilation, and this must be good. The temperature should never fall below 65 degs. at any time. The plants may be grown in baskets or in pots. I like the former the best if they are substantial, and, therefore, would advise these to be of earthenware, shallow, and well drained; and for soil use just a very little Sphagnum Moss over the roots. This must be taken particular notice of, as upon this matter so much depends. Combined with the above instructions, a moist atmosphere should always be maintained, as without this black thrips become the worst pest that can befall a grower of these plants. I subjoin some of the more popular kinds beside the one, P. Aphrodite, named here.

P. AMABILE, which is the old plant popularly known as P. grandiflora, flowers large pure-white, stained at the base with yellow. P. Luddemansia: Flowers medium-sized, ground colour yellowish-white, thickly marked with bright purple transverse bands, lip bright-purple. P. Marie: This is a lovely gem, the grand colour being yellowish-white, handed with chestnut-brown; the lip is rich, deep purple. This was introduced by Messrs. Veitch and Sons, of Chelsea, but we have to thank the Messrs. Low, of Clapton, for rendering it comestible to the majority of growers. P. Schilleriana: This is just like a rosy-pink P. Aphrodite, a real gem. There are several forms of this plant, all of which are really worth careful attention. P. Schilleriana: This species

was first introduced to German gardens, and it flowered for the first time under cultivation just thirty-three years ago. I have frequently had hundreds of flowers of this plant expanded at the same time, which gives one a very good opportunity of marking their variations. In an ordinary way the flowers are rosy-purple, and the three-lobed lip is also of a bright purple, with a yellow crest, which is spotted with red, and instead of the long, slender tendrils this plant has a lip resembling the tail of a black cock, and, besides, it has beautifully-spotted leaves. D. Stuartiana: This is thought by many to be a natural hybrid, having spotted leaves like Schilleriana and a flower of the same shape. It, however, has white flowers, having the lower half of the sepals spotted with reddish-purple. All these plants are natives of the Philippine Islands and others in the Indian Ocean. Other fine kinds are Sumatrana, violacea, speciosa, tetraspis, Lowi, and many other smaller species, including many varieties, but all require about the same treatment.

MATT. BRAMBLE.

3630.—**Loam for Chrysanthemums.**—If the loam is passed through an inch mesh sieve before using it for potting the plants into 3-inch and 4-inch pots the work is much facilitated, as pieces of turf that will not pass through a sieve of the mesh named are useless for potting into these small pots. If the turf is chopped well first with the edge of a spade it is easily passed through the sieve, and without the loss of any of the fibres. In placing the plants in 5½-inch pots I do not recommend that it be sifted, but chopped sufficiently fine. When dealing with the final potting into 9-inch and 10-inch I sift all the loam that is of a heavy, retentive character, but this time a sieve with ½-inch mesh is used. My reason for this is that heavy loam is more liable to become inert, and consequently less porous, when the fine soil is left also along with the fibrous parts. Instead of pulling it to pieces I chop it with a spade into pieces 2 inches square. Lots of fine soil is sure to be present even in doing this much. The ½-inch sieve relieves the knobs of the fine soil, and thus the compost maintains its porosity better. When placing the plants in all pots, except these in which they are to flower, I employ a portion of the roughest parts of the compost for covering the rocks. In the case of the last potting, though, I use pieces of freshly-cut turf in addition entirely to the compost. By this means the latter is not robbed of its rough parts, and cannot become non-porous in the same way, as though it were all fine soil.—S. P.

3602.—**Wireworms and bulbs.**—The simplest and best way of getting rid of wireworms from among bulbs is to lay baits of something which they are fonder of than the bulbs, and to examine the baits three or four times a week, and kill the wireworms. Wireworms are very fond of the seeds of French Beans. I have scooped little holes in the borders, and dropped in half-a-dozen Beans, just covered them with soil, and marked the site with a small stick. In two or three days the wireworms, if they are numerous, will swarm in the Beans, and may be pulled out and destroyed. Other good baits are slices of Carrots and Potatoes. Persecution will certainly clear them out.—E. H.

3312.—**Lime-water and worms.**—Lime-water is not injurious to any kinds of plants except Ericas and Azaleas. These, as a rule, are not troubled with worms nearly to the extent that others are, owing to the compost being composed mainly of peat. Lime-water is of the right strength for use when the water will not absorb any more lime, but allows it to sink to the bottom, after that it is useless to add more. Do not pour the sediment from the bottom of the vessel on to the soil in any case.—S. P.

Lime-water should be used for plants in pots. It will be better not to give it to Camellias or Azaleas, as they dislike lime. Lime-water need not be used if one wishes to get rid of worms on lawns, as the clear lime-water is not so strong as in the first instance, before some of the lime has been deposited. There is nothing safer than lime-water.—E. H.

Getting rid of worms.—Lime-water, if used of sufficient strength, will get rid of worms. If one wishes to get rid of worms on lawns, as the clear lime-water is not so strong as in the first instance, before some of the lime has been deposited. There is nothing safer than lime-water.—E. H.

OUTDOOR PLANTS.

THE "EMPEROR" DAFFODIL.

This, one of the best and boldest of all the yellow Daffodils, was raised from seed by the late Mr. W. Backhouse, of St. John's, Wokingham, many years ago. To the same raiser we also owe the Empress Daffodil, and both were figured in the old *Floral Magazine*, wherein we are told that they were the results of crosses between *N. bicolor* and other forms of *N. pseudo-Narcissus*. Both *N. Emperor* and *N. Empress*, quite apart from the size and beauty of their flowers, are robust in constitution, and as a rule they thrive well on nearly all soils, bearing flowers at least a third larger than those represented in the engraving. The perianth lobes of *N. Emperor* are of a soft pale-yellow with a deeper golden trumpet, the whole flower being of stout substance and of the texture so well illustrated by the accompanying woodcut. Even although this fine free-growing kind has been in some points surpassed of late years by such fine seedling kinds as are *Gloire de Leyden* and *Weintraut*, yet for general garden culture it still remains one of the most distinct and effective of all good garden Daffodils. Like most other Daffodils, *Emperor* grows best in pure, deep tarry loam resting on gravel or other well-drained bottom. Nothing in the way of freshly added or crude manures should be given, but this variety and some other garden seedlings do well if planted in succession to a crop for which well-rotted manure was used.

PERENNIALS FOR BEDS.

1853.—There are a large number of things suitable for the purpose, and I have made a selection; but I advise you to get Robinson's "Hardy Flowers," which may be obtained at 37, Southampton street, W.C.; it deals fully with hardy plants for bedding, and gives hints for appropriate contrasts. Carnations would make a fine bed, but it is late now to put them out. A good bed of the brighter self-coloured flowers is one of the sweetest pictures one can get in a garden. Then you could select the *Treacle Lupine* (*Lupinus polyphyllus*) and its variety *alpinus*, both of which grow about 3 feet in height. The type has pleasing blue flowers, produced in summer, and those of the variety *alpinus* are white. The two planted together make an attractive contrast in colour. A fine bed would be made of the various kinds of Lily, the earlier blooming forms, such as the peculiar *Scarlet Turk's-cap*, *L. chalcedonicum*, the brilliantly-coloured *L. croceum*, *L. davuricum*, and its varieties, which seldom grow more than 2 feet in height, and *L. candidum*; but the majority are rather too tall for your purpose. Very charming is a good bed of *Pentstemon*, and they will live through ordinary winters without harm. When

in full bloom a bed of these is graceful and showy, as the flowers are produced freely. *Campanula persicifolia* (blue) and the variety *alba* are two good kinds, each about 2 feet in height, and very beautiful when in perfection. A glorious bed could be made of *Lobelia fulgens*, selecting such varieties as *Firefly* and *Queen Victoria*; the flowers of each are very bright crimson in colour, the spikes tall, and the leafage dark bronzo-chocolate, a rich contrast of colour. A good bed of either variety would be very rich,

it grows from 18 inches to 2 feet in height, and is sometimes known as *R. speciosa*. *Helenium pumilum* is another good hardy plant for a bed. It was used effectively massed together last year in the Royal Gardens, Kew; the plant is hardy, easy to grow, and about 18 inches in height, being covered in the summer and early autumn months with a mass of golden-yellow flowers, each about 2 inches in breadth. A lovely flower for a distinct bed is *Anemone japonica alba*, or *Honorine Jobart*, the flowers appearing in late summer and lasting in beauty until the late autumn. It is a mass of pure-white, and gives plenty of bloom for the house without destroying the beauty of the bed. A good deep rich soil and ample moisture are the chief considerations. It need not be disturbed for several years, but allowed to develop in beauty without a common plan of constantly interfering with the roots. I like the white kind by itself, but you may have the rose type for contrast if you care for the association of colour. A good selection of double *Potentilla* make a show of colour, and a few varieties, such as *William Rollison* (scarlet, shaded with brilliant orange-yellow), *Le Vesuve* (vermilion, the petals with a golden edge), *Melpomene* (bright-yellow, with a shade of orange-scarlet), *Victor Lemoine* (deep-vermilion colour with golden blotches), and *Hamlet*, (velvety-brown, an intense colour, as amongst the more attractive.) The *Delphiniums* make a fine display, and these flowers have been greatly improved of late years, some of the newer kinds having spikes of hold flowers, each blossom of fine shape, colour, and size, the colours very deep and effective. A good bed of them would be very fine, but the plants grow to a considerable height, four or five feet, even more. A very beautiful bed could be formed of the best varieties of *Tufted Pansies*, which bloom throughout the summer, until the autumn in fact. *Archie Grant* (deep violet-purple), *Sky-lark* (white, edged with blue), *Ariel* (mauve, shaded with white), *Blue Cloud* (white, with a broad edge of blue), *Bullion* (bright-yellow, very free), *Countess of Hopetoun* (pure-white, very compact and free), *Countess of Kintore* (bluish colour, the edging brown and pink-white), and *Holy-wood* (deep blue). *Iris germanica* in variety would perhaps be too fleeting for you; but while they last the flowers are very fine, and give off a delicate Elder-like fragrance. A good bed may be made of the *Pyrethrums*, especially the double kinds, and a small selection would comprise *Andromeda* (purple-rose), *Aphrodite* (pure-white, very pleasing), *Aurora* (sulphur, the centre yellow), *Haage et Schmidt* (deep-rose), *Melton* (very bright-rose), *roseum plenum* (rose and white), and *Transcendent* (rich crimson). Then a bed may be well devoted to the early-flowering *Herbaceous Phloxes*, which grow, rising from 1 foot to 2½ feet in height; they bloom freely, and bear flowers richly of fine shape and colour. C. T.



OUR READERS' ILLUSTRATIONS: *Narcissus "Emperor."* Engraved for GARDENING ILLUSTRATED from a photograph sent by Mr. J. D. Pearson, Chilwell, Notts.

and the flowers appear in July, the height of the plants being about 2 feet. *Centaurea montana* and its varieties may be taken note of, as they are very bright and showy, the flowers ranging in colour from pure-white to deep-purple, and they last a considerable season in beauty. A bright, showy flower is *Coreopsis lanceolata*, and also *Rudbeckia Newmannii*, which bloom rather late in the season, but produces a wealth of rich yellow flowers, very rich against the centre cone of almost black colour

3552.—**Flowers for a grave.**—As the soil is so heavy and clayey, it would be well to mix with it a barrowful or so of leaf-mould, burnt garden refuse, and fine ashes, before putting in the flowers, or they will not do well. A pretty edging might be made with summer-flowering *Ferret-me-Not*, nice sturdy little plants being used, with a tuft of *Golden Feather* between each if preferred. There are few more beautiful objects on a grave than *White Madonna Lilies*, but these must be sunk, pot and all, if wanted to flower this spring. *Gibber-wise*, a clump of these roots can be transplanted best in July (just after they have done blooming), and left untouched from year to year, when they will form a very handsome group. *White Tea Rose* (*Niphotes*, specially) are also suitable, but these, too, must be sunk, pot and all, at the present time, and can be planted permanently in October. *White Marguerites* may be used for the centre, with *Pansies*, *Mignonette*, and *Ivy-leaved "Geraniums"* round them. These last can be allowed to droop over the soil, covering it, with the other plants, completely. Of course there are many more brilliant flowers, such as *Scarlet "Geraniums"* and *Begonias*, which would make more show, but they are not in good taste here. *Lilies of the Valley*, and a few simple spring bulbs, such as *Snowdrops*, *Sollia sibirica*, and *Crocuses*, can be substituted for the summer plants in October. *Windflowers*, too (*Anemones*), can then be put in, and an edge of *Primroses* put in the place of the *Golden Feather*, with fresh plants of *Ferret-me-Not*. All these will flower in early spring. The plants now put in will require careful watering and shading for some time, if this drought continues.—I. L. R.

— I should think that you cannot do better than select bedders, such as the *Tuberous Begonias*, and if the grave is not very large, or a little additional expense is no object, the white-flowered kinds would be most appropriate. The plants could be put out about the end of next month, and they will keep up a show until out off by frosts; or you could get various colours, as the flowers vary from the deepest crimson to the purest white. The habit of the *Tuberous Begonia* is so dwarf that the plants would look well in such a position. Then there is the useful *Zonal Pelargonium*, which keeps a gay appearance throughout the summer with little attention. I should have some such arrangement as this: *Tuberous Begonias*, with the variegated *Dactylis* and *Blus Lobellias*, or you could have a fine show of *Tufted Pansies*, which will continue in bloom throughout the summer, and make a change from *Pelargoniums*. All these will succeed in the position mentioned, whereas the annual flowers—at least, the majority of them—require more sun, and they are apt to get ragged and unsatisfactory unless constantly attended to. In the autumn you could plant spring flowers, as *Daisies* and *Primroses*, with a careful selection of choice bulbs. You will then get a succession of bloom quite early in the year until frosts cut off the summer flowers.—C. T.

3544.—**Narcissus flowers dying off.**—This may be due to the bulbs being weak, or the position being quite unsuitable, but more likely through want of lifting. It is impossible to get satisfactory *Daffodils* if the bulbs are left undisturbed too long, and in many cases they are not divided for several years, and then complaints are rife they will not bloom satisfactorily. I should advise you to lift them as soon as the leafage has died down; divide them, and replant again early in the autumn in good deep soil. Once in every two years is the time to lift *Daffodils*, and they are really better for being lifted every year, as is the practice with the large growers for market. You must remember that the more robust varieties increase very fast, but otherwise they will gradually cease to bloom, and die. Possibly yours are in this condition, and require timely attention. Do not lift them until the foliage has died down.—C. T.

3545.—**Dahlias.**—Four good show Cactus kinds are *Juarazi*; *Mrs. Hawkins*, the flowers of a sulphur colour, the margin paler; *Henry Patriok*, pure white; and *Panthea*, reddish-salmon in colour, good Cactus-like shape. When showing *Cactus varieties* always have flowers of characteristic form, not like the so-called decorative half show and half Cactus.

Four show *Dahlias* would comprise *Mrs. Glodstone*, the colour very delicate bluish; *Harry Keith*, rose-purple; *R. T. Rawlings*, fine yellow; and *Glowworm*, orange-scarlet. As regards the fancy kinds, you cannot do better than select *Gaiety*, the flowers yellow, with stripes of red, and tipped with white; *Frank Pearce*, rose-coloured with stripes of crimson; *Mrs. Saunders*, yellow, the petals tipped with purple; and *Pelican*, pure white, with stripes of purple. Your other question is greatly a matter of taste. I have chosen of the Cactus kinds *A. W. Tait*, pure-white, and *Cochiseal*, rich-crimson, in which there is a tinge of brown; of the *Pompon*, *E. F. Juaker*, amber, and *Lelia*, red-buff colour, the petals tipped with white; and of the single class, *Duchess of Albany*, delicate mauve, the edge tinted with orange-red, and *Maudie*, pure-white, maroon edge. Get the mauve with the white or yellow, and the crimson with the same two colours, keeping crimson away from the mauve. A good idea would be to mass the crimson in the centre, yellow round it, then white, then mauve.—C. T.

Oorydalis nobilis.—This is a distinct and extremely taking rock plant. It is, I think, the handsomest of all the *Fumitorias*, of a robust habit, and yielding always an abundance of its striking flowers. It rarely exceeds 1 foot in height; the strong flower-stems, leafy to the top, rise from a mass of bright-green, Fern-like foliage. The flowers are of a rich golden-yellow, with chocolate spots on the lip. It is invaluable for damp spots in the rockery or border, and does best in a light free soil, to which has been added plenty of rotten leaves. It may be increased by division. *C. solida* is also in flower now, but neither so showy nor striking as the above. It forms curious tuberous roots, from which spring the leaves and flower-stems. The flowers are of a dull purple colour. This species should be planted in the woods. It is already naturalised in some parts of England, and as it stands both drought and shade well, I find it useful for planting near the trunks of deciduous trees, &c.—G.

3620.—**Creeper for a trellis.**—I should recommend *Berberis stenophylla*. It will do well in the shade, is always pretty, and grows freely on wall or trellis.—E. H.

INDOOR PLANTS.

3605.—**Deutzias in pots.**—Yes, it is usual, though not actually necessary, to cut these plants down rather hard as soon as the bloom is past, and then encourage a fresh growth from the base, to flower the following season. Market growers, who want plants in small (5-inch) pots only, cut their plants down almost to the soil after flowering, and encourage a vigorous growth afterwards by means of plenty of warmth and moisture. This being well ripened in the autumn flowers profusely the following season. If, however, large specimen plants are wanted, the growth should only be slightly shortened back and any weak spray be cut out; then when in growth again give a moderate shift, and in a few years' time you have large bushes, full of bloom, will be secured.—B. C. R.

— It is usual to cut out the old wood after the plants pass out of bloom, in order that the young shoots from the base may develop into flowering growths for the following season. If good specimen flowering plants are wanted it is an error to do this. I think out the old growths, leaving a considerable number just as they are; a limited quantity of young growths being allowed to take the place of the older ones cut out. The larger proportion of the flowers are produced on the old wood. The plants should be repotted after flowering, and ought to be placed in an open position out-of-doors, sheltered if possible from the north and east winds. *Deutzias* root very freely, and need considerable supplies of water during the summer.—J. D. E.

— There is no necessity for cutting down plants which are well furnished; it would be a mistake to do so. But loose, straggling plants may be cut into shape, and afterwards bespiced in a close, warm pit to make new growth. Those plants which are well furnished and do not require cutting back may be plunged outside as soon as the young wood gets a little firm.—E. H.

3625.—**Hyacinths and Tulips.**—Yes, the bulbs will succeed if you treat them in the way you propose, providing you keep the boxes in a sunny position, and the soil moist at all times, until all the leaves die away naturally. They would no doubt flower better next year if they were planted in fresh soil. If you can do this early next September, by all means do so. When you have got the bulbs out of the soil remove any offsets, and plant them in good soil in the garden. In two years' time they will be large enough to flower. I was enriched the other day to see what a nice stock of bulbs a lady amateur had raised in this way. Some of her *Hyacinths* so treated had spikes of flowers equal to those that she had purchased. Plenty of manure is used in this garden, and a space is set apart on purpose for the young bulbs. It was evident, however, that she gave them unremitting attention.—J. C. C.

3627.—**Cyclamen culture.**—I suspect the plants are allowed to stand in the sun and often get perched at the roots during the time they are out-of-doors, or else they ought to do well. At the present time a frame stood behind a north wall is the best site they could have. Sufficient water to prevent the soil becoming quite dry is all that is required during the summer. When there is no fear of frost the plants may be stood clear of the frame, still under the shade of the north wall. About the middle of August, or before if new growth is apparent from the crowns, they should be potted, turning the roots out of the old pots, and removing most of the soil, transferring them to pots one or two sizes larger than in which they flowered before. A compost of three parts fibry loam, one of leaf-mould or horse-manure, with half a part of peat; a sixth part of dried cow-dung, or one quart of finely-ground bones, to every bushel of the compost, adding sand according to the state of the loam—heavy or light. Place the plants in the frame again, syring the foliage every afternoon, keeping the frame rather close for a week or so until new roots are formed, when abundance of air will be needed to keep the growth stocky. Attend regularly to the supply of water at the roots; on no account let them suffer for want of it. Toward the middle or end of September place the plants in a light greenhouse, as near to the glass as possible. Shade the glass during light weather for two or three weeks, and moisten the foliage in the afternoon daily. Weak liquid-manure applied to the roots every alternate watering will be an advantage. Upon the first appearance of green-fly fumigate the plants with Tobacco-smoke.—S. P.

— There is a very great difference in the size, &c., of the flowers, and often foliage as well, of these pretty plants, some "strains" being infinitely superior to others, and even from good seed the quality varies greatly. Old or neglected roots, again, are almost sure to produce small flowers. But the plants ought not to be kept "pretty dry" at any time; on the contrary, the soil should always be moderately moist, and the pots stood in a shady place during the summer. Repot them in July, using a mixture of garden loam with half as much of leaf-mould and peat, with plenty of sand, and keep close and shaded until established.—B. C. R.

3571.—**Salvia coccinea nana.**—This is a greenhouse plant, but in good summer, if put out when all fear of frost is over, it would bloom in the summer months. The best *Salvia*, however, for the garden is the beautiful *S. patens*, which has very bright blue flowers, and they are produced freely, so as to make a good effect. It is used largely for the centres of beds, and is sometimes planted in a distinct bed with happy results. The *Ageratum* should not be used to fill one bed only, but it is a very good plant for associating with other bedders, as *Fuchsias*, *Tuberous Begonias*, &c. The *Zee* is one of the best kinds. The plant is dwarf and compact, and the flowers are of a fine blue colour.—C. T.

3618.—**Treatment of a Myrtle.**—The only way I can help you is to beg of you to be patient with your *Myrtle*. No doubt it is too young to flower. If, however, it is an old plant, and of a size that should flower, you may help it to bloom by getting the growth better ripened, or if the growth is weak, give it a larger pot at once. Then stand it all the summer in a sunny position in the greenhouse, and give the roots plenty of water in hot weather.—J. C. C.

ACHIMENES AS BASKET PLANTS.

THERE are few plants that are more showy and useful, or afford such a variety of colour and form of flowers, as the different kinds of Achimenes, the habit of which is such as to render them equally suitable for growing in pots or baskets, although it is in, perhaps, the latter way (as is well shown in the annexed engraving) they show themselves off to the best advantage. In order to prepare them for this purpose it is a good plan to start them first in pans of leaf-mould or finely-sifted peat, from either of which they lift readily, and transplant with large balls, and may then be distributed regularly to furnish the baskets. The latter made with wires about 1½ inches apart answer the purpose well, as between these the heads of the plants may be thrust as the filling up proceeds. The quickest way, however, is first to line the baskets with Moss and then put in the soil, when, by making

frames, kept shaded and shut up early; but till then they must have artificial heat to get them along. Throughout the summer they require abundant supplies of water; but it is essential for their welfare that it pass freely away, for anything approaching a stagnant state of the soil is sure to throw them out of health. Except green-fly and red-spider, Achimenes are not much subject to insects, and the first-named pest can easily be got rid of by fumigation with Tobacco, which, however, should be done cautiously, as it does not take much to injure the tender foliage. For the red-spider the best remedy is the diligent use of the syringe and clean, warm, soft water to the foliage. Should mealy-bug attack them, as it occasionally does, then it must be removed by the use of a small brush or sponge. After they go out of flower they require no further special care, and may be wintered anywhere under

rose-coloured flowers; A. Manve Queen, mauve-coloured flowers, a very fine, large-flowered kind; A. patens, fine violet, the flowers large; A. picta, flowers yellow and scarlet, a dwarf-habited species from Mexico; A. Pink Perfection, magenta, shaded with violet, carmine eye, flower large; A. Rose Queen, purple end rose, with yellow throat, very compact habit, profuse bloomer; A. stella, magenta, spotted with carmine, orange eye, flowers serrated on the edge; A. Williamsi, vivid scarlet, large flowers, compact branching habit. D.

3608.—**Double Cinerarias.**—This is a case of reversion from double to single flowers, an occurrence that is not unusual in Cinerarias whether the plants are raised from seeds or offsets. It is possible that you have unwittingly assisted the plants to revert back by growing them in too rich soil, or giving them strong liquid stimulants. I am, however, inclined to think that the high temperature which we have had this spring has something to do with it by hurrying the plants into flower. In a general way the double varieties do not bloom so early as the single ones.—J. C. C.

—The Double Cinerarias do not, as a rule, become single, and if propagated year by year from offsets and grown in good soil there is no alteration in the character of the flowers. If the plants were grown in poor soil the probabilities are that the flowers would be not so double, and might become single. The only suggestion I can make is to advise taking the offsets, plant each one singly in a thumb-pot, and pot them on as they require it, using good loam, to which has been added a third part of decayed manure, some leaf-mould, and sand. The plants should be grown in a well-ventilated garden frame.—J. D. E.

—These do occasionally revert back to the single form, but the backsliders have in my experience been few in the case of a good strain to start with.—E. H.

3619.—**Culture of Gloxinias.**—If the plants are well attended to and have the necessary situation they will flower in six months, but I fear yours are a little late to do that, and in consequence may take a month longer. As soon as they are large enough to handle prick them off into pans filled with peat and leaf-mould in equal parts, adding silver-sand liberally. Place the pans in a shady part of the plant stove, Cucumber or Melon-pit, where the temperature is not lower than 65 degs. by night and 75 degs. by day. When the plants have about four or six leaves place them in 3½-inch pots, the stronger may require pots an inch wider. Use a similar compost as before, except that one sixth part of dried cow or bone manure be added. Drain the pots freely as abundance of water is required at the roots when the growth is being freely made. A position fairly close to the glass, but in the shade in a temperature not lower than previously named, is best, and if the pots can stand on a moist bed of ashes or gravel so much the better. Here the plants may remain until they flower.—S. P.

—What do you mean by "changing leaf"? Is it that the "rough" or proper leaves are being formed? If so, they should be pricked off singly, 1 inch apart, in well-drained pans or boxes of sandy loam, peat, and leaf-mould, and still be kept warm, close, moist, and shaded. In about another month they will be ready for small (thumb) pots, and if when a little advanced they are shifted into 3½-inch or 4-inch sizes they will soon begin to show the flower-buds. It is quite possible to flower Gloxinias in six months from sowing the seed—that is to say, if the seed is sown in February the plants will begin flowering in August.—B. C. R.

—Gloxinias will require to be pushed on in a close pit to get them to bloom in six months, from seeds. If the seeds are sown early in February and kept continually growing in a warm house or pit, the greater part will flower in autumn.—E. H.

3604.—**Ericas after flowering.**—The free-growing winter-flowering Ericas should be pruned back more or less after flowering. In due time a new growth will break out, and when the young shoots are an inch or two long, shift into larger pots, if they require it, using the best brown fibrous peat, rammed in firmly. After potting, keep a little closer for a time in a pit or frame. The watering must at all times have careful attention. Signs of omission or



Basket of Achimenes.

holes around the sides, the plants can be put into them at regular distances apart, and all made complete in a very short time. When this is done they should be hung up in a bonce where they can get plenty of moisture and be syringed for a week or two to give them a start, after which, with a temperature varying between 60 degs. and 70 degs., they make rapid progress and soon become covered with bloom. It should be borne in mind that Achimenes are shade-loving plants, and, therefore, the situation chosen for them should be where the sun does not strike them during the heat of the day, otherwise the leaves become blistered, and the growth hard and stunted, which greatly detracts from their usually healthy appearance. With regard to

Soil, nothing answers better for Achimenes than a mixture consisting of about equal parts of loam and peat, used in a rough state, and to this should be added a good sprinkling of sharp silver sand, so as to render the whole porous. After May they will grow well in any ordinary

stages or on backshelves of greenhouses, providing the soil containing them does not catch drip, nor in any way becomes too wet and cold for their safety. New varieties are constantly being raised from seed, but the undermentioned are all good kinds and deserving of a place in any garden:—

ACHIMENES ADMIRATION, rose-colour, with light centre; A. Ambrose Verschaffelt, a fine white sort, with the centre marked with dark rays; A. Aurora, scarlet, with yellow eye, very large flowers; A. Firefly, deep-carmine, spotted with crimson, yellow eye; A. Ghiesbreghtii, a Mexican species, with scarlet and purple flowers; A. gloxiniflora (also a Mexican species), the flowers are white—a distinct and desirable plant; A. grandiflora (another Mexican species), a tall grower, the flowers of which are reddish-crimson; A. longiflora alba, large flowers, white, slightly marked in the centre; A. longiflora major, a very fine blue sort; A. Masterpiece, a stout-growing variety, with violet

commission with this class of plants are very often fatal. Whoever undertakes to look after them must study the condition of the plant by rapping the side of the pot. This is the best guide. More hard-wooded plants are ruined by careless watering than anything else. In July, when the growth is completed, set the plants on a cool ash-bed outside to ripen. House in September.—E. H.

The free-growing *Ericas*, of which *E. hymalis* may be taken as the type, should be pruned as soon as they have finished flowering. Cut the strong young wood back to within 2 inches or 3 inches of its base; the weaker growths need not be shortened much. The slow-growing species and garden varieties of the *E. tricolor* type need no pruning, except it may be to shorten any growth or growths that are likely to grow more freely than the others. When they have started to grow again after flowering, they may be repotted, using good fibrous brown peat of a sandy character. *Ericas* are easily grown, but are sometimes injured by neglect to water them. If the sandy peat becomes over-dry, it is rather difficult to moisten it throughout again, and the fine, hair-like roots are killed by over-dryness. *Ericas* also like no airy position when under glass, and cannot bear a forcing temperature. Even in winter the temperature of the greenhouse where they are kept should not be high. Enough artificial heat to keep out the frost is all that is required; a high temperature and a close atmosphere are sure to bring mildew. This parasite is troublesome, and should be destroyed as soon as observed by dusting with flowers of sulphur.—J. D. E.

3607.—**Treatment of Palms**—The better class of Palms are hot-house plants, and are easily grown. They require liberal treatment—that is, good rich loam and decayed manure, and plenty of water when growing; but it is astonishing how they manage to grow and thrive in flower-pots, small for the size of the plants. They may be repotted at any time. I have frequently left them in small pots until the mass of roots split them in two: repot firmly, ramming the compost well in.—J. D. E.

3633.—**Which is the right boiler?**—This is a difficult question to answer, as opinions vary as to which is the best boiler. I have my own views on this matter, which, if expressed here, might lead to the assumption that undue preference was given to a certain manufacturer. You appear to have sound views about the various forms of boilers now in use, and I gladly follow you when you give preference to a form that requires setting in brickwork, like the coil. The only objection I have to the coil is that they quickly burn out; but they are open to the same objection of which you complain of in other forms—of the waste of heat up the chimney. You will, however, have to bear with this. Next to the coil, I should prefer a flued saddle, as this form is the most economical with regard to the consumption of fuel of any that I am acquainted with when it is properly fixed, and a small size will be sufficient to heat 250 feet of 4-inch piping. Although the forms which you mention are cheap enough in the first place, you must bear in mind that the interior parts of the furnace quickly burn out. One of these forms of boilers, which cost me £4 when new, got so out of repair at the end of the second year that I had to lay out considerably over £1 to get it into working order again. Any hot-water engineer will fix a flued saddle and guarantee it to last for ten years without any further expense to you. If you compare this statement with the account of my experience of those forms that do not require setting in brickwork, you can quickly decide which will be the cheapest in the end, to say nothing about the worry of having to replace the worn-out parts in the independent forms.—J. C. C.

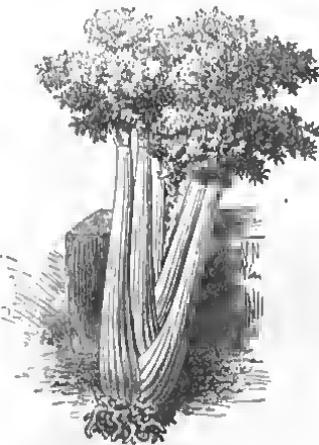
This is by no means an easy question to answer. There are so many different kinds of boilers, and all, or nearly all, have their good (and bad?) points. One of the most easily managed, satisfactory, and economical boilers I ever had to heat about this quantity of piping was a "Star" (upright independent cylindrical type, with waterway all round the fire). It seldom needed attending to more than twice a day—morning and evening—when the heat was cleared of ashes and slinkers, the upper lid of the boiler raised, and the draught regulated. There was

always a good fire in the morning, and the pipes as hot as at night, while, except in severe weather, it consumed very little over a bushel of coke in the twenty-four hours. It cost £5, and after nearly four years of steady work was still in good condition; but, as a rule, these boilers do not last more than five or six years. Those of a conical or slightly tapering form are the best, as the coke is not liable to "hang" in the hopper as in those of the cylindrical form. A plain saddle, properly set, would do the work well and economically, and last much longer; but the cost of the boiler, fittings, brickwork, &c., would amount to twice or thrice that of the foregoing. Coils are much cheaper than any other kind of boiler, but they are not particularly economical in working, and especially if not properly set and carefully fired, soon burn out. The cast-iron saddle, with waterway back and two side exits into flues, is an excellent boiler in every way, and with careful stoking will last a lifetime. I should choose either this or one of the "Star" type.—B. C. R.

THE KITCHEN GARDEN.

LATE CELERY.

The supplies of late Celery must soon be taken into consideration, and at this season of the year places such as old spent hot-beds are available for raising this crop. I am well aware that it has been advised in warm districts to sow on an open south border for the last crop, but I do



Celery "Sandringham Dwarf White"

not advise this, as I get better results by getting the seed up as quickly as possible after sowing. To do this, a moist, close place is essential, as in the open the seed-bed dries up quickly, and frequent supplies of water have to be given. If sown in a cold frame, it should be where the light can be removed as soon as the third leaf is formed, as it is necessary to get a short, sturdy growth. As soon as the seedlings appear above ground no time should be lost in

thinning to give the seedlings room to develop. When sown in this way it should be on a flat surface, as if sloping, the moisture, so necessary to the well-doing of the plants, escapes. Some advise sowing in heat, but as far as my experience goes for the late crop the less heat the better. A close place and enough moisture to cause germination are all that are necessary at the start, and there must be no lack of moisture as soon as the seedlings commence to form the rough or third leaf. I consider it one of the worst systems to sow these late crops in pans or boxes, as often through peas of work the seedlings get drawn and weakly, and frequently a month or six weeks is lost before growth starts. If grown as sturdily as possible, they never suffer from their shift when planted out. When sown thinly and plenty of room can be given, there is no necessity for transplanting the late lot, as if given plenty of room the seedlings can be lifted with a good ball and planted direct into their permanent quarters. I believe much of the success of the plants depends upon the treatment in the earlier stages and the amount of moisture. I find that seedlings lifted from the seed-bed, provided they have been

grown as hardy as possible with plenty of space, do much better than those raised in heat and transplanted. The Celery when planted as advised need not be so large as is often the case; indeed, it is often too large. When raised as above, there will be no flecking, no shading, and no loss of outside leaves. I grow two varieties for late work, and find them most suitable on our light soil. To give a supply through January and February I prefer Sandringham Dwarf White (here figured), and find it excellent; it remains good to the last; and to carry on the supply till May Standard-bearer is my favourite variety—indeed, I find no other remains good so long a time without flanking. It may be had good to the middle of May with little trouble. Some may object to it for cooking on account of its pink colour, but as April comes in there is very little pink left. It is equally useful as a vegetable as the white kinds. I do not grow the large Celeries for late use. I find them less useful, and after several years' experience of this variety I cannot fail to recommend it as the most useful I have grown. Celery, like other vegetables, differs in different soils, so that those who find a special variety succeed should not reject it for those they have not tried. The

earthing up of late Celery has much to do with its good keeping. If earthed up too early, growth is arrested and premature decay sets in. To get hardy Celery to resist severe weather, earthing-up must be delayed till the last moment. This allows the weather to harden the growth and there is never any shock, as the longer the earthing-up is deferred, weather permitting, the later the Celery will keep, and though the plants when grown on the surface may require a little soil to prevent the leaves going wide, earthing-up should be avoided as long as possible. I have also seen too much manure placed in the rows for late Celery. I do not think it is necessary, as it promotes a soft, succulent growth, often causing it to run. I prefer a moderate quantity, and to give two or three dressings of fish-manure during the growing season. The fish-manure prevents slugs doing injury when the soil is plowed to the plants. Salt is also good given in moderate quantities, placing it in the rows before watering. Plenty of water is necessary in dry seasons, and liquid-manure when in active growth is also beneficial. (1)

3603.—**Forcing Rhubarb for market**.—Rhubarb is very easy to force; it is only a question of artificial heat of some kind, and a good stock of strong roots of the early kinds for gathering first, and Victorin for later use. Every Rhubarb grower acts according to his convenience. There is no better place for forcing Rhubarb than in a roomy Mushroom-house. A friend who grows Cucumbers largely, fills one of his long houses with Rhubarb roots packed closely together, leaving a path down the centre for gathering and watering. There are many ways of forcing Rhubarb; everything depends upon circumstances and the means at disposal. A good deal of the forced Rhubarb comes from Yorkshire, and is forced by utilising the waste steam from the boilers in the factories.—E. H.

3614.—**Dark spots on Tomato leaves**.—There can be little doubt that your plants are affected with the Tomato disease (cladisporium), caused probably by shutting up the house closely at night, with too much moisture about. The best course is to dust the leaves of the plants (chiefly on the under-sides) with sulphur, to ventilate abundantly not only by day but to some extent at night also, unless very cold outside, and keep the atmosphere moderately dry, especially towards evening. This will probably get rid of the affection in time.—B. C. R.

The dark spots are fungus growths, and if not got rid of by a freer ventilation and a more buoyant condition of atmosphere inside they will spread until all the foliage is destroyed.—E. H.

Dressing Asparagus beds with fish-manure.—The old system of dressing with salt in damp, showery weather is not adopted so freely since the artificial manures have been so much used. The value of salt for the above is some coils is much greater than in others, but the time of applying it must be taken into consideration, as if wet clay land is dressed too soon, growth, instead of being assisted, is retarded. The best plan I have found is to dress the beds several times during the season of

cutting. For early dressing I have found nothing to equal fish-manure. It is an excellent fertiliser, and does not retard growth by keeping the beds in a cold, wet state. I have great faith in fish-manure, as I find it excellent for Celery, and equally good when applied to Spakale whilst making the summer growth. It is also reasonable in price. I do not advise a heavy dressing at first, but to dress lightly several times during the season, and in dry weather to wash it down to the roots by flooding with the hose. I need fish-manure largely for our permanent forced beds, and it is surprising the difference in growth when the beds are uncovered and a dressing of manure applied before the new permanent growth is made. Fish-manure, being very powerful, must be carefully applied. I have used guano and soot

Mercury (Good King Henry) as a vegetable.—This plant is not much grown in some districts, but in Lincolnshire it is in every cottager's garden. A few years ago I was ignorant as to its qualities as a vegetable. At this season when green vegetables are scarce it forms a welcome dish, and those who like Spinach will not object to it. This vegetable is useful on account of its hardiness, as it will live where Spinach is killed. It is not over fastidious as to soil, but is worth good cultivation, and may be sown on good land well manured, giving it a warm position. The cottager generally gives it a warm corner next the cottage facing south, and thus gets early growth. When highly cultivated the shoots may be had of a good size, and if these are earthed up in the early part of the year with decayed manure or leaf-soil, they

HOUSE & WINDOW GARDENING.

UNTRAINED AZALEAS FOR TABLE DECORATION.

THE exceeding beauty of a naturally-grown Azalea as a table plant when in flower is well shown in the annexed illustration. The question may reasonably be asked why, generally speaking, the Azalea, one of the most beautiful of all our greenhouse plants, is specially selected as a fitting victim for the mathematically accurate trainer to exercise his skill upon? True, the plant in question readily lends itself to this ill-treatment, and the beauty and profusion of its flowers in their season to some extent gloss over the unnatural form which the plant is made to assume, one that is, moreover, quite contrary



An untrained Azalea for table decoration.

mixed with salt, but prefer the fish-manure. Those who can utilise liquid manure from the cow-yard during the summer months will find it the best fertiliser, especially in hot, dry weather on raised beds in light soils.—G.

French Beans.—It is not safe to sow French Beans much before May 10, and then only a few should be sown. A part of a warm south border should be given up for the earliest sowing. Seeds may be forwarded in small pots or boxes if needed. The soil for French Beans must be in a highly fertile state, and also well pulverised. For the smaller growing varieties the rows should be 2 feet apart, and for the stronger growers 30 inches will not be any too far apart. The seeds must be sown thinly, or in double rows about 4 inches apart. The wisest course is to allow a few extra seeds to allow for thinning, especially for the earliest crop.—A.

are but little inferior to Asparagus, and may be served in the same way. The shoots must be used young, as the outside skin soon becomes hard. This if left must be removed from the older growth. The seed should be sown in April or May in rows 2 feet apart, thinning out the plants to 1 foot or more on good soil. Divide as soon as the shoots commence to grow.—W.

3568.—Tomatoes in a small house.—A good deal depends upon the kind of Tomato grown as regards setting early in the season. Perfection is not a good settor, but then if only two or three fruits set to a bunch the crop will be a fairly heavy one. Conference and Ham Green Favourite are good settlers, and the Old Red never fails.—E. H.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruits and vegetables for drawing. The drawings so made will be engraved in the best manner, and will appear in due course in GARDENING ILLUSTRATED.

to its nature. Azaleas do not naturally grow into perfectly-formed pyramids or bushes so accurate in outline that they appear to have been clipped into shape with a pair of shears. On the contrary, their greatest beauty mainly consists in the tendency they have to form an irregular outline. All the training really requisite for even the largest plants of Azaleas is judicious stopping of the shoots when the plants are young, and a few well-placed stakes and ties to support the main branches when a more advanced period of their existence has been reached. Anyone taking up the culture of this delightful plant, which can be grown to perfection in a cool greenhouse, and when in flower be removed to the dwelling-house, for the first time, should bear these facts in mind, and by so doing a great amount of labour which would be much better devoted to other work in the

garden would be saved, and the result will not only give pleasure to the worker, but also to those who only see the fruit of his labour.

H. B.

3555.—**Palm-leaves dying.**—A frequent reason for the common complaint that the tips of Palm-leaves grown in rooms are apt to turn brown is that they are injured by being brushed against. A thoughtless servant will often take the plant off a table and push it against the wall or the furniture while she dusts, which naturally destroys the tips of the leaves. But if this is not the case, it may be that the brass bowl in which it stands is in laist. Surely the plant is not growing in a brass pot? If so, it must, of course, die for want of air to its roots, to say nothing of want of drainage; but probably "L. M. L." means that the earthenware pot is slipped into another of brass. If, however, this second cover be a tight fit, it would impede the air, and render the roots unhealthy, while it may retain water at the bottom which should run off. Palms need thorough drainage, and should never stand in water; they must not, of course, be ever drier-dry, but, on the other hand, should never be watered until the upper soil is dry (not moderately wet), then giving enough to run through the pot, but emptying the saucer an hour after watering. If the Palm is unhealthy, it will be well to examine its roots at once, as it may be repotted at this time of year; and after giving it a slight shift, with plenty of drainage (well arranged so that the water can pass off), and ramming down the new soil with a stout stick between the old ball of roots and the pot, the plant had better be put for two months or more into a hot-house or conservatory, where it will have a chance of starting new roots and throwing up healthy leaves. The compost needed for a Palm can be bought ready mixed in a small bag at the horticulturalists; this is a more economical plan than buying the separate necessary parts of it. Another good plan for an amateur is to take the plant in a nurseryman, and get him to pot it and plunge it in heat for a month or two, hardening it off gradually again before it is replaced in a room.—I. L. R.

The plants have possibly got into a thoroughly bad condition at the roots, or you give too much water, as unless the Palm has sun the soil does not get dry very quickly, but becomes sodden and unhealthy. If the roots are at fault turn the plant out of the pot, and this is a good season of the year for the work. The soil used should be good yellow fibry loam, mixed with a fair proportion of sharp silver-sand, or you may use fibry peat; but whatever is used must be made very firm, otherwise success will not come. Give the plant, if possible, a little heat after repotting, so as to get it well established again quickly, and take care not to overwater, otherwise it will soon die. During the summer months some shade is necessary to get the foliage of a fine deep-green colour, and a good supply of water is necessary.—C. T.

3628.—**Auriculas in pots.**—It would not do to place a number of offsets together in 5 inch pots in order to save trouble. Auriculas require a good deal of attention, and no one would be likely to succeed who begins to talk about saving trouble. All offsets should be removed as soon as ever they are ready to be taken off. Plant one, two, or three of them in thumb-pots, and pot them off again as required. The Auricula needs good rich soil in order to do it well. Good fibrous yellow loam three parts, one part decayed manure, and one part leaf-mould, is a good compost for them. The only way to get those shy of producing offsets to do so freely is to cut the plant over; it will break out freely from the crown.—J. D. E.

3009.—**Watering a garden.**—After the long spell of dry, lovely weather which we have had watering should either be very thorough or only those plants which seem to be suffering from lack of moisture should be watered with a spout—thoroughly drenched, in fact. Sprinkling only tends to weaken your plants, as it induces them to form their roots near the surface, instead of striking downwards. During the last two months I have watered nothing, unless it absolutely required it, and my plants look vigorous, and are remarkably so for the time of year.—A. G. BUTLER.

ALPINE AURICULAS.

MANY appear to think that the raising of Auriculas from seed is attended with some difficulty and a considerable amount of uncertainty, this erroneous impression doubtless taking its origin in the frequent failures arising from an imperfect appreciation of the character of this hardy flower. A method frequently followed is that of sowing in warmth in early spring. There are two objections to this method, one being that the germinating powers of Auricula seeds decrease at a rapid rate when kept out of the soil; the other that the Auricula is naturally very impatient of the application of artificial warmth. So far from artificial heat conducing to free and quick germination, I believe the contrary to be the case with this hardy flower at least. The important point is to employ new seed, and for this reason I would advise those who may intend to raise a stock of young plants to order the seed when the natural blooming season of the Auricula arrives, specially stipulating that it shall be fresh gathered and to be sown as soon as ripe. Seed purchased in spring has, of course, passed some months out of the ground, and although it may be quite good, its germinating powers are so sluggish that one can expect but a sprinkling of plants when sown. These should be carefully taken out with as little disturbance of the soil as possible, for it must not be concluded that the seeds that have not germinated are bad; they will in all probability come up later on. The best thing to do is to plunge the pots in a cold frame, covering the soil with Moss and just looking to them now and then during the summer, so that the soil does not get dry. In this way most of the seeds will come up in autumn or during the winter, as that by the following March every good seed will have made a plant. It has always appeared to me that Auriculas germinate most freely at a temperature but little above freezing. It is probable that in alpine regions they germinate under their snow covering, and a German grower advises as a certain way of getting the seeds to grow freely that they be sown in winter, covering the soil with snow, which is to be allowed to remain until it melts. Some years ago when commencing the culture of these hardy Auriculas there happened to be a good deal written respecting the best way of raising them from seed. Various plans were recommended, most of which I tried with more or less success, but in no single instance did I succeed in getting the whole of the seeds to germinate, and there was always a difference of several weeks in the appearance of the first and last seedling. Eventually it occurred to me that I would try sowing late in autumn, thinking that if the seeds remained in the soil through the winter they would come up earlier in the spring, and perhaps more regularly. They were sown in boxes in the ordinary way, but I allowed space for a covering of Moss, a piece of glass being put on to keep off drip. They were plunged to the rims in a cold frame, remaining undisturbed until the end of the year, when, happening to look to them, I found young plants coming up; by the end of January they had quite covered one side. Every seed appeared to have germinated. The following year I adopted the same plan, and with identical results. It is, therefore, very evident that in the case of the Auricula, artificial heat is not likely to favourably influence germination.

AUTUMN SOWING is, however, preferable for the reasons above given, and the sooner the seeds are committed to the soil after maturing the better. Requiring a considerable number of plants, I dispense with pens or boxes and sow in a frame where the young seedlings can remain through the winter. The soil is well watered before sowing, the seeds being very thinly covered and kept quite dark until they come up. I find that in this way it is no more difficult to raise Auriculas than the common Blue Lobelia. With the shelter of a frame the young plants remain quite fresh and green all through the winter, presenting quite a different appearance from older specimens at that time of year. In hot summer weather they should be kept well watered with an occasional dose of liquid manure, and by the end of the autumn they will make nice little specimens large enough to yield a moderate amount of bloom. Even when sown in a cold frame, the seeds will, whether

of the alpine or show varieties, this method is far preferable to growing the young seedlings along in pots, as they give much less trouble and make double the growth. If any are required to bloom in pots, these can be selected and marked when in bloom for potting up the following August. The best position for Auriculas is undoubtedly a north border, but it must not be overshadowed by trees or high buildings. A certain amount of sunshine is, I am convinced, beneficial, and this the plants will get in early morning and towards the close of the afternoon in a north aspect, if there is no obstacle to the admission of the sun's rays. I grew my plants fully exposed to the sun, and they bloom remarkably well; but I find that if we get hot sunshine with a dry condition of the soil the blooms quickly lose their freshness. They last double the time where they escape the effects of the midday sun and parching winds that so frequently accompany it in spring. Hot sun, frosts, and heavy rains are the great enemies to Auriculas in their blooming season, and it must be admitted that they seldom escape the effects of these adverse climatal conditions. Heavy rains come mostly from the south and west, so that plants in a north or east position are less likely to have their blooms spoiled. I have not found Auriculas very capricious as regards soil, but they are impatient of stagnant moisture at the root during the winter months. Where the soil is naturally heavy it is better to plant somewhat above the ordinary ground level, and some river sand or light material of any kind should be added. The best results will, of course, be obtained when good loam is used. In light porous soils they are apt to have their blooming-time considerably shortened by drought, and if some good holding loam cannot be added, the surface should be mulched with Coconut-fibre or something similar. As regards transplanting, I am in favour of doing this early in autumn, as then the soil gets well settled round the roots by winter. In a general way it is advisable to transplant Auriculas every third year, as they have a tendency to push their crowns above the soil, in time forming naked stems several inches long, and the ground becomes hard and spongy through heavy rainfall. If this is not done many of the plants will die out; whereas with periodical transplanting they will yearly increase in size and effectiveness. As to the ability of Auriculas to withstand the vicissitudes of our winters, it appears to me that if enjoying suitable conditions as regards position and soil, frost alone makes no impression on them. It is only in waterlogged soil and when the crowns do not properly mature that they are likely to perish. J.

BULBS AFTER FLOWERING.

BULBS are probably treated about the worst of any family of plants; not only are they kept out of the soil for weeks, and even months, after they ought to be rooting, and gathering strength for flowering, but directly the blossoms fade we hear people talking of digging them up again at this time of year. I am constantly receiving queries as to whether the bulbs that begin to look seedy had not better be dug up, dried, and stored away. But the middle of April is far too soon to lift even the very earliest flowering bulbs, and the middle of May is plenty soon enough; in fact, where it is possible I like to let the foliage get quite sere and yellow before lifting is done, for as long as any life is left in the foliage, it is doing some useful work for the bulbs, and, as a rule, tender bedding plants that usually follow bulbs cannot safely be planted out until the middle of May. Now, if the bulbs are expected to last good for any length of time no pains should be spared to get the bulbs carefully ripened off in the soil as long as possible; but if any vitality remains in the foliage when it is imperative that they must be lifted, do it in the following manner—viz. take a steel fork and, digging them up carefully with all the roots that can be got, lay them in boxes packed closely together with a little soil worked among the bulbs, so that they may derive all the benefit possible from the foliage, and after they are perfectly a rest divest them of the old foliage and store them away in a cool, dry place, until the time for planting again comes round. J. G. HANTS.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers to be inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be written and sent to the Editor on one side of the paper only, and addressed to the Editor of GARDENING, 27, Southampton-street, Covent-garden, London. Letters on business should be sent to the PUBLISHER. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents would bear in mind that, as GARDENING has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.

Answers (which, with the exception of those announced will be classified, will be found in the different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so in kindly that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents refer to articles inserted in GARDENING should mention the number in which they appeared.

3657.—Celaena crotcha.—Will someone kindly tell me where to buy the seed of this flower?—R. S.

3658.—Dandelion on a tennis-lawn.—Will anyone kindly tell me how to destroy Dandelions on a tennis-lawn?—E. B. H.

3659.—A cleanly plant stimulant.—Will someone please to recommend a cleanly good stimulant for lady's use for herbaceous plants, Fuchsia, &c.?—SCOTIA.

3660.—Treatment of an Oleander.—I have a young Oleander about 8 inches high. Should the top of the shoot be pinched out, and what soil is best for it?—L. T.

3661.—Wire-netting for Peas.—Would wire-netting do for Peas instead of Pea rods with large stakes driven in the ground for such a Pea as Duke of Albany?—BAYLY.

3662.—Keeping Apples.—Will anyone kindly tell me how I can keep Scarlet Nonpareil Apples until next August? Those I have are good sound fruit, and I want to keep them so.—H. C.

3663.—Bottling Green Peas.—Will anyone kindly give me a recipe for bottling Green Peas and Scarlet Runner Beans, so as to keep them in their green state for use in water?—LINDEN.

3664.—Best Melon and Vegetable Marrow.—Will anyone kindly tell me the best kind of Melon and Vegetable Marrow to grow in open ground and all particulars of rearing the same?—H. W. H.

3665.—Chrysanthemum for show.—Will "E. M." kindly oblige with remainder of culture of Chrysanthemum for show, as he kindly promised in GARDENING issue of Dec. 3rd, 1892?—W. E. ANDERSON.

3666.—Melon "Little Heath."—I am raising some "Little Heath" Melons in a small frame hot-bed. Will "J. C. C." give me a few plain, practical hints as to the treatment of the plants when raised?—C. A. M.

3667.—Malmaison Carnations.—Would someone kindly tell me the best way of growing the above? I had a beautiful strong plant doing well all the winter and full of buds in one day; it began to droop, and within the week seemed quite dead.—A. B.

3668.—Wireworms in a flower-garden.—I am troubled with a great number of wireworms in my flower-garden which eat the plants off just below the surface of the ground. Will anyone kindly tell me of something that will destroy them?—DOLMUN.

3669.—Stopping a Vine.—Will someone please tell me when to stop my Vine? It is now in bud. Should the shoots be stopped and pruned before or after it has flowered? Is it too late to use stimulants to the root, which is outside the house?—L. T.

3670.—Narcissus not flowering.—What would be the reason of a double Narcissus not flowering? They make lots of dead heads, but few flowers. Some years ago I took them all up and replanted them; they were too thick, but have never had so many flowers since.—J. WHEELER.

3671.—Good King Henry and Salsify.—I have just sowed some seed of "Mercury" or Good King Henry and I find I have to leave this place in autumn. Will these plants be of any use to take with me? Also I sowed a bed of Salsify, and wish to know if the roots can be dug and stored for winter use?—STAMP.

3672.—Zygopetalum Mackay.—I have just bought two nice plants of Zygopetalum Mackay. Will someone kindly give me some hints as to growing these? Should they be in sun or shade, and when do they flower and what colour? Some of the bulbs have no growth. Will they make no more now?—JUDY.

3673.—Lily of the Valley in a bed.—I have a large bed of Lily of the Valley, very thick indeed; have not been thinned for fifteen years. I manure every winter. Is it the correct thing to thin them, and how? They are in compact mass, and I have to examine closely to find the flowers.—J. WHEELER.

3674.—Unhealthy Larches.—I have a number of young Larches which seem suffering from blight or dieback. The stems are covered with fine white spots, the leaves blacken and fall off, and eventually die. Is there any remedy for this? Would washing with paraffin or anything else cure it? I have already lost 12 to 20 trees.—A. B.

3675.—Bleak Hamburg Vine leaves withering.—Will someone kindly say what caused my Vine-leaves to wither or go brown? They were planted in an inside border (see last issue). They are now very morning about 9 o'clock. The heat often rises

to more than 90 degrees, with full air on. Cold draughts often blow through the lights, which, I think, cannot be avoided. The floor and staging are damped several times on hot days, and wall two or three times. The house is closed about 8.30 p.m. There is no fire-heat, except a little in the evening, and I might have mentioned the house is facing south and is full of pot-plants. I shall feel thankful to any person who will say how to prevent this mischief, and give a few hints on the future management?—NOVICA.

3676.—Auriculas.—I have some beautiful blooms in the open air, and am anxious to take cuttings to rear in pots for next spring. Will these survive if broken off without distinct roots and potted as cuttings? If so, should they be kept in pots throughout, or when well-rooted planted out and re-potted in the autumn?—BERRUR.

3677.—Pansies, &c. from seed.—It is better to raise Pansies, Marguerites, Sweet Williams, Wallflowers, and Forget-me-nots from seed each year, or to keep the old plants for two or three seasons? If the former, what is the best time to sow, and is a frame better than the open ground to sow in? My soil is a good dry one.—AMATURUS.

3678.—Virginal Creeper and Pyrus japonica.—Can I raise Virginal Creeper and Pyrus japonica easily from cuttings, and would they strike to a frame now? Would it be better to take them now or later, and should I take old wood or this season's shoots? How long would the Pyrus be before it would flower from cuttings 6 inches long?—AMATURUS.

3679.—Oologyne cristata.—Is it necessary to re-pot Oologyne cristata, Chatsworth variety, every year? My plants have just borne flower-spikes, which being faded I cut off, and immediately more spikes have begun to grow from other and same buds. Are these more flowers or new bulb growth? I did not know. I imagine if flowers, re-potting would be injurious?—JUDY.

3680.—Tap-water.—Will tap-water obtained from the waterworks, containing a quantity of soda, injure plants in the greenhouse that are watered with it? It also left injurious to plants out of the greenhouse, and if so what can I do to make it fit for use for either purposes or for syringing? I should be glad of an answer from any person who has had to deal with such water.—J. R.

3681.—A plague of ostarpillars.—Should be glad to know what is the best remedy for a plague of ostarpillars? The Gooseberry-trees are fast being cleared of all their leaves, and the Red Currants similarly, but it seems the Gooseberry foliage is the favourite. I have tried paraffin and water (two glass and half to gallon), also Jay's Disinfectant, but they are as active as ever.—J. WHEELER.

3682.—Sewage in the garden.—I have a pump in my garden connected with a tank to which all the sewage of a large house is conducted, together with drainage water, by a pipe about 100 yards long. My gardener doubts whether the liquid pumped up is fit for use as liquid-manure in the garden, and as I am not well up in the subject myself I shall be much obliged if you will trouble me with any information about it.—G. J. JOURNAL.

3683.—Management of a Vine in a pot.—Would "J. C. C." kindly give me a little information respecting the management of a Grape-Vine, in a 16-inch pot? It has two rods, one of them is 3 feet long, the other 6 feet long. The longest rod has now ten bunches showing. Should I pinch back at two leaves beyond the bunch? Also should I pinch back all shoots on both rods? How many bunches may I leave on? It is a white Grape, but I do not know the name of it. I intend to plant the Vine next year in an inside border in the greenhouse. The border is 12 feet long by 8 feet wide, the bottom is broken hillocks and stones, with about 1 foot of soil on the top of drainage. How much more depth shall I require?—FURZE.

3684.—An allotment question.—I have an allotment of 10 perches, which I of a farmer, paying him 6d. per perch, with others, which I took of his agent last summer, it being the half of 20 perches held by a man who does not cultivate his 10 perches, which, of course, has got very foul, and at the present time is overrun with Collifoot, Dandelions, Thistles, &c., which are flowering and seeding my ground. What power have I to stop it at once? I have made an offer to the agent—it will give me immediate possession I will pay the rent from March 25th last—when he refuses, but promised to get the ground dug up last summer, but never set about it. Can I force him to dig the ground up at once? If so, how should I proceed in the matter? I may add I am a poor working man, and cannot afford to consult a collector in the matter.—FOUR LANE.

3685.—Questions for a Surrey garden.—I have got the Apple and Cherry-trees kindly recommended in GARDENING (and much ado I have to keep them alive in this terrible drought). One thing puzzles me—the Cherries are standards about 8 feet high below the graft, then comes a bunch of about four trunks at the foot of some long straight shoots, each 18 inches or 2 feet long. Ought these to be pruned back, and when and how many eyes ought there to be cut off? The Apple-trees are in much the same condition. Can I make a Mushroom-bed now in the open air without a frame? How ought I to cut back Roses this year for pegging down next year? Has anyone had bushes little over 1 foot high of Reine Marie Henriette and Chryse Lefebvre. I ought the shoots, when they grow to be pegged so as to touch the ground, or how high? I planted in November last a hedge of Thuja Lobbi on the top of a newly made bank 3 feet high by 5 feet wide. It looks quite brown and dead. Would it be any good to cover the roots with Cocoa-nut-fibre? It is difficult to water sufficiently as no hose can be used. The soil of the bank is good loamy turf. How can I save the trees?—IGNORAMUS.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

3686.—Spanish Iris (W.).—Although late it is best to plant your bulbs of this Iris at once.

3687.—Syringing greenhouses (B.).—This question is purely local one; we cannot advise you to experiment in your own neighbourhood.

3688.—Rhododendron fragrantissimum (Bristonia).—We should say you can procure this Rhododendron at any nursery where their culture is made a speciality of.

3689.—Grass edging for borders (Amateur).—The best way to form Grass edgings to your flower-borders will be to procure some good turf, and lay down as for lawn making.

3690.—Australian seeds (Antipodes).—The plants that you may raise from the Australian seeds sent you, we should say, would succeed in the temperature of an ordinary greenhouse.

3691.—Cypripedium barbatum J. Leigh.—This plant differs from C. insignis, inasmuch as it does not care for loam; but it should be grown in well drained pots, in peat-fibre and Sphagnum Moss.—M. R.

3692.—Blanching Celery (Amateur).—This term applied to Celery simply means to whiten the leaves of the plant by drawing the earth up around them, and thus, being in darkness, they become white in colour.

3693.—Building a greenhouse (B. S.).—The better way would be to consult a respectable greenhouse builder, who would, on doubt, give you satisfaction. We cannot give plans or estimates for such structures.

3694.—Unhealthy Bay-tree (Laurus).—The best plan would be to prune the tree back rather hard, and mulch the roots well with manure, and give good soakings of water in dry weather. This treatment might restore it to health.

3695.—Olema-leaves turning yellow (H.).—The probability is that you are right as to the cause of the Olema-leaves turning yellow—viz., want of water at the root. Give it a thorough soaking, and then mulch with short decayed manure.

3696.—Evergreen Japanese Aralia (Aralia Sieboldi) (Scotia).—The evergreen Japanese Aralia is a very spreading plant with a single stem. This is the best and most effective way of growing—all it needs to keep it bushy is abundance of light and air.

3697.—Heat of vinery (B.).—The temperature in the newly-planted vinery may range from 55 degs. at night to 85 degs. and 90 degs. in the day time when the sun is shining, and make all possible use of the sun's rays by closing your house early in the afternoon.

3698.—Budding Roses (J. B. D.).—Roses can be budded with success on the suckers that spring off from old stocks; but re-planting your garden with young Rose trees on their own roots, or worked on the seedling Brier stock, we should imagine, would be your best plan.

3699.—Creeper to cover a roadway (Archway).—Plant a strong-growing Clematis to run over and cover the archway you wish to hide. There are now many varieties, and the colour of the flowers is very varied. They can be obtained easily from most nurseries.

3700.—Vines bleeding (W. H.).—It is difficult to stop the bleeding of Vines if, in any case, a branch is broken off, when the sap is in active motion—in fact, it is almost impossible to arrest its flow. Try an application to the wounded part of the ordinary painter's knotting.

3701.—Planting out Calceolarias (Bedder).—These are very hardy plants, and may, generally speaking, be placed in the open ground about this time with safety. In exceptionally cold localities it would perhaps be wiser for you to wait for a week longer before planting out.

3702.—Camellias and Azaleas in unheated house (Streatham).—Let the plants complete their growth and set their flower-buds in the heated house, and when that is the case, you can transfer them to the unheated one, and give abundance of air during the summer season.

3703.—Diseased Strawberries (Fruit Grower).—If you will let us know the name of the Strawberry-plant sent, we may be able to tell you the cause of their dying off so. Are they Sir C. Napier or British Queen. These are the sometimes very capricious as to soil and situation.

3704.—Marooned Niel Rose-leaves falling off (Leicester).—It is evident the Rose is infested with red-spider. You probably kept the house too hot and dry, and maybe do not water sufficiently at the root. Syringe freely, and avoid high temperature. This may help you.

3705.—Dracena dying (Bessie).—Probably the cause of the Dracena dying is the low temperature of the room in which you have grown it, and the exposure to the cold draught of an open window. Plants of nearly all kinds are impatient of draughty places, and none more so than the Dracena.

3706.—Raspberry canes (C. P.).—The young suckers that are now springing up from the roots of the old Raspberry-canoe must be allowed to remain where they are now growing until they have completed and ripened their wood in this autumn, when they can be transplanted as you desire.

3707.—Mnlobing fruit-trees (Evesham).—Allow the mulch over the roots of the fruit-trees to remain throughout the summer, as then is the time of its greatest value, its main use being to prevent evaporation, and thus the trees do not suffer so much from drought, and their general health is much better.

3708.—Cypripedium ineigne (J. Leigh).—This species is best grown in pots, which, however, should be well drained. It is a plant which is not very particular to soil, but I like to use peat-fibre and chopped Sphagnum, mixed with some nice yellow fibrous loam, from which most of the soil has been shaken.—M. R.

3709.—Syringing Rosee under glass (Rose Amateur).—Syringing night and morning during the growing season, or they will speedily become infested with insects and lose their foliage. If done with care it will soon injure the Rose, and then the best use for the purpose (always, if possible) clean, tepid soft water.

3710.—Hiding soil in a garden (Suburban).—If the soil is that of the flower-bed, then in that case you cannot do better than use Cocoa-nut-fibre value spread over the bed; but if it is the ground used for the culture of Vegetables or fruit-trees, then the only allowable plan would be to use a mulching of decayed manure.

3711.—Protecting Pear-trees in bloom (Pawson).—It is a good plan to use protection for the blossoms of your dwarf figs bushes against frost, and it can be easily done by having a light framework of wood or iron placed over them, and canvas coverings attached thereto to let down at night and to roll up in the daytime.

3712.—Vines losing their leaves (Friedwink).—Perhaps the Vines have become overdy at the root some time during their season of growth—that would cause them to lose their lower leaves; or the temperature of the house in which they are growing has been allowed to fall too low. Vines delight in abundance of heat, light, and moisture.

3713.—How to use guano (Mauve).—The best way of using guano for pot plants is to give it as a liquid manure, adding a thumb-potful of it to about 4 gallons of water. Let the mixture settle, and use, in a clear state, about two or three times a week. You will find this a better plan than sprinkling the guano on the surface of the soil in a dry state.

3714.—Ceanothus turning canker (G. Hudson).—I should think that they must have been over-watered before they could rot properly, and I do not like them to be grown under Cucumbers. Give them more light, see that they are watered carefully, and that they are well drained. There is time enough for them to recover and to make good hulbs before autumn.—M. B.

3715.—Propagating Hydrangea (Propagator).—The best time in the whole year to propagate Hydrangea is the month of August, as by that time the growth has become firm and mature, the cuttings can be inserted singly in small pots in sandy soil, and if kept close in a warm frame for a time, they will soon take root, and can then be potted off as desired, using, if available, a rather heavy loamy soil for them.

3716.—Pinks, common Pansies, and Arabis (Plant Lover).—Pinks are best propagated in July, using strong shoots which will strike freely in light, sandy soil under a handlight in a shady position. Common Pansies are easily increased by division of the old roots in August and September, and they will thrive well in any shady, cold frame, and when rooted plant out in beds. Arabis is increased by the root cuttings, by division of the roots and replanting in autumn or early spring.

3717.—Dendrobium noble (J. Leigh).—Well, you have asked me a question about pruning this plant, and I do not much believe in the process, but you may safely cut away the hulbs that have flowered, because as this plant blooms naturally upon the two-year-old hulbs, you will not injure them in any way. How it is I do not know, but in the case of pruned plants that I have seen, they have flowered upon the last made hulbs.—M. B.

3718.—Colognye Maesangenna.—G. S. W. sends me two flowers, saying he has a plant with five spikes, and the smallest number of flowers upon either spike is twenty-three and the most twenty-seven, and speaks of it being beautiful. I have no doubt but it is, and the variety too is very good. This is one of the fine plants we have to thank Mr. Sander for; I do not know its native country, but it does best when grown in strong heat and moisture.—M. B.

3719.—Odontoglossum maculatum (James Elliott).—The flowers seem to appear to have been eaten by a beetle or some small snail. I should think my friend neglects the examination of his plants after dark, and thus these noxious pests have an undisturbed possession. During their busy feeding-time, you should go over the plants by the light of a candle some time about ten o'clock, when you may catch them at their depredations, and you will by this mean rid yourself of them.—M. B.

3720.—Colognye fasciata (J. Bierman).—This is the species you send, I opened it in the dark, and the odour was simply detestable. I never before was so taken aback with this species. It is a fine, strong spike, and you should grow it in a hanging-basket above the line of vision. In such a position the creamy-white flowers, marked with reddish-brown and yellow, will have a very pretty effect, and their odoriferous perfume will not have any effect in the house. It likes the East Indian house to grow in, but it may be well kept in the cool end of the Cattleya house during the resting season, at which time it should not be kept quite dry.—M. B.

3721.—Vanda Kimballiana (M. G. W.).—This is really a beautiful plant; my enquirer says, "he thought it was like a Vanda, but he finds it is not, for which he is very thankful." Well, if you have a plant that is well established, you will see no affinity to the Vanda you name, for the leaves, although rounded below, have a deep channel in front, and these are of a very deep green hue. Then it is a very free bloomer, having from six to seven or eight flowers upon a spike, each flower measuring about 2 inches across, the sepals and petals being pure white. The large middle lobe of the lip is bright purple, having some spots and markings of red and yellow on the side lobes. We all know, beside these beauties, it is a plant that will grow with the Odontoglossums, only requiring a more sunny position in the house, and in such a position I see the plants doing better than I have yet seen it in Mr. Lowe's Nursery at Clapton, who were the importers of this plant, through my esteemed friend, Mr. Boxall. It should be planted in sweet Sphagnum only.—M. B.

NAMES OF PLANTS AND FRUITS.

*. Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the EDITOR OF GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C.

Name of plants.—E. J.—Dendrobium superbum. —William Parsons.—1, Gonoloparis scolopandroides; 2, Adiantum tenerum; 3, Pteris Kingiana; 4, Chelidonium alabamense. —S. J. B.—All forms of Dendrobium nobile, but not a good flower amongst them.—N. P.—Aloha quinata.—G. G. Wells.—We do not recognize the hulbs; perhaps they are not yet strong enough to flower. —H. W. Trenchard.—1, Juncus-like Epimedium; 2, H. D.—Habrothamnus ciliatus.—Dick.—H. C. (Prunus Padut).—J. C. A.—Snowdrops (Hakel-trepters).—L. Warrat.—Cristobolium nobile. —C. L. Butler.—The Fern is apparently a Lastrea species,

but send again a fertile frond.—Robt. Greening.—Dog (Cornus Mas.).—Alderson.—Specimens sent were rotten from being packed in wet moss.

Names of fruit.—Ardmore.—The Apples were duly received and sent to an expert to name, but they were too much shrivelled to identify.

TO CORRESPONDENTS.

Amaturus.—Certainly it will be a good plan to shade the frame used for raising seeds in during the heat of the day.—Amateur Carnation Grower.—You can name the seedling Carnations as you desire, and there is no formality to go through, the matter being an entirely personal one.

Miss Dayrell.—Apply to Mr. A. G. Butler, The Lilies, 124, Beckenham-road, Beckenham.—Amateur, East D.—We know of no book that will help you so much as reading GARDENING regularly and attentively; any queries sent shall receive prompt attention.—C. E. W., Constant Reader.—Springs the Peaches freely with Tobacco and soapy-water and give plenty of water to the roots. Dress over the Gooseberries with Hellebore-powder; mind, the latter is poisonous.—J. Keenan.—A fine flower of Rhododendron Nuttall. If you have given the plant any special treatment we should be glad of a note from you on the matter.—East Kent.—We know nothing of the book you name.

POULTRY & RABBITS.

3423.—Chickens dying.—Laburnum seeds are usually looked upon as poisonous, and if "S. R. G." has any doubts about the matter he should arrange to keep the birds out of reach of the seeds. It is quite possible that the chicks referred to in the query were poisoned; still, it is not absolutely certain that this was the case, for the symptoms described are not unlike those which would be apparent in the case of chicks suffering from pneumonia or inflammation of the lungs. The weather too might have affected them, as the nights and early mornings have been cold.—DOULTING.

3454.—Pullet continuing to lay miniature eggs.—"Pullet" can do nothing to mend matters. The bird in question is probably imperfectly formed, and the best way to deal with her is to kill her at once. It may be taken as a good rule to follow, that whenever there is any defect in the eggs regularly laid by a hen, Duck, or Goose, it is more economical to get rid of the bird than to doctor her, since no improvement can be expected until egg production has been temporarily suspended, so that the egg-organs may receive a rest; and it frequently happens when the bird begins to lay again that matters are as bad as ever. The fact is, the egg-organs cannot be interfered with to any extent, and it is wiser in the end to leave them alone.—DOULTING.

BIRDS.

3722.—Zebra Finches.—I should be indebted to "Mr. A. G. Butler" or any other reader interested in foreign birds, if he or they could assist me in the following case. I have a pair of the above birds which I put up for breeding last year, but without any result. The hen, however, laid continuously throughout the summer, but unfortunately the eggs which she laid were broken by the cock before any succeeding ones were laid. I do not, however, think the cock did it wilfully and intentionally, but merely out of curiosity, as he was very attentive to the hen, and was not at all spiteful. As "Mr. Butler" undoubtedly knows, it is the habit of these birds to sleep in the nest. This, I think, in some measure accounts for the breaking of the eggs. I separated the birds in October. Some naturalists, I believe, advocate that the eggs should be removed from the nest as soon as they are laid. I accordingly abided by this, but before another egg was laid the egg had taken out dried up. I was advised that I ought to separate the birds when the first egg had been laid, but I thought perhaps if I did so the hen would perhaps lay no more, or if she did the eggs would be unferile. Usually I may mention that I give the birds the best possible attention. Their staple food consists of Canary and Millet in about equal proportions. In addition to this they often have a good supply of Hyde's gravel, which is rich in lime. This, I believe, keeps the birds in health, and guards against egg-binding. They also daily have a plentiful supply of Groundsel, Chickweed, Watercress, &c., but I notice they no seem to care much for it. I sometimes give them a little pulverised oyster-shell which, I believe, has the same properties as Hyde's sand. Fresh water they get every day. Occasionally I give the birds a bath, but they do not make much use of it. I shall be glad if "Mr. Butler" could give me a remedy for the above, and I should esteem any hints on the general management? Could he inform me how long the eggs should retain their vitality and at what intervals they should be laid? I thank him in anticipation.—HARVEY M. BARKIN.

3493.—Bullfinch after moulting.—Caged Bullfinches are always more susceptible than other wild British birds, and very few attain a respectable age. Even in a large aviary I have rarely found them live for more than two or three years. When moulting, like all Finches, they should be supplied with nourishing food, and cattle-fish bone should never be banished.

Bathe the bird's legs in hot water (about 120 degrees or comfortable to the hand), then dry carefully with a piece of flannel, and stand the cage near the fire with a covering over it to keep off the glare. In about half an hour move it away from the fire, let two drops of salad-oil drop on the surface of the drinking water, and give the bird a little pan of egg (hard-boiled) for a few days. The day after its bath and every day for a week put ten drops of Pariah's Food into the drinking water, and stir it until thoroughly mixed. If this treatment does not cure the bird, I am afraid its case is hopeless.—A. G. BUTLER.

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GARDENING ILLUSTRATED.

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Founded by W. Robinson, Author of "The English Flower Garden."

MAY 13, 1893.

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ROSES.

SEASONABLE WORK FOR MAY.

Now that Roses are pushing into growth freely, and much warmer weather has set in, work among them has come on apace. The two chief points now are to keep the growth clean and to stir the surface-soil among them frequently. The latter has much to do towards the healthy appearance of Rose foliage, and materially assists the plants. Owing to the spell of fine weather—we being absolutely minus rain for several weeks past in mid-Sussex—it will be well to give a copious watering to Roses upon smooth walls. These are now in full growth, and with the wall's absorption of moisture as well as theirs, the soil has become much too dry in many instances. No half measures will do when watering Roses out-of-doors; you should either give them a thorough soaking or leave them alone. The green-fly has been very troublesome out-of-doors already, and must be constantly checked if good and healthy Roses are to be secured. Syringes frequently, early morning being the best time. There is no need to use a strong solution of insecticide; even clear soft water, applied with a fair amount of vigour, will knock off and kill many of these pests. It is much better, however, to use a little insecticide. Draw a little soil around dwarf stocks; also around newly-planted dwarf plants. This helps them very much, and is a great gain to the lower eye breaking into useful suckers later on. Brier-stocks should be looked over, and all superfluous breaks rubbed off. The stems of standard Roses are also more apt to push out Brier growth at this season than during any other part of the year; needless to say, these should be rubbed off as soon as they appear. Those of my readers who budded a few stocks last season, as per instruction given in GARDENING, must now afford the young Roses a due amount of attention. Dwarfs should have stakes inserted firmly, 2 fast to 5 feet in length, according to the height of the variety. The climbing Teas and Noisettes, also such strong growers as Ulrich Branner, Gabrielle Luizet, &c., among the Hybrid Perpetuals, will also need the taller stakes. In tying the young Rose to these great care is necessary at first. If drawn in too tightly they will break out at the union; if tied badly they will often fly out through the gradual pressure of growth. At the first tying do it only temporarily, and merely draw the young Rose in the direction of the stick. At the second time of going over them you can draw the Rose into its proper place and make a permanent tie. Maggot will be putting in an appearance during this month, and must be closely looked after, hand-picking being by far the quickest and surest remedy. Under glass Roses must have abundance of water, and a liberal supply of weak liquid-manure will be very beneficial. I would warn against applying liquid-manure while the plants are in a dry state; this should never be done, as the roots are apt to absorb it too quickly, and cannot

benefit to the same extent. Besides, it often injures them when the same strength applied while the soil was fairly moist would have done them good instead of harm. Give plenty of air whenever suitable now, but take great care to avoid the keen draughts so prevalent during May, especially when the wind is in a cold quarter. Slight shade should be given, and the atmosphere of the house kept rather moist. P. U.

CHRYSANTHEMUMS.

CHRYSANTHEMUMS FOR SHOW.

3665.—Standards: Should the plants selected for growing as standards have made their first natural break caused by the formation of a flower-bud at the extreme point of growth, which checks for a time the progress of the plants, and which is termed the natural break, the correct way to manipulate the shoots is to remove all but the strongest, providing, of course, the desired height—3 feet—has not been reached. Train up the new shoot quite straight, pinching out the point when high enough to induce other growths to be made, laying the foundation of the future head. Reduce to four the shoots which result from the topping, and when these have grown 6 inches long again top them, continuing this process until the requisite number of shoots are obtained to cover the trellis; but topping should not take place later than the middle of June. The number of flowers each plant is expected to produce must guide the cultivator as to the number of times the shoots should be topped; it is a mistake to attempt to produce too many blooms on one plant. It is far better to limit the number and have them of better quality. Plants of the small varieties of incurved kinds, such as Mrs. G. Rundel, if the heads are grown, say, about 2 feet in diameter, and about 1 foot 4 inches in depth, fifty blooms will be enough; but in the case of larger-flowering sorts, such as Jardin des Plantes or Lord Wolesley, thirty flowers on the heads would be ample, one bloom only being allowed to develop from each shoot. There are various forms in which the heads are trained; convex is, perhaps, the most suitable for general purposes. Bend pieces of strong galvanised wire of the length named over, fastening each to a circular ring as a foundation, and securing all to the top of a centre stake. Fix the framework from the bottom wire to the centre stake with the aid of two pieces of stout wire stretched across from one side to the other, as this prevents the head swaying about. Directly the plants are in their flowering-pots—10 inches in diameter—the framework on which the shoots are to be trained should be firmly fixed in the pots. Commence training the branches as soon as they are long enough, as the foundation is more easily formed at this stage than when the shoots are longer and harder. When the bloom-buds are formed, which will be early in September, dibble to one on each branch, and when they are swelling, give the plants their final tying, as the shoots will then have plenty of time to right

themselves, the blooms standing then fully 6 inches above the framework or head. In this way severe training is not so easily detected as it is if done a few days before the plants are in bloom. Specimens: As noted in GARDENING for December 3rd, 1892, the point should be pinched out of the plant when 4 inches high, repeating the operation on the new shoots when 5 inches long. Continue this until the middle of June, then cease, allowing the shoots to multiply at will afterwards. There are two methods of producing specimens. One is growing them to a large size, say 5 feet in diameter, with 200 blooms on each plant; the other is limiting the plants to about 3 feet in diameter, with from 30 to 50 blooms of high class merit, quality being the first consideration. Plants of this type are much more desirable than those grown for mere size, as the quality of the flowers must then be a secondary consideration, and plants unduly stretched out are ungrainy and not nearly so useful in a decorative point of view. By the middle of May the plants should be

PLACED OUT-OF-DOORS in an open position, safe from strong winds, but where they will have the full benefit of the sun. About the first week in June the plants will require their final shift into 12-inch pots for the largest growing kind; an inch or so less will suffice for those of medium growth. Plunge the pots half their depth in ashes; this prevents the soil drying quickly and keeps the plants firm, as it not secured in some way they are liable to be blown over in some situations. By the end of July the plants will be furnished with a large number of branches, some of them 2 feet long; at this stage they must be got into position. Commence by tying the branches out, having in view the size required, depressing them as may be desirable. Manipulated at this stage the branches bend more easily than they do later in the year when they get firmer, and when the plants are in flower bent stems are not so apparent as when training is done at a later stage. Bending the branches induces them to break into growth more freely. The plants make a natural break about the middle of August. The branches produced from this break will show a flower-bud about the middle of September. These are the buds which should be retained for the production of the flowers, retaining but one to each stem. Pyramids require the leading shoot topped at about 9 inches high, the best shoot following being taken as a leader again, the side branches trained out regularly. A wire hoop about 18 inches in diameter is fixed at the base of each plant, supported by two cross-sticks affixed to the pot in which the plants are to flower—10-inch ones—a central stake of the requisite height being at the same time inserted. Smaller wires can be taken from the hoop to the top of the stake, if desired, to which the branches can be secured. The last topping may be done as late as the end of June in the case of the late-flowering sorts, the earlier-flowered kinds a fortnight later. As in the case of the specimens one bloom to a shoot is sufficient; dibble to that in the centre, as being the best directly they are large enough to handle. Plants 3 feet high and 3 feet throughout at the base are large enough for any purpose. The details of potting, water-

ing, feeding, and housing the plants are the same in all methods of culture. The plants should now be in 6-inch and 7-inch pots, preparatory to being placed in those they are to flower in. The compost for the last shift should consist of three parts fibrous loam, one part of half decayed horse-manure if the loam is heavy; if light in character that from the cow-house partly decayed is best. Add half a part of wood-ashes and charcoal mixed, and enough sharp silver sand to keep the whole porous. To every bushel of compost add 2 lb. Thomeon's or Innee's Vine-manure. Drain the pots liberally and carefully, ramming the soil firmly into the pots. Water will not be required for at least a couple of days after potting. After that time do not allow the plants to suffer for want of it at any time. Syringe the foliage twice daily during hot and dry weather. When the pots are full of roots the plants need a stimulant of some kind. Scott-water, made by placing half-a-bushel of soot in a sack and soaking the sack in a tub of water, is beneficial to the plants. Liquid made from cow or horse-dung is also valuable. Failing either of these, apply some of the many artificial manures in the manner recommended by the vendors. Chrysanthemums like a change of food, so, whatever kind is given to the plants, do not continue the same sort more than a week at a time. Toward the end of September the plants will require housing. A cool airy greenhouse where the plants can stand near to the glass is the best position they can have. Abundance of air should be admitted at all times, and in the case of wet or foggy weather, if the hot-water pipes are made warm the air of the house will be rendered more hygienic, a circumstance all in favour of the free and perfect development of the blooms. E. M.

GARDEN WORK*

Conservatory.

There are several useful "follage" plants suitable for conservatory work and for general furnishing which may easily be raised from seeds sown now in heat. *Aralia Sieboldi* grows very freely from seeds, and useful stuff can be had in one year in 5-inch pots if helped on in a warm house or pit. *A. S. variegata* must be obtained from cuttings; root-cuttings will strike very well. *A. papyrifera* (Rice-paper plant) can be struck from root-cuttings each 2 inches long of the thick, fleshy roots. It is necessary in the case of *A. Sieboldi* to obtain freshly imported seeds, as old seeds will not grow. *Grevillea robusta*, *Dryandra indica*, and other green-leaved kinds, the seeds of which are cheap, sown now in heat will be up to a fortnight, and if pushed on will make nice little stuff in 5-inch pots by the autumn, and may be transferred to 6-inch pots spring following. *Aucularia exoniola* (Norfolk Island Pine) grows freely from good seeds, and in a small state, or till 5 feet or 6 feet in height, has a good deal of decorative value. Larger plants require a large house. *Cyperus altissimus* and *C. densus* are useful plants for filling fireplaces, or for furnishing dark corners. The variegated *Carex*, of which there are several forms, are very useful, and can be easily increased by division. *The Colusa* has been dropped by fashionable people, though two or three of the brightest coloured varieties will give character to sombre-leaved things. Very light and effective are the groups of plants confined to white and green. White common flowers are plentiful just now. *Spiraea* and *Dentaria* in a large mass, mixed with *Ferrea*, *Maiden-hair* and *Pteris*, are very effective, and may be used in contrast to groups of *Peiragonium*, *Fuchsia*, &c. The straggling groups of *Fuchsia* are always thick and massy, making a foil of foliage, and white varieties separate, making a foil of foliage for the light colours, and dark green foliage for the red flowers. Healthy young *Palme* associate very well with dark *Fuchsia*, and young plants of *Cyperus densus* also form a happy contrast to the light flowers. It is just as important to have plenty of the harder kinds of foliage plants to set as foils to the flowers as it is to have flowering plants enough to keep the house gay. Young plants of all kinds should be potted on. *Chrysanthemums* are now coming on, and usually a long one. The plants must be securely staked, and should occupy a sheltered situation—i.e., sheltered from strong winds. It is possible to give plants, even in a dry time like the present, too much water, and a waterlogged plant is never of much use, so some care is necessary.

Unheated Greenhouse.

There is not much danger to be apprehended from frost now, and virtually, for the time being, all greenhouses are unheated artificially. Fire-heat, when used late in the spring, often does more harm than good, simply because the fire is not closed or watched, and the heat kept down during the day. If the house is closed, and the heat kept down in the afternoon, shutting up a good deal of the sun's warmth therein, even if there should be a few degrees of frost it will not penetrate the house. The growth of the plants where no fire-heat is used is generally fresher and brighter than where a fire is kept in a fluctuating kind of way. Tuberous *Begonias*, *Fuchsias*, and *Lilias* in variety, including *Asarum* and *Jacquinellum*, are now in the midst

of growth. Keep in a light position, and water sufficiently when required. *Hydrangeas* of sorts, *Myrtles*, and *Roses* are now working into position.

Stoves.

Rearsave the plants often, and that all may have space for reasonable development. Many things will do now in an intermediate house or warm greenhouse. Tuberoses coming into flower should have liquid-manure. Shift on to larger pots the early struck cuttings of the usual class of winter-flowering plants. If kept moving as freely as possible good plants may be had in one season. *Violets* are showing plants in summer and will grow specimens are often useful in a collection of stoves and greenhouses at an exhibition. There are plenty of plants to select from now, but it is not always easy to make up a good dozen in August. Outtings of the young shoots of *Gaedenias* will strike now in bottom-heat. If there is a border or bare wall space anywhere set a plant or two of *Euphorbia Jacquiniflora* against it, and train it up *Eucharis Lilies* which require to be reported may have attention now. I simply shift on into larger pots, until they reach the largest size we have, where they remain, helped with liquid-manure, for several years. The less disturbance there is at the roots the better. Use a rough, rich, open compost, with plenty of drainage.

What to do with Spare Houses.

If anyone is fortunate enough to have spare glass-houses, fill them with Tomatoes. These offer the best chance of paying expenses. Cucumbers also may be planted, but the two should not be planted in the same house. Tomatoes may be well grown in boxes. The best thing in this way are the Orange-boxes, which may be obtained very cheaply from the fruiterers. Rough old turf, with a little soot and bone-meal, will do very well for Tomatoes in a confined space. Leave room for top-dressing, and give what training is required regularly.

North House.

Very useful this cool structure has been during the last six weeks. Without many of the flowering plants would have lost their attractiveness much earlier than usual. After the *Azaleas* are over the house will be filled with *Pelargoniums*, *Fuchsias*, and *Heaths*, the latter standing on a stone slab along the front of the house, where they will have abundant ventilation, and where the man in charge can reach every plant with his knuckles when he goes round with the water-pot.

Window Gardening.

Window-boxes may be filled now, and kept under cover to grow and fill up before placing them outside. *White Daisy*, *West Brighton Gem Scarlet* "Geraniums," with *White Ivy-leaved* "Geraniums" and *Blue Lobellias* alternately among the front. The boxes may be varied by dropping in a *Yellow Daisy* or two, or *Yellow Calceolarias*, with *Pink Ivy-leaved* "Geraniums" instead of white. The *Ivy-leaved* "Geraniums" should be large enough to fall over the front of the box. Double-flowered *Nasturtiums* work well in along the front of the boxes for a change, and *Creeping Jenny* may be planted to fall over the front. Good soil must be used, and the boxes should be rather thickly planted. The plants inside the window which have done flowering may be set outside to ripen growth. At present the windows are gay with *Pelargoniums*. When these are passed Tuberous *Begonias* will be coming in, as will also *Fuchsias* and *Zonal Pelargoniums*. All things require more water now than they did a month ago. Small bushes of *Heliotrope* and *Mikrocoetis* are very sweet. Some of the spikes of *Mignonette* now offered for sale are very fine.

Outdoor Garden.

The drought has been and still is very trying to many things. There has been unusual brilliancy among the spring flowers but it has been short-lived, and, in many instances, the bulbs may soon be removed and the beds got ready for the usual summer bedders. As the spring has been so bright and warm, it is not unlikely some part of May, as a rule, may be cold and frosty, therefore avoid, if warning may be uttered, about potting out bedding plants too soon. The Queen's birthday, 24th of May, North of London, at any rate, is quite time enough to think about bedding out; and in the meantime get the plants thoroughly hardened by exposure all day and on mid nights also. Crowded borders of *Herbaceous* plants, especially where the borders are narrow, margins round groups of trees and shrubs, have not been quite a success. Every four years, if the plants are to do any good, these borders should be overhauled, manured liberally, trenched 2 feet deep, and the plants rearranged as to afford a little more space to each group. It would probably, in most cases, be inconvenient to have larger groups of all the plants grown, as space could not be found for them, but some of the special things might be permitted to swell; and in this respect each might (I expect would) indulge his or her own taste. Personally, I should like to see large, bold groups of the hardiest *Lilias*. It is of no use to plant delicate things in the average garden. We will leave those for the wealthy amateur who can and does experiment.

Fruit Garden.

Much has been written about thinning Grapes; still, every beginner who has no old hand to give him a practical lesson has to fight it out, guided chiefly by his native intelligence. An objection from an old practical hand, who knows something of the Vines and the load they are able to carry is always valuable, but, fail this, the beginner has to do his level best with the information he has been able to pick up from papers, &c. One of the worst Grapes to thin is the *Alcante*—in fact, I should say it is the worst, and if not taken in hand in good time it will be very difficult to do it at all. Cut away quite two-thirds from large bunches. A good many berries must be cut from the centre of the bunch. *Hamburgs*, again, may have quite two-thirds of the berries cut out of large bunches if the berries are to swell to a large size. Grapes intended to keep late should be thinned more than if they are to be cut as soon as ripe. Don't Muscat of Alexandria over with the pollen of *Black Hamburgs*. There is always plenty of pollen on the latter, and if the Muscates are late in blooming some of the pollen must be collected from the *Hamburgs* and kept in a tin box till required. Keep a sharp look-out for the *Gossypium* caterpillar, and apply

the usual remedies. *Hellebore* powder is the best and cheapest; may either be dusted on or mixed with water and passed through the syringe. The *Good Moth* will now be laying its eggs upon the young Apples, usually in the cup or eye of the Apple. Spraying with Paris green (a preparation of arsenic), used at the rate of one pound (a preparation of 200 gallons of water, or the proportion will be the same for small quantities. Will require more than one dressing.

Vegetable Garden.

There should be no French Beans in houses now, as I think the hot weather has made them unsafe to eat in *Vinerias* or *Peach-houses*. But if planted in pots and frames, French Beans may be had till they can be gathered on the south border outside. Draw earth up to *Potatoes* which are through the ground. *Sharp's Victor* in frames, will now be fit to dig. This is a good boiler, and the quality is excellent. Sow *Spinach Beet*, *Beet*, *Drills*, *15 inches apart*. Rampion makes a very nice addition to the salad-bowl. Sow now thinly in well pulverised soil. Scarcely any covering is required, as the seeds are so very minute. I generally cover by lifting a little soil over with a turnip riddle. The plant has a little tap root like a *Turnip Radish*, which may either be eaten like *Radishes* or be sliced up on the salad-bowl. It is most unlikely that some seeds may fall to grow. Where such failures occur sow again; first, thoroughly moistening the soil the evening before; next morning draw drills and sow the seeds, and shade with mats or canvas till the seeds germinate. Keep a stock in reserve of young *Cucumber* and *Melon* plants to fill frames as they become vacant. Erry bit of glass should be profitably utilized. Tomatoes under glass are pushing on fast. The season in planting and sowing is very considerable. Do not be in a hurry to set out Tomatoes outside. We shall probably have from weather with cold winds yet. *Cucumbers* in warm houses must have abundance of water both at the roots and also in the atmosphere. If the roots are started the fruits will be better. E. HODAY.

Work in the Town Garden.

All but the most tender description of bedding-plants, such as *Calceolarias*, *Alstroemerias*, and *Freesias*, ought now to be standing in 4-inch pots or frames, with more or more air given every day, and a little left on nights so as to harden them as much as possible. A very light shade over the glass may be necessary on bright sunny days, but the more sun they can stand now the better. The exceptions referred to above will still require a little artificial heat—at least by night, it is in the daytime—so even if the cuttings have not been inserted long they have still time to make good plants, as once rooted they grow very quickly, and it is seldom safe to plant out this class of subject before the middle of June. *Chrysanthemums* of all classes may now be safely exposed in the open air, having been gradually hardened in cold frames. The plants will now, for the most part, be occupying 5-inch or 6-inch pots, and should be getting nicely established in these sizes by this time. Backward plants in small pots may still be shifted on, as there will be nothing gained, even for exhibition purposes, by getting them moved into the flowering sizes for another month yet, and where grown for ordinary decoration or supplying cut flowers only, yet another fortnight will not be at all too late for the last shift. Some growers give their plants an intermediate shift into 7-inch pots, but I cannot see the advantage of this at all (unless in the case of exceptionally forward examples, or plants to be grown on into large specimens), as a strong plant in a "large 45 (6 inch), or "32" (6 inch) pot will go quite well into the 5 1/2 inch or 9 inch size in which the plants are usually flowered. If dwarf plants are wanted the stock should be cut down to within 8 inches of the pot about the end of this month, and be reported as soon as the young shoots are 2 inches long. Window-boxes should now be looked up, repaired, and repainted if necessary. Where the boxes are to be filled with soil and the plants set out therein time will be saved, and a display more quickly obtained, if the boxes are filled and planted at once, leaving them in the greenhouses until the end of the month; this will give the things a good start. Abundance of water is now required by pot-plants of all kinds. Water taken from the mains is often very hard, and where this is the case it is apt to impart an unpleasantly white appearance to the foliage, when freely used. Soft or rain water is far better, and though in towns this is generally so sooty as to be useless for any other purpose, yet it is just the thing for garden use, and should be carefully preserved. B. C. B.

THE COMING WEEK'S WORK.

Extracts from a garden diary from May 13th to May 20th.

Just commenced bedding out by planting the *Calceolarias*, *Asters*, *Stocks*, and a few other things which are very hardy, including a good collection of *Pentstemons*, which were struck in the autumn, and have been sheltered in a cold pit since. It is not wise to trust to old plants of *Pentstemons*. It is true I have had them pass through the winter without injury, but a few dozen or so of hundreds of cuttings occupy so little time and space that one need not be at the mercy of the weather. Of course, it is too early yet to put out anything tender, and that has not been early yet. Plants which have been properly hardened by gradual expansion will stand 2 degrees or 3 degrees of frost. *Syringas* on walls with soft soap and Tobacco-powder. The latter is as good for killing the insects who mixed in soap and water, and syringed over the plants as when used in the form of dust. Pricked-out for sown *Primulas*. Made up hotbeds in pits to be ready for sown *Melons* and *Cucumbers*. I always fill all spare pits and frames with something useful for the bedding plants in houses. The growth has been rapid, necessitating a good deal of pinching. Shifted on *Chrysanthemums* a number, using rough, early loam, enriched variously, which means that we are trying experiments with different manures. Planted a new house with Tomatoes. The house is only just completed; and as the plants were waiting, they were set out as soon as the borders were got ready. The house has been built for more than one purpose. After the Tomatoes are over the house will be filled with *Chrysanthemums*.

* In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, but the quality of results.

followed on with Clocerarias and Primulas, and filled with Tomatoes again in the spring. Tbloned Grapes in a later house. I hope they have set well. I have used Hamburg pollen for the shy sesters. Cleared off bulbs for beds in the flower garden, and preparing them for Geraniums, &c. Have worked up a good stock of *Salvia patens* from cuttings. This is a delightful blue-flowered bedding plant one never has too many of. Earthed up Cauliflowers, Tied up Lettuces. Sowed Turnip Radishes. Planted Windsor Beans for last time. It is just possible, if later Beans are wanted, that cutting down some of the Long Pods will produce a new growth and a better crop of Beans. Mulched Peas with manure. Set out a couple of rows of Celery and half a dozen rows of Leeks with plants started in heat. Planted more Peas in succession. Dusted over Onion-beds with soot and nitrate of soda. Frickeed out a lot of young plants of *Azoreum japonica* sibs. The plants were raised from root-cuttings early in heat. Small bits of the fleshy roots planted like Leeks will grow freely. I have had flowering plants from such root cuttings the same season when started early. Staked out specimen Fuchsias. These are splendid conservatory plants, but they have lost caste of late years. Potted on Balsams. Looked over Peach-trees on walls to thin the shoots and fruits a little more. There appears to be a good crop of Plums if they will stop on. Large old trees would be improved by a soak of pond or river water.

3625.—**Hyacinths and Tulips.**—You may if you like keep the bulbs in the boxes, but

TREES AND SHRUBS.

CHOICE SHRUBS FOR BEDS AND BORDERS.

Beyond the common tangled thickets of shrubs that are found in the majority of gardens, it is unusual to meet with any instances of special culture of the choicer things, which, if they manage to exist in the struggle with their rampant associates, have no possible chance of showing their true beauty. A general unesthetic appearance and lack of interest will always characterize our shrubberies until we alter our methods and realize the value of the many fine shrubs now in cultivation. The thick shrubbery should only be tolerated where it serves the useful purpose of providing a needed screen or covert. Even this need not be the dull, dreary, flowerless thing it frequently is, because vigorous trees and shrubs that are lovely and variable in leaf and blossom are plentiful. The object of this article, however, is more to give a selection of choicer

special preparation and some extra care, but such trouble is well repaid. The culture is simplified and good results are more likely to follow upon a plan of growing things like these in beds and borders, because the soil can be made up to their liking and there is no risk of other root-robbers coming in and devouring what was not intended for them.

AMYGDALUS AND PRUNUS.—The practice of budding and grafting these on needless and unsuitable stocks, and the consequent interminable sucker nuisance, are doubtless responsible for the great scarcity of these, the most lovely of spring flowering shrubs. We went them upon their own roots, and then they are sure to make pretty bushes and handsome groups. The little dwarf Almond is quite one of the early shrubs, putting forth its glowing rosy blossoms in days often dull, cold, and cheerless. Naturally it rarely attains a yard in height, but spreads and suckers freely, so is not difficult to increase. It ought to be a popular shrub. Later on comes *Prunus triloba*, with rosy rosettes studing its slender shoots.



Hydrangea hortensis as a lawn shrub. (See page 140.)

the usual way is to lift them when the leafage has died down, and store them in a dry place during the summer months. You did not say whether they have been forced? If so, you could not very well use them again next season, so it would be better in the autumn to plant them out in the garden, where they will be useful. But if they have not been forced hard they can be used again for the same purpose.—C. T.

3605.—**Flower-pots.**—If you consult the advertising columns of GARDENING you will doubtless discover what you want; but, of course, there is no special merit in pots that are ornamental, and they cost more, and also occupy more space. They are all very well for window-boxes, for spots where the common garden pots would be unsightly. There are many very beautiful designs in pots, and the price depends upon the extent of the elaboration. A good firm is located at Weston-super-Mare. It used to be Mr. Matthews, but he retired, and I forget the name of the present firm. Splendid things in the way of ornamental pots used to come from this place.—C. T.

things, such as we might plant in groups in beds or borders either by themselves or associated with the vigorous and finer families of hardy flowering plants. Not a few would admirably adorn the larger, bolder rock gardens. In a large garden I once visited, all the dwarf, choice conifers had been planted in the way here suggested, whilst the commoner types were also plentiful. The place was altogether overdone with vegetation of this kind. Had flowering and deciduous shrubs been planted in the same way, the garden would have been doubly beautiful and most interesting.

DAPHNES are certainly worthy of the best attention we can give them. The oldest, the best known, and most deservedly popular is *D. Mezereum*. To see this at its best, there should be a group of from six to twenty plants. It is lovely alone, but gains in effect if interspersed with the Partridge Berry (*Gaultheria*), which hides the ground, has ample leafage, and is altogether a charming foil to the profusely-bloomed, but leafless bushes of *Mezereum*. A trio of choice kinds exists in *D. Genkwa*, *Blagayana*, and *Cneorum*. They need a little

Upon the Plum-stock its life is a struggle, usually ending in death; but on its own roots we need not hesitate to plant a group. Beside it will come the little Chinese Plum (*P. sinensis*), a slender, graceful plant with flowers of the purest white, preference being given to the double-flowered variety, although both are highly ornamental.

GENISTEA.—Among these there are several species which are well adapted for the rock garden or choice border. They root deeply, and even in poor soils often do well. There is a lovely double-flowered form of the Common Dyer's Weed (*G. tinctoria*), and it is grafted standard high on the Laburnum. It is infinitely better to plant a group in a bed or on a border. Beside it or near at hand would come *G. praecox*, which is one of the most charming dwarf shrubs of May. It grows into a dense spreading bush, and each season is liberally sheathed with clear sulphur-coloured blossoms borne in racemes. *G. radiata* is another little-known, but pretty species. It is bushy in growth, with graceful arching shoots which are clothed with finely-cut leaves. The flowers appear in the axils of

the leaves and are of a soft canary yellow hue. Last, but not least, comes the Spanish Furze (*G. hispanica*). It is a low-growing kind, rarely exceeding 1 foot in height, but it is hardy, if small, and tenacious of life, rooting deeply if at all favourably planted. It flowers in June, and the little bushes are then covered with gay golden-yellow blossoms.

RUBUS.—The Rocky Mountain Broomrape is a lovely shrub, needing a wall in some localities, but it can be grown as a bush in many places if planted on a sunny border. When so planted it will probably not exceed a yard in height. Its great white flowers are each nearly 2 inches across, like single white Roses, and they have the additional charm of sweet fragrance. *R. odoratus* (the purple-flowering kind) also makes a pretty mass, but it is, perhaps, best kept separate, as it is rather vigorous. The Nootka Bramble associates well with it, for, though not quite so strong growing, it can hold its own, and the two blend into a pretty mass, the fine single white flowers of this last species appearing in striking contrast to the purple ones, whilst the handsome foliage of both is worthy of admiration.

OLEARIAS are a numerous family from the Southern Hemisphere, and those that we know to be hardy are most ornamental, growing into neat bushes, and producing flowers so much like those of a Daisy, that they have been aptly called Daisy-bushes. At present the actual hardness of several species is not known, and experimental planting with a view to testing is desirable, as we want all we can get of such lovely things as these. Concerning *O. Haasti* no doubt exists. It is a delightful shrub, always pretty as an evergreen bush, and during the latter part of summer as white with blossom as it often is when wreathed with snow in winter. Though dense and dwarf, it soon makes a good bush or group if planted where it has nothing to contend against. *O. stellata* is better known under its original name of *Eurybia*, which clings to it, and is likely to be used, although botanists now classify it under *Olearia*. But whatever it is called, it is a shrub that many should try in a sunny spot upon the rockery or border. It has a small crimped leaves and flowers considerably larger than those of *O. Haasti*, in size as well as shape resembling those of a Daisy. The flowers are pure white, and they appear quite early in summer, each one lasting for some time. A little trouble would be well repaid if it resulted in a flourishing group, and such shrubs as these merit attention and encouragement.

CISTUS and **HELIANTHEMUS** are well adapted for sunny, dry banks and borders. Of the first named, such species as *florentinus*, *formosus*, *oreoticus*, *monspeliensis*, *calvifolius*, *ladaniferus*, &c., are some of the prettiest of flowering shrubs. Their liability to injury from cold in winter will check their general or extensive cultivation, but where they are found to thrive it would be wise to make them a feature. A slight protection helps them considerably, and this is easily afforded if the best kinds are closely grouped. Upon mounds or banks they often thrive beautifully. *Helianthemus* are quite hardy, but of lowlier stature. In the way of dense, dwarf-spreading, profuse-blooming shrubs nothing can surpass them. They are simply magnificent in the early summer, and the thoughtful planter would blend them into some striking associations. They give us single and double flowers, and an infinite variety of shades of colour, from pure white and cream to the richest yellow and deepest orange, from palest pink to rich rose. They grow so freely almost anywhere, except in the shade, and they are increased so easily from division or by cuttings, that it is surprising we do not see them largely planted.

KERRIA JAPONICA (the Jew's Mallow) is another of the lovely shrubs of spring, and though we see it against a wall or fence, we do not see enough of it. It does not need protection, except in very cold districts, and, therefore, should be planted in a group. There are single and double-flowered kinds, the former being the more neglected of the two and undeservedly despised. It is decidedly pretty when seen growing and blooming under favourable conditions and away from needless restrictions.

HYDRANGEAS may be grown by many more than they are at present if they are planted out in a bed or border of good soil, which is well drained in winter, but open, sunny, and damp-

ratively sheltered. In a well-drained soil and a situation favourable to the ripening of the wood in autumn, *H. hortensis* (see page 139) will stand a considerable amount of frost and not be injured. The type is well known, and there are several varieties equally fine, such as *stellata*, *Otakea*, and *Thomas Hogg*. The Oak-leaved *Hydrangea* from America, too, is very uncommon, but beautiful, distinct in leafage, with handsome clusters of white flowers. Then there is the hardest kind of all the Japanese species—*H. paniculate grandiflora*. It should have a level spot, a deep soil, be annually cut down, heavily mulched, and watered if very dry weather prevails in summer, and then during autumn a group will be one of the most conspicuous things in the garden.

VIBURNUMS are useful flowering shrubs and fairly popular—at least, the sterile form of *V. Opulus* is—but a charming and choice kind for grouping is *V. plicatum*, a native of Northern China. It is a shrub of great merit. It makes a handsome dwarf spreading bush, well clothed with leafage, wrinkled like that of the Wayfaring Tree (*V. Loutana*), and in the early summer months every branch is wreathed in clusters of blossoms. Individually the flowers are larger and whiter than those of the Snowball Tree (*V. Opulus*).

FORSYTHIAS—The loveliest of these is the slender, graceful *suspensa*. We value it as a plant for covering walls and fences, but many err in supposing it should not be planted away from support. It will make a bush and a pretty group if several are planted, its long shoots being as thickly studded with clusters of golden bells as they would be against a wall. *F. viridissima* is an erect growing species with yellow flowers similar to those of *F. suspensa*, and it would not be a bad plan to let the two mingle with one another.

PERNETTYAS are perfect shrubs for beds and borders. They are evergreen, always fresh and neat in appearance, pretty when bearing their waxy blossoms, but ten times more beautiful when laden with their profuse crops of berries. The variety is great and the value of the family proportionate.

GAULTHERIA has been mentioned casually in a suggested association with the *Mezereum*, but it is worthy of individual notice. There are two species, *G. Shallon*, which let alone grows a yard or more in height, and bears pretty white blossoms, succeeded by berries. *G. procumbens*, as its name implies, is of prostrate or trailing habit. Both are choice, and may be planted with good effect.

RUSCUS RACEMOSUS, or the Alexandrian Laurel, is a pretty shrub to associate with other things. It loves the shade, but is not particular as to soil or site, and would be found useful in many ways.

If we add to these the choice dwarf *Contousters* and the *Mahonias*, and for fragrance include *Rosemary*, *Lavender*, *Southernwood*, the *Sweet Gale* (*Myrica*), and *Sweet Fern Bush* (*Comptonia*), we have a selection of great value. The flowering season of the things here mentioned begins in the early weeks of the year with the *Mezereum*, and concludes with the *Hydrangeas*; while through the depth of the winter some things are bright with berries.

A.

Clematis montana.—Ten thousand flowers from a plant in beauty for a whole month is not a had result, at a cost of 2d. for some cuttings brought me by a boy six or seven years ago from a semi-wild plant, growing in a wind-swept village on the sea in the neighbourhood. Each individual flower is admirable in itself, of pure white, and from 2 inches to 4 inches in diameter. It is earlier this year, its proper blooming period being throughout May. It has been trained in line to suit the house, and the shoots now reach 50 yards. The immense quantity of bloom has a striking effect, both by night and day. In the sun it is gorgeous, and at night it gives the appearance of snow, and makes one feel as if it were winter. Its treatment with me was to plant a rooted cutting over the roots of an evergreen Oak, which has been cut down to within 6 feet of the ground, in a soil of the poorest description, already thoroughly exhausted by the Oak, training it up this trunk, and thence onwards on the strong galvanised wire attached to the house. Curious remarks are heard in the road

opposite the house regarding the flower: "It is artificial!" "Why is the house decorated?" &c. An amateur who has been in all parts of the world said it was the most floriferous plant he had seen. Grown in a cool-house the flowers are even of a purer white, and then it flowers during March; but in a couple of years it outgrows the accommodation a pot affords, for it must not be cut if flowers are wanted; but even after flowering its foliage is of the handsomest. About one in ten cuttings strike in the open; this is my experience also of the larger hybrids. Its roots should be kept moist and cool by rough stones being placed over them, or by being grown on the north side of a wall, hanging untrained from which, in the sun, it is seen in perfection. The town of Clifton boasts some fine specimens growing over trellises on houses.—A. STEWART.

Two beautiful Pyruses.—One of the most beautiful of all is *P. Malus floribunda*, a Japanese tree, and remarkably free blooming. It does not grow many feet in height, and makes a dense head, the flowers crowding every shoot. They are tender pink, the buds of a crimson colour, and the contrast is very charming. The best variety is *atro-purpureum*, of which the flowers are much deeper in colour, quite a rose-purple. A few examples of this *Pyrus* should be in every garden. It will grow in almost any soil and position, whilst it is perfectly hardy. Another valuable early-flowering species is *P. Malus spectabilis*, which has, at this season, a profusion of large rose-tinted flowers wreathing every branch. It is singular that such a lovely tree is not more popular in gardens, as it is worth planting freely in both large and small places, thriving with vigour in all ordinary positions.—C. T.

3551.—**Aucuba japonica.**—The *Aucuba* is not a Laurel, and the two plants belong to distinct natural orders. The *Aucuba* to the *Cornaceae*, and the *Laurea*, or *Bay-tree*, to the *Lauraceae*. *A. japonica* is known by several names, as the Spotted Laurel, the Gold-leaf-plant, Blotched-leaf Laurel, and Variegated Laurel. It is usually called by the latter name. The way to get the plants to berry is to plant male and female varieties together, and you will soon find that you will get a show of the crimson fruits. A well-berried *Aucuba* possesses considerable beauty, and the berries remain bright in colour over a long season.—C. T.

3578.—**Virginian Creeper and Pyrus japonica.**—*Virginian Creeper*, especially the common variety, will grow very freely, either from cuttings of the old wood in autumn, or the young shoots in summer, in the frame. *Pyrus japonica* is more difficult to strike from cuttings, but it is easily obtained from layers by pegging some of the young shoots down round the base of the plant.—E. H.

—You can easily raise *Virginian Creeper* by layering the thin branches, which will root at almost every joint. *Pyrus japonica* may be rooted from cuttings put in firmly on a shady border. In two or three years these will produce good, strong plants, which can be trained on a wall or fence.—A. G. BUTLER.

Earliness of the season.—The earliness of this season is so unusual that I think it may interest readers of *GARDENING* to know the dates on which some Roses have flowered with me: *Yellow Banksian* on April 3rd, *Rève d'Or* on April 12th, *Maréchal Niel* on April 17th, *Safrano* on April 17th, *Cheohunt-Hybrid* on April 26th, *Jaune Desprez* on April 24th, *The Bride* on May 1st, *Lamarque* on April 29th, *White Rugosa* on April 30th, *Red Rugosa* on May 2nd, *Alba Rosa* on May 3rd. These Roses are all on south walls, with the exception of the *Red* and *White Rugosa*. The blooms of the *Banksian*, *Safrano*, *Jaune Desprez*, and *Cheohunt Hybrid* are unusually fine, those of *Rève d'Or* smaller than usual, and the *Maréchal Niel* poor. The earliest Rose to flower last year (1892) was *Rève d'Or* on the 25th of May.—C. B.

3582.—**Sawage in a garden.**—In its present state the sawage may be too strong, but if soil is usually diluted. Certainly, sawage may be applied with advantage to any strong rooting subject capable of taking it up and utilizing it, or it may be used for dressing land intended for such crops as Turnips, Cabbages, Broccoli.—E. H.

3581.—**A plague of caterpillars.**—*Jewel's Gardeners' Friend* should smother the caterpillars if the branches are all infested with it. Heliothrips powder is the common remedy, and is either dusted among the branches or mixed with water, and syringed underneath the branches. It takes two people to apply this or any other remedy properly. One to lift up the branches, and the other to apply the remedy with a syringe or other

FRUIT.

THE GOOSEBERRY.

THIS, to many, is the best of all fruits, and one, according to my estimation, far too much neglected in even good gardens. It is not only the cottager's friend, but at the same time fit for any nobleman's table. The culture of the Gooseberry, unlike that of the Vine, entails little or no expense; after being carefully planted, all it needs is good attention in the way of an annual top-dressing of rotten-manure and pruning, or, I might say, proper thinning out of useless wood. Pruning has been very much altered of late years; now, in most cases, the bushes are merely thinned, all misplaced and cross branches are cut away, and as much fruit-bearing wood left as is consistent with the strength of the plant. The thinning of the wood is no doubt good practice when fruit in quantity is required and where it is used in a green estate, but if fine, large, well-flavoured berries are the desideratum, the bushes ought to be kept quite open in the centre, and the main branches should extend quite apart from each other, thus allowing the admission of plenty of air and sunshine to impart flavour, which is so much valued in a Gooseberry. Another point where handsome fruit is desired is to thin the fruit well. This is rarely attended to, but are not Peaches, &c., thinned? Then why not the Gooseberry? This thinning process is all the more necessary in the case of bushes of

four or five leaves each and then stop them. The side growth may also be stopped at the second or third leaf beyond the hunch. Those laterals not having bunches on may be allowed to develop six or seven leaves each. It was a mistake to put drainage in an inside border, seeing that the Vines depend on watering for all the moisture they get. You will require to increase the depth of soil in the border to 2 feet.—J. C. C.

3662.—**Keeping Apples.**—Of course, you have doubtless good reasons for keeping the Apples so long, but they will not be fit to eat. I have tasted Apples kept so long, and although preserving a fair exterior they have been positively unpleasant—at least, quite devoid of the crisp, juicy, and agreeable flavour looked for in all good eating Apples. Some of the best preserved collections I have seen have been kept in a span-roofed house, running east to west, cool and equable in temperature. Coolness is of great importance, as if the temperature is high and dry at the same time the fruit will soon shrivel. Much depends upon the soil and situation of these trees, but in that question I cannot enter now. Keep the fruit cool—if damp it will not matter—and in a temperature that varies little. This is the best position for them. Look at them occasionally to remove all those that show signs of decay, as one bad one will in time contaminate many.—C. T.

3666.—**Melon "Little Heath."**—This is the best Melon for an amateur to grow, as it is more hardy than some of the varie-

The greatest difficulty is with regard to ventilating the frame, as without you make the most of the heat of the sun you are not likely to succeed. Give a little air at 8 a.m., and close it again in dull weather at 3 p.m.; but when the sun shines brightly do not close it until five o'clock, and at the same time damp the foliage and the sides of the frame with warm water. If you are much away from home in bright weather, place a double thickness of fish-net on the glass to prevent the sun from scorching the leaves. Give the roots a good watering once a week when the weather is hot and dry, and about once in ten days when the external temperature is cool and moist.—J. C. C.

3675.—**Black Hamburg Vine-leaves withering.**—Air should be given to vinerias before nine o'clock in the morning. A house full of pot plants should have a little air as soon as the sun shines full on the roof, so as to raise the temperature inside, or, say, not later than 6.30 in the morning. Ventilators opened a couple of inches along the back of the house at the highest point will be sufficient to start with, but the openings should be increased by 8 o'clock, and full air should be given on bright days by 10 o'clock. This air-giving by piecemeal, as it were, is very important. Cold draughts can and should be avoided. A cold draught rushing through a house that is kept closed till 9 o'clock a.m. would be likely to damage the foliage. Then, again, if the Vines are cared for, 5.30 p.m. is much too late for closing. The ventilation should be reduced at this season by 3.30, and the house finally closed and damped down by 4 o'clock. Reduce the number of pot plants in the house as soon as possible.—E. H.

I think you will prevent the Vine-leaves withering if you ventilate the house earlier in the morning; 9 a.m. is too late during such bright weather as we had in April. It does not give time for the leaves to get dry before the heat rises sufficiently to cause the scalding of which you complain. Should we get a recurrence of such weather again, you had better leave a little air on the top ventilators all night. Shut up half an hour earlier and open the top ventilators again about 8 p.m. or 9 p.m.—J. C. C.

3669.—**Stopping a Vine.**—This is an easy part of the work of a gardener, and when the process is explained anyone can do it. Some Vines are more fruitful than others, and strong, vigorous plants of a particular variety will be more fruitful than plants not so well grown. For instance, a vigorous-growing Black Hamburg Vine or a Muscat of Alexandria will show two and often three bunches on each lateral growth. The treatment I usually pursue is to pinch off all but one bunch, that nearest the base of the lateral, and stop the growth at the second leaf beyond the hunch. It will soon start to grow again, but must be stopped at once, continuing to stop all the fruits as fast as they are formed. It is bad management to let the laterals grow until they have to be cut out with a knife. Stimulants may be applied to the roots until Grapes have passed through the stoning period. As soon as the Grapes are thinned they grow rapidly; but when they arrive at a certain stage they stop growing apparently, and scarcely increase in size for about six weeks. This is the stage of growth at which the stones grow to maturity inside the berries; gardeners call it the stoning period. The Vines are, of course, as actively employed in developing the berries as they are at any other time, only the growth is not perceptible.—J. D. E.

The leading shoot ought not to be stopped until it reaches the top of the house. Lateral shoots growing from the joints should be pinched in at the first leaf, which serves the purpose of plumping up the eye on the main-rod. These will produce growths next season for furnishing the rod with side-shoots and give bunches of fruit if desirable. If the Vines has any side-branches these should have the point nipped out of each above the second leaf past the bunch, if any, to concentrate the energy of the Vine into the bunches of fruit. If there be no fruit on the side-shoots, pinch the point of each at the fifth leaf, and all lateral growths above the first leaf. The pinching-in of the shoots should be carried out when they attain the length described, whether the Vines are in bloom or not. It is really too early to use stimulants at the roots in an outside border; not until the berries are thinned



Fruiting-branch of Gooseberry "Roseberry."

pendent habit, which in many seasons are so weighed down with fruit that it is utterly spoiled by lying on the ground. The spade ought under no circumstances to be used in a Gooseberry plantation. Early in the season apply a top-dressing of good rotten manure, thus causing the fibrous roots to find their way to the surface and invigorate the plant. Check all weed growth by means of the hoe, and there will be no necessity whatever to have recourse to digging in any form either with spade or fork. Roseberry (here figured) is not very well known, but it is very sweet and pleasant, the fruits green, small, and freely produced. Winham's Industry, a free bearing kind, has been largely planted by market growers on account of the early swelling of the fruit. Private gardeners ought also to plant this variety largely in the ensuing autumn, as early Gooseberries for pies are always appreciated.

T.

3683.—**Management of a Vine in a pot.**—I presume there is a reason why you have not planted the Vine already. If there is not, and the border is quite ready, why not plant it at once? You would then get a better crop of Grapes next year. If you must keep the Vine in the pot this season it ought not to be allowed to carry more than four bunches of Grapes. Seeing that the rods are already a good length you will gain nothing by allowing them to extend. Allow the two leaders to develop

ties. You probably know that Melons like a rather heavy loamy soil, but I have seen very fair crops obtained from a much lighter description of earth. In the first place cover over the manure in the frame 2 inches thick, then put a mound of the same kind of material in the middle of the bed 6 inches in depth, and a fortnight later put a sufficient quantity to cover the bed all over the same thickness as the mound. If the frame is 6 feet by 4 feet two plants will be enough to furnish it with growth. Do not give much water at first, which should always be warm, and after the first three weeks do not wet the soil within a circle of 6 inches round the stems, or canker may attack them, and after the growth reaches the sides of the frame give most of the water near these parts. When the plants have made six leaves each pinch off the tops; the growths resulting from this stopping will furnish fruit after they have grown from 1 foot to 18 inches long. If one or two fruits show in advance of the others pinch them off; what you want to furnish a crop of fruit is to have several flowers opening at one time. You must allow a sufficient number of young shoots to remain to cover the surface of the bed; but they must not be crowded, and you must remove those which are not showing any fruit, and those growths on which fruit is swelling should be allowed to grow on without stopping. When the fruits are the size of a hen's eggs, place them on in a shallow flower-pot. Six fruits are as many as a strong plant can swell to a suitable size.

the Vines need stimulating food, and not then if they are but recently planted. Except in very dry summers, Vines growing in outside borders do not require stimulants in any form; to supply them to young Vines is only to incite them to make gross and immature growth, which cannot produce satisfactory results in the shape of compact, well-finished bunches of fruit.—S. P.

— The time to stop Vines is when three leaves have been made beyond the bunch. Sometimes the young shoots are stopped just beyond the first leaf, but two leaves beyond the bunch are better. Do not let the shoots extend beyond the point named before stopping, as it wastes the strength of the Vines to let them make growth to any extent that will afterwards have to be cut back. This is the best time, from this onwards till the berries are etoned, for using stimulants. I shall give two or three dressings to late Grapes from this till colouring begins.—E. H.

OUTDOOR PLANTS.

3113.—**Flowers for a wall.**—If "Arminel" has an old brick or stone wall full of chinks and with mossy growth, such a wall may be made exceedingly beautiful with permanent perpetual things at small cost and with little trouble. There are many things more lovely and better suited for the purpose than those suggested in the query. Having done some amount of wall gardening of this kind, I will give my experience and hope that others besides "Arminel" may find a useful hint for future guidance. In the garden now under my charge there are some old stone and brick walls that are level for nine months in the year from one plant alone—that is, the Common Fumitory (*Corydalis lutea*). In the early days of spring it puts forth its elegant leafage of the tenderest green colour and as graceful as a maiden-hair Fern, and then comes a long season of bloom, when its tufts are sheathed with yellow. It is readily established by sowing seed in a crack or chink. To this, the original mantle of the wall in question, several things have been added, but none with greater success than *Eriana alpina*. This gem of the alpine flora perishes from damp upon level ground, but on the wall it is happy always, spreading into cushions and from new and for the next few weeks charming in blossom. The type has purplish blossoms, but there are also two lovely varieties, one of a bright rose colour and the other pure white. They were established merely by scattering or blowing seed into the cracks in spring or early summer and when the wall was moist after rain. The plants appear in a few weeks, and flower the following year. The Cheddar Pink (*Dianthus cæsius*) is a charming wall-plant and plentiful too in places, as, for example, about Oxford, where I once saw it blooming freely on a wall by the roadside. A gem of wall-plants is the Balaic Sandwort (*Arenaria balcanica*), for, not contenting itself with the chinks, if the wall is moist or shaded it creeps over the entire surface, making a close veil of the richest green. A few years ago I assisted in building two little walls, ostensibly to support two benches on each side of a path. Stone was used, and the joint and interstices packed with turfy loam as the building proceeded. No actual attempt was made to see how pretty it could be adorned, but the whole thing was hurriedly done, and any plants that happened to be at hand were put in the joints as the wall was put up. It has been a source of great delight ever since, and at the time of writing is such a picture as I never saw before. There are yards upon yards (square) of the little Sandwort now studded with myriads of tiny white blossoms. Mossy Saxifrage, and Sedums, Thymes, Arabis, and Phloxes, are perfectly happy, and even a stray piece of Gentian acanthe finds a congenial home, and with its flowers open on a sunny day recently, I could not help thinking what a glorious display it would have made had it been planted in quantity. On the top of the wall, which leaned against the bank, tufts of Aubrietia were planted, and here and there they hung down the wall, making a rich and lovely veil of blossoms for several weeks. Two more things occurred to me that I have seen most charming on old brick walls—namely, the red Valerian (*Centaurium rubrum*) and a little Alpine Tussock (*Linaria alpina*), a gem

among plants of the greatest beauty. One thing to be borne in mind is this: In endeavouring to establish plants upon existing walls seed will be for the most successful. It is useless to push plants into cracks with a little soil around them; they perish before they can establish themselves. The seedling makes a gradual growth, the roots naturally and of necessity going far down into the crevices and finding food and moisture sufficient for all vicissitudes and changes. Seeds of forest trees will grow upon walls and the plants even displace the masonry. This, of course, should not be allowed, but it teaches us that much more might reasonably be attempted with flowering plants of lowly habits.—A. H.

— The plants named will succeed in the position mentioned; but Pansies like a little shade and moisture, if possible. In addition, you might have many of the ordinary border plants, such as Phloxes, Michaelmas Daisies, Denericums, Hollyhocks, Perennial Sunflowers, &c., which would all succeed well in this position, as well as the things that you have mentioned. As regards the wall, it depends much upon its height what would be the most suitable, and you can have a variety of pleasing things. Veitch's Virginian Creeper would cling well, and it is very bright-green throughout the summer, the foliage changing to rich crimson shades in the autumn. Avoid the stronger, rampant-growing kinds. The Chimonanthus fragrans grandiflorus smells sweetly in the winter, when its curious yellow flowers are borne on the naked shoots. Jackman's Clematis, remarkable for the deep rich blue colour of the flowers, makes a fine show, and, if you care for them, you might have a few variegated Irises, or one green-leaved kind, such as Emerald Gem; but, of course, the quantity of things planted depends upon the length of the wall. The yellow-flowered Jasminum nudiflorum makes a brilliant show with its yellow flowers, and seems to live in the most congenial spots. In the poorest of soils and bleakest of positions I have seen it thrive well, and make a great show of colour with its rich yellow flowers. *Kerria japonica* fl.-pl. is a brilliant orange-yellow climber in full beauty in the spring season; it is commonly called the Jew's Mallow. The Fiery Thorn, or Pyracantha (*Orategus Pyracantha*), is very often seen on walls, and bears a quantity of orange-scarlet berries, whilst the leafage is very abundant and of a dense green colour. It will succeed in most places. Then you can have also *Pyrus japonica*, which makes a bright display of its scarlet flowers in the spring months. This list includes a few of the common wall climbers, and all are well worth growing, thriving in ordinary positions. Any of the kinds mentioned may be selected if the number is too large.—C. T.

3609.—**Watering a garden.**—Well, certainly, it is advisable to water the garden, Grass, &c., and the best time to do this is in the evening. It is not wise when the sun is shining full upon the garden, and a keen east wind is blowing, to water the plants; but some things unless watered would soon perish, especially those newly planted. If there is any probability of a frost at night, then you need not water, and in any case it must be done cautiously. A good plan is to break up the surface soil gently with a hoe, as it gets much caked during this hot and dry weather. I give my Pansies and herbaceous things, planted early in the spring, a good soaking three or four times a week, and without this assistance they would never make much progress.—C. T.

— Irrigation in a dry time when well done is undoubtedly beneficial; but there is a good deal of watering done which would be better undone, because it is not thorough. Merely sprinkling the surface in a dry time like the present is worse than useless. Better use the hoe and thoroughly break and pulverize the surface for it to act as mulch to check evaporation. There is moisture enough in the ground now a few inches down, and the roots will find it if the surface is well broken up to keep out the sunshine and prevent the crust from cracking. But there is watering which, I think, may be done with advantage. If recently-planted things are not watered they will die. Then, again, fruit-trees heavily laden with blossoms will, I think, benefit from a good soaking of water containing a little weak stimulant. I have generally found those trees the roots of which are

kept moist set their blossoms better than others which had received no attention, and all trees grafted on dwarfing stocks must be kept moist. Measurably-growers generally break up the old beds, and mix the manure with burnt earth or cherted material, and when well blended, using it as a mulch over the roots. Much good may be done where the soil is light and dry in this way. Whenever it is necessary to water anything and the ground cannot be mulched, take the hoe early next morning before the sun has dissipated all the moisture, and break up the surface.—E. H.

3673.—**Lily of the Valley in a bed.**—Of course it would be much better to thin out the Lilies. The quickest plan would be to trench out the roots in belts about a foot in width both longitudinally and transversely, filling in with good rich soil; but, of course, the water plan would be to dig out the whole of the roots, enrich the soil, select the strongest stools, and replant these about 6 inches apart over the whole bed.—A. G. BUTLER.

— The Lilies are too thick to flower satisfactorily. Although it is late for transplanting them you will gain a little time if you remove a portion of the plants at once. You must, however, be prepared to shade and water them for two or three weeks after planting. So treated they may not flower much the next year, but they would be much stronger the year after than those planted next autumn or spring. You must dig and manure the ground before planting, and then the plants will not want any more manuring for two years.—J. C. C.

— The best way of thinning Lily of the Valley is to take them all up and divide into small clusters of crowns, and plant them from 9 inches to 12 inches apart in fresh soil well manured. February is a good season for transplanting. Another way of thinning thick beds of Lily of the Valley is to cut out strips 8 inches or 10 inches wide, leaving strips the same width undisturbed. The roots lifted may be planted elsewhere, and the soil made up by topdressing with leaf-mould.—E. H.

— The plants certainly require thinning now, and you cannot expect good flowers if the beds are systematically neglected by being allowed to get so that it is impossible to discover the blooms. Fifteen years is too long, and from eight to ten is, as a rule, quite long enough. You did quite right, too, giving manure, but it would be best to let the plants have a thoroughly renewed soil. Moderate shade and moisture suit the Lily of the Valley best, and a good leamy soil, enriched with manure, will afford excellent results. The time to plant is early in the autumn, just after the leaves have decayed, and this is the time to divide the clumps. You will be able to get a good lot of crowns from your bed, and when you plant again, put them about 3 inches apart, as then they will not become crowded together so quickly as would otherwise be the case. A good dressing of well rotted manure on the bed after planting will be an advantage, and bear in mind the importance of plenty of water, not forgetting liquid-manure, which tends to promote fine spikes. Such treatment as this is necessary, however, of course, only if you want to get better flowers than the miserably thin spikes one sees as a rule in ordinary gardens. Under this system the plants will remain in condition for several years, and annually give a good supply of the pure white fragrant flowers.—C. T.

3629.—**Creepers for a trellis.**—There are not a great many things that would succeed in this position, but Veitch's Virginian Creeper would grow well, and it is tidier than the other Ampelopsis, which are unruly and coarse. You might try also *Jasminum nudiflorum*, Clematises, C. Jackmanni, which I should think would do well. If you prepare the soil a little for the plants, *Kerria japonica* fl.-pl. would grow well, also *Clematis montana*. As you say the soil is thoroughly root ridden, you must make it fairly good by giving plenty of manure, and after the plants are put in, give plenty of water during the succeeding weeks, to assist them to become well established quickly. You could plant out now from pots and get good healthy examples.—C. T.

3680.—**Spanish Iris.**—This Iris is a beautiful garden flower, which is being more largely grown than has been hitherto the

case. It is a native of Spain and Portugal, and has long been in English gardens, although many of the beautiful kinds are pronounced of Dutch origin, as the growers there have given much attention to bulbs in general, and Tulipe in particular. It is a golden rule not to disturb them when they are once planted, certainly not until it is seen that they are in need of lifting. Irises, as a rule, hate constant disturbance at the root. The same cultural remarks that apply to this Iris apply also to the English Iris, which is a beautiful flower, with broad segments, and is a charming companion to the Spanish Iris; let me remind you they are both "Spanish Irises." The name "English Iris" occurred through the Dutch supposing the bulb was a native, having been sent from England to Holland, hence the mistake. It is a misleading name, but it clings to the flower. Always keep these Irises moderately dry; a water-logged, overmoist spot is fatal to a healthy growth, and the best soil is a good vegetable mould, not too light, but of a medium mixture. Sunshine is essential, therefore keep the bulb away from overhanging trees and such like, giving rather a drier position even than the English Iris. A windy situation should be avoided, as the slender stems get damaged. The bulb flower a little earlier than those of the English Iris, and an excellent effect is got when they are associated with dwarf evergreen shrubs. I have seen some delightful contrasts of this kind. Put the bulbs about 3 inches deep, and if they are to be in beds, not less than 6 inches apart. It is interesting to note that the Spanish Iris in particular gives a good account of itself in town gardens, and there is now a large list of varieties, which vary in colour from clouded bronzy yellow to white. The white and pale shades of blue are very beautiful.—C. T.

3670.—Narcissus not flowering.
—With reference to the query about the Double Narcissus, presumably you mean, writing at this late date, the Double Poetious. I may say that the great Daffodil growers have been puzzled by its behaviour, but I think the experience of the largest perhaps of all Daffodil cultivators, Mr. Walker, of Ham, will be of value. It is the same as I have found, and the advice is also the same as I have repeatedly given. It is to grow the bulbs well. Some years ago Mr. Walker's bulbs suffered greatly from blindness, but he discovered that this disease was due to weakness, for if the Double Poetious were permitted to remain more than two years in the same situation, the number of blind flowers increased, but in the first and second year hardly ten per cent. even went blind. This may be cured by good cultivation and annual lifting. You say the bulbs were lifted some years ago, but probably they were returned to the same soil, with the result that the ground was "cick" of Daffodile. You should have selected a fresh site and not permitted the bulbs to again remain years without being lifted. The wonder is that they have made any progress. Lift them once in every year, or at least two years, and therefore lift them now, or as soon as the foliage has died down, and in the early autumn replant them again in freshly prepared soil. I think that next year you will find that the results will be very different from those that you have already experienced. I give a fairly lengthy answer to your query, as several of a similar character have been asked recently. A short time since an article appeared in GARDENING which dealt with this question.—C. T.

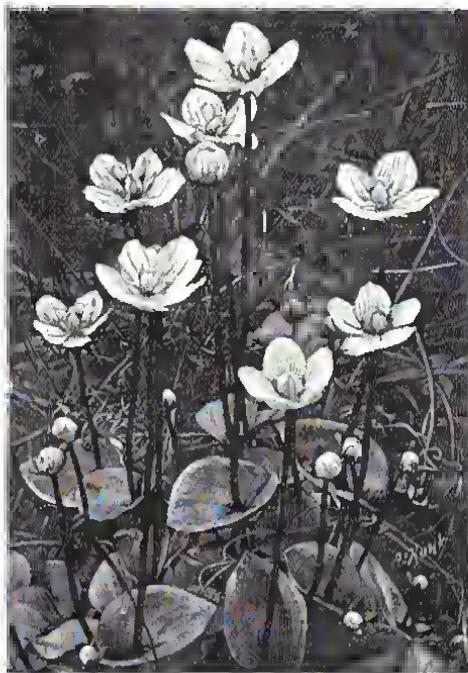
3658.—Dandelion on a tennis lawn.
—The best way of destroying these is to pull them up with all the root possible. And to do this effectually, it should be done when the ground is damp and soft. It has been recommended to cut off the tops and drop two or three spots of sulphuric acid on the wound. This kills the upper part of the plant, but the large, long-rooted plants may, and sometimes do, form a new growth at the point where the viticiple ceases to penetrate. The same thing may happen by pulling up the roots—if they break off, and any part of the thick root is left in the ground—but

these are things which are constantly happening, and is a part of the penalty which has to be paid for the neglect which permits a lawn to get full of Dandelions. Perseverance with the weeding tool will get rid of them in time.—E. H.

BOG PLANTS.

GRASS OF PARNASSUS.

This is an extremely interesting and pretty little genus of bog plants, chief amongst which is the subject of the illustration, *Parnassia palustris*, a native of Britain. *P. nubicola* from the Himalayas, *P. fimbriata*, *P. asarifolia*, and *P. caroliniana* from North America, have all larger flowers than our native species, but they rarely, if ever, bloom so freely or do so well under the treatment we usually subject them to in the garden. The American species will exist away from a bog, and I have had them all growing on a western exposure for some years, and they often bloom well. On marshy land or in bogs in the rock garden *P. palustris* is one of the most charming flowers we can at present recall to mind. It is by no means



OUR READERS' ILLUSTRATIONS: GRASS OF PARNASSUS (*PARNASSIA PALUSTRIS*). ENGRAVED FOR GARDENING ILLUSTRATED FROM A PHOTOGRAPH SENT BY MRS. NEWMAN, HATFIELD, HASTINGS.

an uncommon plant in gardens, and when taken in hand and cultivated it is really surprising to see what a fine effect it gives. The other species noted above, though not so free-flowering, are well worth growing, especially *P. fimbriata* and *P. nubicola*, which are handsome, and if cared for and periodically raised from seed do well and bloom freely the second and third years. We grow them mostly in a moist, sandy peat, and we find this answers well for all the species. They are readily raised from seed, and most of them may be increased by division. *P. asarifolia*, introduced from North America in 1812, is an extremely pretty plant, with Asarum-like leaves and larger flowers than the British species. The flowers are large, white, and produced in summer. *P. caroliniana*, from the North American swamps, has large white flowers, netted with green or purple lines, and when doing well is very effective. *P. fimbriata*, with large, prettily-tinged flowers, is the most beautiful of the North American forms, and is well worth special care. The leaves are curiously hollowed out near the base and look like pedate leaves. *P. nubicola*, introduced a few years ago from the Himalayas, is a fine robust species, with large white or straw-coloured flowers. The

leaves are elliptic and very fine when the plant is healthy. *P. palustris*, the common Grass of Parnassus (here figured), has white flowers and cordate stem-clasping leaves. It is one of the freest bloomers and, in our opinion, the best of the genus for culture in an ordinary artificial bog. K.

Omphalodee varna.—This should be found in every garden where it can be accommodated with shade and moisture, especially where these conditions exist naturally. It is in such places that it luxuriates, creeping and spreading into the most lovely carpets. I have never seen it so happy as in some of the gardens in the Thames valley district. All gardens, however, do not possess the moisture in which this spring beauty delights; but it may easily be grown in many a cool and shady spot too often barren from year to year.—E.

3676.—Auriculas.—Do not take the offsets from the plants until they have formed roots. If they are intended to be grown in pots, then it will be better to plant them singly, or two or three together in small pots. If for planting out-of-doors flower-pots need not be used at all; they may be planted in boxes or in hand-lights in fine, sandy soil; plant them in firmly, and keep in a moderately moist condition at the roots. Such plants, if intended to flower in pots next season, may be potted up from the ground in September.—J. D. E.

—Do not break off the offshoots until they have had time to produce roots, or you will lose a good many of them. The best plan is to wait until the autumn, then take up the plants, shake away the earth, and divide them as you would a Primrose. You will find that by that time nearly all the offshoots can be separated with roots, and all these will grow into good plants.—A. G. BUTLER.

3677.—Pansies, &c., from seed.
—Pansies, Sweet Williams, Wallflowers, and Forget-me-nots are certainly best raised freshly from seed every year, the plants from this year's sowing to flower the next. Any really good things among the Pansies may, however, be perpetuated by means of cuttings. If by Marguerites you mean the Paris Daisies (white and yellow), they are always obtained from cuttings, which should be inserted in the early autumn in a cold frame. The soil being light and sandy, all the subjects mentioned may be safely sown in a well-prepared bed in the open ground. Sow the seed at once, except that of the Pansies, which for spring flowering will be quite forward enough if sown in July or the early part of August. Choose a shady place for this last.—B. C. R.

—If you have good varieties of Pansies, the way, of course, is to propagate these by cuttings, which strike very easily, as it is only necessary to make up a bed of light soil in a frame, and put in the cuttings some time in August and September. Select nice stubby side-shoots with, if possible, a few roots attached, as these go through the winter well, and form good plants. Keep the soil fairly moist, but on no account should it be too wet.

In the following April they can be transferred to the places they are to occupy in the garden. Before doing this expose the plants for a few weeks before as much as possible to air, so as to get them well hardened, but not let them get injured by severe frosts. A cool, moist, naturally shaded position is best for the plants, and in dry weather give plenty of water. In this way you can keep up a stock of good pot plants, and keep them true to name when taking the cuttings. The time to sow seed is the month of July, and sow in shallow pans filled with a light soil, and put them in a cool place. They will soon germinate, and may be pricked out into larger pans or boxes, being in no hurry with the latest to come up, which often provide the finest flowers. In the early autumn put them out in the positions they are to occupy, and they will grow well through the winter. The Sweet Williams are best treated as biennials, although they can be had after two years, but they are a trouble. Always have a good young supply on hand, and nothing can be more beautiful in its way than a mass of the fine double crimson, which is a lovely flower both for its perfect Gothic shape and superb colour. Seed may be sown at once in a well-

prepared sunny bed, but it is better always to sow earlier than this. As, however, that cannot be done now sow at once, and when the plants are of sufficient size thin them out, so as not to get the growth weakly. In September they may be put into their permanent positions, and the following year they will flower well. Good kinds, worth perpetuating, may be readily increased by cuttings, which should be taken off early in the summer, and placed under a hand-light in a well-prepared soil. Secure all good decided colours, and do not pay too much regard to a dwarf habit. Wallflowers are biennial. Raise the plants from seed in May, and cuttings may be put in when the plants have flowered. Always transplant Wallflowers from the seed-bed, not letting them grow simply on a tap-root, so by this means the production of plenty of fibre is prevented. It is those that are well provided for in this respect that stand the winter satisfactorily, much more so than those with tap-roots. The winter plays havoc often with Wallflowers, but it is sappy, ill-conditioned plants that are the more likely to succumb. A very hardy kind is Belvoir Yellow, which is showy as well. It is necessary to get plenty of young plants of Forget-me-not, which are very easily raised from seed. Sow in the open.—C. T.

—Pansies, Sweet Williams, Forget-me-nots, Wallflowers, and other hardy flowers are much better sown outside in a well-prepared border than in a frame. Young plants, as a rule, are better than old ones, though Wallflowers may be cut back and kept for this second year. Pansies may be increased by cuttings or division.—E. H.

3618. — **Wireworms in a flower-garden.**—There is nothing that will destroy wireworms that will not injure the plants. The best way to get rid of these is to lay baits of Carrots, Potatoes, or French Beans. I have caught dozens of wireworms from a small handful of French Beans just buried in the ground and Carnation bed, marking the spot with a short stick, and overhauling the Beans about twice a week. Carrots and Potatoes are used in the same way.—E. H.

—Wireworms are dreadful pests to have in one's flower-beds, and nothing but patient, painstaking care will get rid of them. These insects are very partial to Carrots when they are buried in the ground. You cannot do better than get some old ones and place them amongst the plants, about 2 inches under the surface. Mark each one with a stick, and examine them once a day, when probably you will find many of your enemies eating their way into the Carrot. You have a tiresome job before you; but there is no other safe and sure remedy.—J. C. C.

—You cannot do better than adopt the old-fashioned plan of getting some small Potatoes and make a hole in them, inserting them just beneath the soil. The wireworm has a strong liking for Potatoes, and the tubers can be lifted at intervals and placed in boiling water to kill the marauders. Look at the traps every day, and you will succeed in getting rid of large numbers. Wireworm-ridden ground is very difficult to deal with, and in the autumn, if this particular spot is much affected, I should remove the plants, particularly if they are Carnations, and give a good dressing of gas-lime, which has been found efficacious. Expose the soil well, and in the case of quite newly acquired ground, on top pasture, for instance, the usual way is to crop it with Potatoes for a time, so as to get it in thorough working order, and get rid of one of the worst pests in garden—wireworms. In your case try Potatoes.—C. T.

3710. — **Hiding-eel in a garden.**—In flower-beds I have seen the eel hidden in a well-kept garden by the free use of the many varieties of Honcrop. These plants are not deep-rooted, and when in flower are extremely beautiful. I do not think they rob the ground to any considerable extent, and there is only one objection to them—they help to conceal slugs.—A. O. BUTLER.

3685. — **A Surrey garden.**—One cannot but sympathize with you in some of your troubles; but it is what all who enter upon a gardening career have to contend with. With regard to the Cherry and Appletrees, you are unnecessarily anxious. Leave the branches alone, and by all means give the roots a good watering twice a week all the time the dry weather lasts. You can make a Minshroom-bed without a frame. It would be best made up in the shade of a wall or building with a north aspect. Mind that the manure is fairly

moist when you use it. With regard to the Roses so recently planted, do not prune them at all now; but by giving frequent root waterings and mulching the surface soil with manure, encourage them to make good growth this summer, which should be allowed to grow in its own way until the end of the autumn, when it may be pegged down close to the ground. Reine Marie Henriette is not a good Rose for pegging down, because of the natural pendent habit of the flowers. I am afraid the Thuja Lobbi plants are past recovery. The turly soil and long drought has caused the mischief. If the plants are dead take them away at once, and devote the present time to preparing the ground so as to get the turf more rotten by the autumn. Fork over the space, say, once a month, breaking any hard lumps to pieces. When the ground is moist the middle of September is not too early to plant such subjects as Thujas, providing the plants have not to make a long railway journey. If you think there is any hope of saving the plants a mulch of Cocoa-nut-fibre will do good, especially if you thoroughly moisten the soil about their roots first.—J. C. C.

ORCHIDS.

MILTONIA CLOWESI.

This is a plant asked about by "Odonto," and he complains at the foliage becoming so very yellow. Now, to admit the truth, it does get very yellow if exposed to a great deal of sunshine; but the kind named here is not so much liable to become tarnished as the forms known as *M. spectabilis* and *M. Moreliana*. *M. Clowesi* flowers in the autumn months, even in the months of October and November, so that a good exposure to the light may be given without fading the green from its bulbs or its leaves. It is now considerably more than half a century ago since its flowers were first seen in our gardens; it blossomed first with the gentleman to whom it is dedicated, and it is at once one of the most useful and pleasing species in the genus. It is erect in habit of growth, when strong the bulbs being quite 4 inches in length, oblong, tapering upwards, and bearing a pair of leaves some 18 inches long, which, together with the bulb, are of a bright cheerful green. If allowed to stand fully exposed to the sun, I have seen them become a rich orange-yellow, and this colour does detract from the flowers, these being in the sepals and petals of a rich deep yellow, blotched and marked in a transverse manner with chestnut-brown, the fiddle-shaped lip being white in the apical part, deep violet-purple at the base. One variety of this plant is called *Lamarckiana*, and it is a very desirable form, having larger flowers than the type; the sepals and petals broader, and the lip much larger and less constricted in the middle. There are also one or two other well-marked forms, some having far denser spikes of blooms than others. Now "Odonto" wants to know particulars of how to grow this plant? This is an easy and simple matter, if you have the right amount of warmth for it, for although this Orchid is said to come from the Organ Mountains, in Brazil, it does not reach a great altitude, and it likes to be accorded as much heat as *Cattleya Mossii*, and it likes to be hung up best; so if you have this plant in a pot it is best suspended in a position where it gets full light, but so as it can be shaded from the burning influence of the sun. Drain the pots well, because when growing they require a large amount of water to their roots, which should have ample means of getting away quickly. A nice damp atmosphere is also requisite. When the plant is coming into flower it may be removed from the reel and be stood upon the stage, when, if care is taken, the flowers will maintain their gaily until near the end of the year; in fact, I have had the plant in flower at Christmas, and the flowers still in quite a fit state to be presentable on the table at this time. MATT. BRAMBLE.

AERIDES CRISPUM.

I AM in receipt of a nice spray of flowers of the above-named plant from "Mamo," saying he has a plant with three spikes, and he says I might say a word about the various members of this genus? Well, I have been somewhat long in

my remarks upon the various species of *Aerides*, perhaps because I have always considered them out of the usual run of plants which my readers dabbled in, but seeing that there is no telling what sorts you really do take up with, I must extend my radius somewhat so as to include some of the East Indian kinds. Now I am very glad to find there is some of the old love for these *Aerides* still to be found amongst growers, for they, in company with *Vandas*, are still amongst the most beautiful of orchidaceous plants, and since it has been proved that 60 degs. in winter is quite hot enough for them, saving a few species which require some 5 degs. more heat to carry them safely through the winter months, anyone having a stovehouse may grow them, for they will thrive along with a mixed assortment of stove plants even better than the majority of Orchids. They are erect and upright in growth, and thus the plants maintain themselves amongst the various plants in a stove, and do not become smothered up and buried beneath the foliage of the surroundings; and *A. crispum* is one of the very best for this, as also are the varieties *A. crispum Warneri* and *A. crispum Lindleyanum*; and these would appear to constitute a section of the genus noted for having the erect stems, of a blackish-violet, and somewhat broad and short leaves. They have long spikes of bloom, which are frequently branched, bearing numerous, very large, fragrant flowers, rosy-purple and white, and which last in perfection a very long time. Now this plant and its variety, *Lindleyanum*, are mixed in a great measure; but the usual difference lies in the typical plant having a racemose inflorescence, or with simply a short branch or two at the base; but the variety has long branches, and the flowers are larger and brighter in colour, whilst *Warneri* is so thoroughly distinct that no one can mistake it, the growth being slender, and the leaves set in an ascending manner, and the racemes set with numerous slightly smaller flowers. *Crispum* and its variety *Lindleyanum* are both found in the Neighbourly Hills, as I have frequently been told by my friends who have been there; but I have no idea whence the plant called *Warneri* comes. This, perhaps, is from a warmer spot in this vast country, and my inference is drawn from observing that it likes a slightly hotter place in the winter months. They should be potted in sweet Sphagnum Moss alone, the drainage good, and be treated to a good moist atmosphere. MATT. BRAMBLE.

3672. — **Zygopetalum Mackayi.**—This is a good old Orchid and well known to cultivators. It is not difficult to grow well. I find the plants do best in the Cattleya-house and must be kept shaded from bright sunshine. The plant requires a good-sized flower-pot, and should be planted in good fibrous peat and some Sphagnum added to it. The pots must also be well drained. All the bulbs do not make growths; the leading bulbs only do this, and they usually make but one in a season. They flower in the winter, the flowers being produced on strong upright spikes, and last a very long time in good condition; some varieties produce much more beautiful flowers than others. The flowers have yellowish green sepals and petals, marked with purplish-brown, the lip is white, beautifully marked with blue lines and spots.—J. D. E.

3679. — **Ceologyne cristata.**—It is not necessary to repot this Orchid annually; it may be repotted every second year. Small plants may be repotted annually. They do not like too much sunshine upon them when making their growth, but should be placed near the glass roof. I usually place them on the north side of the house. It is found that they do better with some fibrous yellow loam mixed with the Orchid peat. It is not usual for the plants to produce a second set of flowers after the first have faded and been cut off. The plant starts into active growth immediately after flowering, and these growths will, of course, in time form new bulbs. They should be repotted just before this growth begins; if done when the growth is so far advanced as it is now, the plants would doubtless experience a considerable check.—J. D. E.

3612. — **Lime-water and worms.**—The lime-water should be clear, and drawn off from the sediment. It is a very harmless remedy, and may be applied to most plants without any injurious results.—O. T.

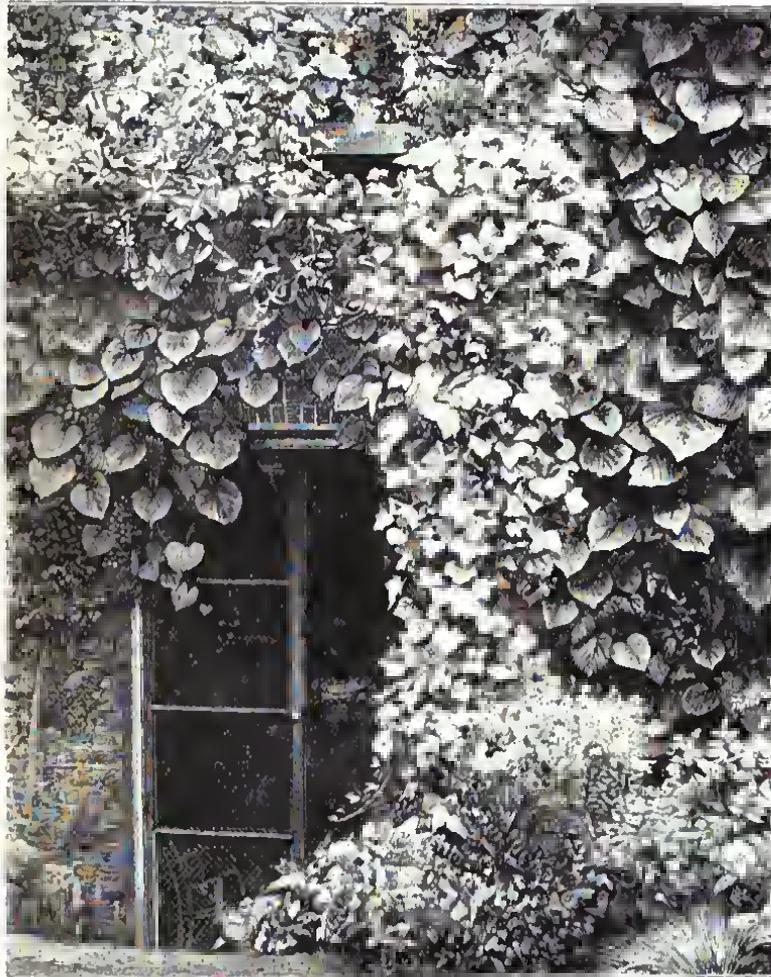
HOUSE & WINDOW GARDENING.

THE DUTCHMAN'S PIPE (ARISTOLOCHIA SIPHO).

It is a pity that this, one of the handsomest climbers we possess, should be so little known or appreciated in this country. Its beauty consists in the large, heart-shaped, bright-green leaves, which measure, under favourable circumstances, as much as 7 inches in diameter. The plant is common in North Germany, and is perfectly hardy; it will grow under any aspect and in any fair soil. The specimen shown in the photograph is trained up the side of a house, ever and among the underlying Ivy. As the Aristolochia does not attach itself to walls, it is best to train it on trellis or wire-netting, and it

plants may be stood upon a bed of coal-ashes in a shady part of the garden, but must not be allowed to suffer from want of water. The best time to pot them, if this operation is required, is when growth is being made, and, as a rule, early in July is a good period for this work. The soil should be composed principally of peat, and this should be of good quality, otherwise the plants will not thrive well. The reason of this is that the annual repotting is not necessary, as in the case of many soft-wooded things. The plants should be repotted into pots 2 inches larger, and the soil made quite firm, using for the purpose a potting-stick, as if it is at all loose good growth will not be made. The pots must be thoroughly well drained. Put in plenty of crocks, one or two large ones in the bottom of the pots, and over them the smaller

are so largely sold in our streets during early spring for room decoration. Very beautiful they are, and their sad fate is, too often, to die away rapidly from the combined effects of gas and want of water. But, with care, they may be reserved from year to year, without any artificial heat, if a small greenhouse, or even a spare bedroom or bathroom, net lighted with gas, can be used for them. The first thing to be done, as they go out of bloom, is to pick off each flower as it fades; this is an invariable rule with all blossoms, for seed-bearing exhausts a plant much more than blooming, and few flowers can be expected next year on any plant which is allowed to go to seed. Ericas make their fresh growths directly after they blossom, and should be kept as warm and moist as possible at the time they do this; in fact, this is the only season of the year in which they will bear moist fire heat without injury to their constitutions. Directly after flowering, then, they should be removed to the greenhouse, and allowed to stand on damp ashes, or damp stones, to give the moist atmosphere they need at this time, as well as a thorough supply of water. It is an invariable rule with all Ericas that they must never at any time become dust dry, or their fine hair-like roots will perish, and the plant will probably die, or become a miserable object. Growing in peat as they do, they should have plenty of water given them at a time, so as to thoroughly saturate the whole hard ball, and if the plant should be in a very small pot, it is well to give it a slight shift directly it has bloomed, to give room for the formation of healthy roots. In pottling, the ball of soil must not be broken, only the drainage removed, and thorough drainage arranged in the new pot, which must only be slightly larger than the first. Having covered the drainage with the rougher parts of the peat, and this with a little fine soil and sand, place the ball of roots in the new pot (which must be well scrubbed inside and out and dried before using) and ram down all round the plant some compost composed of fine peat and silver sand. Great firmness is necessary in potting Heaths (or their delicate roots will not be able to grasp the new soil), and a space of at least three quarters of an inch should be left empty at the top, to hold the necessary water, the surface being made firm and even. Having been watered, and placed in a warm, close atmosphere, the Erica should be left alone, and not watered again until the surface soil is dry enough not to soil the finger, for overwatering before the roots have had time to grasp the new soil will be likely to rot them. When the new shoots have become pretty firm, and are no longer growing rapidly, the plant should be placed out of doors, in a shady spot, standing on damp ashes, and kept regularly watered throughout the summer. At the end of September (or before in a cold season) the Erica should be placed again in a greenhouse, or a bay window, from which frost is excluded; there it will form buds, and flower in the spring. If no greenhouse be available, a tolerable substitute for the moist air of a greenhouse may be made by covering a large old tray or flat bath with Cocoa-nut-fibre or Moss, which should be constantly kept damp, and standing the plants on the moist bed, without, however, allowing them to be in water. This arrangement in a bath-room window can be well carried out, but in severe frost Ericas should be placed at a distance from the window, in a warm bedroom, no gas being burned in it.—J. L. R.



Dutchman's Pipe (Aristolochia Siphon) and Ivy on a house wall.

is, therefore, particularly suitable for covering verandahs or summer-houses. As an extremely handsome, hardy, quick-growing plant, of the easiest cultivation, it certainly merits more general attention than it receives. The flower is inconspicuous, appears in early summer, and has a fanciful resemblance to the hawl of a German pipe on a short bent stem. Hence it is bracketed in the catalogues as the "Dutchman's Pipe." The Germans call it the "Pfeifenstrauch." It is deciduous.

3604.—Ericas after flowering.—Carefully remove all faded flowers, taking especial care not to pull out the young shoots, and return the plants to the pit or house from whence they came. Keep them well watered, as upon this point depends their successful cultivation. When the summer approaches hard-wooded

ones, so that the soil cannot well get water legged. After the crocks put a little of the rougher parts of the peat, and mixed with the peat should be a fair portion of sharp silver sand. Before repotting take care that the soil is not dry, and if this is the case it must be made thoroughly moist by soaking it in a pailful of water. After repotting put the plants in a frame and stand them on a layer of coal-ashes to prevent worms entering the bottom of the pots and disturbing the drainage. Give water also cautiously after watering. During the summer it is of the utmost importance not to allow the plants to get dry. If they remain so for any length of time they seldom recover properly, and they should not be exposed if the summer is wet and cold, as it sometimes is.—J. L. R.

Probably this query refers to an Erica hyemalis, or one of the other varieties which

3631.—Climbing Roses, &c., for a house-wall.—Bonveirde is Malmaison is not a climbing Rose, although worth growing for its exquisite blossoms, which are borne earlier and later than most other Roses, often opening in November during a mild season, and again in May. Few climbing Roses would do well in a north-east aspect, except that most useful Rose Oloire de Dijon, which can be well grown at any point of the compass. Others, such as Hemera, and the sweet old China Monthly Rose, may do, if the situation be not too much exposed to the winds of winter, but if so, it would be wiser to substitute other creepers, such as Ampelopsis Veitchi, with magnificent autumn foliage of every hue; Clematis montana, with white starry blossoms, borne in the greatest profusion in spring; Yellow Jasmine, and others. Thorough preparation of soil with old manure dug in, and careful planting, are essential to the well-being of all creepers.—J. L. R.

INDOOR PLANTS.

3607.—**Treatment of Palms.**—As regards pots for Palms, both the stronger and more weakly growing kinds will succeed with lesser root space than the majority of pot plants. If, however, you wish to get specimens, then more liberal treatment may be advised when the plants are young. A very good time for potting Palms is the present, and for such kinds as *Cocos Weddelliana*, pots two sizes larger will be quite sufficient for the plants, and the best soil to use is a good yellow loam; but in loam of ordinary character they will succeed well, and to the compost should be added a fair portion of silver-sand. Drain the pots by putting in the bottom a few crocks, and make the compost firm, as Palms, like *Ericas* and hard-wooded plants generally, do not like loose soil. Such Palms as *Chamaerops humilis*, *C. Fortunei*, *Latonia borbonica*, *Rhaphis flabelliformis*, etc., do not require a high temperament; a greenhouse will suffice for their growth. If they are not wanted of very large size in future pottings a good plan is to take the plants out of the pots, and after removing some of the old ball carefully return them again to the same size. The pots must, of course, be well cleaned and dried before again being used. After repotting keep a warm temperature maintained to assist them to get established quickly and syringing freely. Water cautiously at first, but afterwards more liberal supplies may be given. During the summer months it is important to give shade, as when the sun shines full upon the foliage it gets scorched, and the beauty of the plants is thus destroyed. This is a very good time to purchase a few good healthy plants to commence with. Remember also that if the plants are used in rooms or such places the foliage must be kept continually sponged, to prevent accumulations of dust, which are very hurtful.—C. T.

—“Jane” does not say whether or not these Palms are used for room decoration, but if so they will require more care than in an ordinary conservatory, where most Palms will do well, if regularly watered, and allowed a warm temperature. Palms in dwelling-rooms should be sponged every week, for the dust soon accumulates on their broad leaves, and interferes with their health. Great care is also necessary with regard to watering Palms, which should never at any season of the year be allowed to become dry, but they need a great deal more water during the summer, when they make their growth, than they do in the winter season. The best rule is to place the finger on the top of the soil when in doubt, and supply water only when this is dry enough to leave no stain on the skin. But when water is given it must be supplied in sufficient quantities to run through the pot, the saucer in which it stands being emptied an hour after watering, for the plants must on no account stand in water. Potting may be done best in spring, but Palms do not often need potting, and are best in small pots for this size. They should have a mixture of two parts pot to one of leaf-mould, with plenty of silver sand, which should be tightly rammed round the ball of roots without disturbing them, except to remove the drainage. Palms need excellent drainage; this should be carefully arranged as follows: Cover the hole of the pot with a piece of rock, the concave side downwards, and place over this several smaller bits, so as to keep a clear egress for water. The crocks should be covered with a bit of Moss dipped in soot, to keep insects out, and then with the rougher parts of the peat, reserving the finer soil for the upper part, and pressing this firmly home with a blunt potting-stick. Enough room should be left at the top for watering purposes, and all made firm and smooth with a sprinkling of silver sand to finish, as this helps to prevent the pot from “greening”—i.e., becoming mossy and sour. Palms when repotted require damp heat for a time to enable them to make fresh roots. If a conservatory be not available the plants should be sent to a horticulturist’s for two or three months, and then carefully hardened to the open air, which is not difficult in July or August. They will do well for years in a sitting-room, if once well established and regularly cared for, even standing (at least some of them) a little occasional gas, which usually is fatal to plants

life. Soot-water in a thin state will help to support them if in rather small pots, but it should not be given unless the plants are in full growth, and then not more than twice a week at the outside.—J. L. R.

3627.—**Cyclamen culture.**—It is a bad practice to put the tubs in the open air. They should be kept indoors till the foliage dies off, watering them carefully. When the leaves die allow them to remain for a fortnight without water, then shake away all the old soil, and re-pot in a nice free compost of two parts fibrous loam and one part leaf-soil, with a liberal addition of white sand. Water only when the soil is quite dry till the young leaves appear, and then more freely. Plenty of flower-buds will then form during the autumn months. You may certainly use a little bone-dust in the compost.—J. C. B.

3606.—**Hydrangeas for market.**—The common *H. noronensis* and *pauciflora grandiflora* are most largely grown for the London markets. The latter has become very popular during the last few years, and when really well grown makes good prices during the latter part of May and through June. *H. hortensis* can be had in bloom a month earlier, and with high culture produces enormous heads of bloom in 6-inch pots. The white variety, Dr. Hogg, is also grown to a considerable extent. Cuttings strike freely in cold frames if they are taken just as the wood matures. To obtain large heads of bloom, the cuttings should be inserted singly in small pots, shifting them at the turn of the year into 5-inch pots, using good loam, with a liberal addition of rotted dung or some concentrated stimulant. Liquid-manure must be given freely as soon as the flower-trusses form. *H. paniculata* requires a longer period to bring to good marketable size. The young plants are best in the open air through the summer, pruning them in hard, and putting them into their blooming pots in January. For early bloom constant warmth is, of course, required.—J. C., *Byfleet*.

3667.—**Malmaison Carnations.**—These are easily grown and soon form large specimens if they are treated as greenhouse plants. I had one plant only die this year, and have no doubt that its death was owing to careless watering. A plant may get over-dry and the fine, delicate tips of the roots perish. The gardener observes his plant in distress, and finding it is caused by dryness at the roots, he pours water into it freely, with the result that the plant cannot take up the water, and instead of holding back from the free use of the water-pot, more and more is given, the roots perish altogether, and the plant dies outright. This, I know, is the cause of the death of some Malmaisons; others are killed by a wireworm getting to the part of the stem underground. The plants like good rich potting-soil, composed of four parts good fibrous yellow loam, one part leaf-mould, and one part decayed manure with a portion of coarse white sand. Some persons overpot their plants; this is a grave error, and if not carefully watered after may be the cause of the death of some. Water the plants when they really need it, and this can be ascertained by tapping the sides of the flower-pots with the knuckles of one hand, using the water-pot with the other. Do not give manure-water to any plants until it is seen that they have filled their pots well with roots.—J. D. E.

—Very likely a wireworm had found its way into the pot, or the egg may have been in the soil when the plant was potted. These plants also occasionally collapse in the way described if overwatered, and as it was so full of buds, very likely it may have had a little too much sometimes. These, and indeed all Carnations, when grown in pots, should never have any water given them as long as the soil remains even slightly moist. The drainage ought also to be free, and the soil—a sandy loam is best—be compressed quite firmly in the pots. If any of these points are neglected the plants are very liable to become water-logged at the root, and then death is certain to ensue sooner or later.—B. C. R.

—These are far more difficult to grow well than many suppose, but it is worth trying to get good flowers, as they are very popular. I will give you a brief code of treatment followed in gardens. The flowering-time of the plants is April and May, and when finished blooming, the

usual course is to plant them out in the open, as this promotes a well-ripened growth. Layering is done as for the ordinary kinds. When the layers are rooted, which is in September, they are potted, 5-inch pots being the size used. A good loamy soil will form the best compost, and it should be mixed with a fair proportion of sharp silver-sand, also some charcoal to keep it sweet and open. Meanwhile, prepare a site for them in the open, laying down a layer of coal-sashes on the surface to prevent worms getting into the bottom of the pots and disturbing the drainage. Water thoroughly, and in the month of November remove them indoors, and another shift into 7-inch pots is given. During the winter months the plants must not be coddled in any way, but given abundance of air, and the soil only just kept sufficiently moist. Too much moisture is fatal. The plants may be grown also as perpetual-flowering Carnations are treated. I do not know your accommodation, but this will doubtless be the better plan for you. The general treatment is similar. Always keep the plants cool, hardy, and water cautiously. It is doubtless through too much water that your plant has behaved in the way described.—C. T.

Watering indoor plants with cold water.—In page 15, Vol. IX., of *GARDENING*, there is an article by a correspondent, “B,” under the above heading, where he brings fact and argument to prove that “undue importance has been attached to watering tender plants under glass with water of the same temperature as that in which the plants have been grown.” He mentions the case of a large house, filled with tender tropical plants “in admirable condition,” where for ten years there had been no other means of watering than with water contained in a large tank with no protection from the weather, a considerable amount of water being required, even in winter, when the tank was often covered with ice. He also remarks: “If cold water exercised a very injurious effect on the roots and foliage of tender plants—as it is often supposed it does if plentifully used—there would be certainly an end to Cucumber-growing in many of the London market gardens, where the only water obtainable is taken cold from the tap.” For some years I have used almost exclusively cold water to Cucumbers in house, pit, and frame with satisfactory results. At the present time I have Cucumbers in a hot-bed, growing luxuriantly, that are watered and syringed wholly with cold water from the tap. It is my opinion that where all the warm water for watering and syringing has to be taken from the kitchen boiler, and where a full supply cannot always be obtained (the water being required for kitchen and other household purposes), the fear of using cold water for the purpose is often indirectly the cause of red-spider.—L. C. K.

3657.—**Celsia oretica.**—You should be able to get seed of this plant at any good nursery, as it is not uncommon now, although at one time was little seen. The *Celsia* is a near relative of the *Mulleins*, and is not hardy, although as an annual it may be made excellent use of in the flower garden during the summer months. When thus to be grown, the seed must be sown early in the year in gentle heat, and grown on as for half-hardy annuals in general, being when ready to go out good-sized, robust examples. If you require the plants for the enrichment of the greenhouse—and it is excellent for this purpose—the best way is to sow seed now, and get the plants out for the best part of the summer, if possible, and pot them up in the autumn. It is not necessary to force them at all, and the plants when in full bloom are very ornamental, the flowers, rich-yellow, produced freely, and making a fine show. It is a pity one does not see the *Celsia* more in small gardens.—C. T.

—Apply to Mr. W. Thompson, 32, Tavern-street, Ipswich.—A. H.

—I do not know where seed of this plant is to be had, but if “B.” likes to send me his address, under cover to the Editor, I can put him in the way of obtaining young plants of this apparently rare but charming subject.—B. C. R.

3690.—**Treatment of an Oleander.**—It will tend to make the plant bushy at the point of the shoot if picked out at the end of July or August, two-thirds, or three-fourths, with seed enough to make it fairly good, will grow and flower well. The plants require a good deal of water at times, so the drainage must be right.—E. H.

NEGLECTED GREENHOUSE PLANTS.

LUCULLIA GRATISSIMA.

The limited extent to which the cultivation of this handsome flowering shrub (here figured) has attained since its introduction some seventy years ago would lead one to the conclusion that it does not merit any particular notice by lovers of the very few really good plants that are to be seen in gardens. Such, however, is far from being the case, for wherever the culture of temperate-house plants is attempted, there the *Lucullia* should find a congenial home. It may be grown in a greenhouse which accommodates the majority of plants coming under that designation, but it is not so much at home in such a house. A house which is suited to Camellias, and where the surroundings are such as to be conducive to a healthy and vigorous growth in the case of these plants, is also calculated to suit the *Lucullia* remarkably well. This may to some seem strange when a temperate-house has been more particularly recommended, but it must be borne in mind that when Camellias are making their growth they delight in a fair amount of warmth and plenty of moisture. If the *Lucullia* is given such a house it should be placed in a position where not liable to suffer from sharp currents of air, nor should it be too much exposed to the sun's rays during the middle of the day. A conservatory wherein the majority of the plants are growing in beds rather than in pots or tubs will be an excellent place for it. If a space of wall has to be covered where it is possible to plant the *Lucullia* out without the opposite extreme of too much soil, there it may be grown with every prospect of success. It is more adapted for growing in beds and borders than in pots, yet, as indicated in a previous sentence, the opposite extreme must be avoided, otherwise there will be a tendency to make rank wood, which will be unproductive of bloom. A regular soil, it does better in peat than in loam. Light loam will suit, but any tendency to a heavy retentive soil should be avoided at all times. Light fibrous loam and peat of good durable character in equal parts, with the addition of coarse silver or river sand, would make a capital mixture for it; lime rubble and charcoal would likewise be good additions. The pruning should be seen to after flowering; some in most instances will be found necessary; it thrives well when pruned rather hard, but I would prefer a more moderate course. Before pruning it is a safe plan to let the plant get dry at the root to prevent exhaustion by its bleeding. The stronger shoots should be stopped so as to regulate the growth before they become too much advanced.

P.

ANNUALS FOR POT CULTURE.

WHERE the room is all too limited for the proper cultivation of permanent plants, whether soft-wooded or such as are of hardy and enduring growth, more dependence should be placed upon annuals for purposes of decoration during the spring, summer, and autumn months, more particularly the two last named seasons of the year. For the early spring time the seed would have to be sown the previous autumn, frame protection being provided during the winter months. Annuals for pot culture must be divided into three heads—viz., hardy, half-hardy, and tender. Of the first named there is a good number of kinds that are particularly well adapted to the purposes in view, and which if sown at once will give a good return in the shortest possible space of time. Some of the best of these are the following: Ten-week Stocks in various colours. In the case of these I have myself kept to the large-flowering scarlet, purple, and white varieties; these are very reliable and afford for all practical purposes three as distinct colours as one could desire. The habit, too, of this strain is excellent for pot culture. For later flowering the East Lothian strain of Intermediates in their distinct shades of

colour should also be included. The best way with these Stocks is to sow thinly in shallow seed-pans, raise in a steady heat, and remove to a cool-house or pit as soon as the plants have fairly developed their seed-leaves. Great care is necessary to avoid damping off; this will occur if the young plants are kept in a moist atmosphere, or if kept too freely watered. A dry position with a free circulation of air (not necessarily cold) and a moderate supply of water will be found the best. As soon as fit for pricking off, three or four plants should be put into a 4½-inch pot, using good light loamy soil and leaf-mould. This size of pot will be found better than a smaller one, no further labour being afterwards required in repotting, as they will flower well in the size advised. In cultivating Stocks in pots many make the common mistake of supplying the plants with too much water before the pots are fairly well filled with roots. For instance, if one watering is given when the seedlings are pricked off, no more will be needed until the soil is quite dry; not even a damping overhead is advisable. The young plants, it is true, will droop, but this never need cause any anxiety; they will come round quickly enough and in a far more satisfactory way than when coddled too much. When the flower-spikes begin to show, then more water can be given in safety with occasional applications of weak liquid-manure. When the first flowers unfold the plants may at once be placed where they will remain whilst in



Flowering-shoot of *Lucullia gratissima*.

bloom. A few weeks previously it will have been possible to grow them out-of-doors (or at least in a frame with the lights on at night) in the case of the Ten-week varieties, whilst the East Lothian forms will, of course, have a long period in the open before they flower.

MIGNONETTE SEED of such approved kinds as the French variety Machet, Miles' Spiral, Crimson King, Dwarf Erect, and Oaraway's White, if sown now will provide a most useful lot of plants that will come into flower before the outdoor stock, and in succession to the autumn-sown stock. Mignonette-seeds should always be sown in the pots in which the plants will afterwards flower when the growing of a serviceable decorative stock is the primary object in view. Repotting into larger pots only involves unnecessary labour, absorbing time which might be more profitably devoted to other things. It is, of course, essential to give shifts when growing larger plants as standards or as extra-sized bushes. For most practical purposes what are termed 48's and 32's will be found the best sizes to use; smaller pots involve more labour in watering, larger ones give too much soil, with a disposition on the part of the plants to die off when the soil is overmoist and the seedlings not arrived at a good size. The soil should be obdurate loam, the best being that which is of a friable nature, neither too heavy nor too light; and too heavy some leaf-mould should be added. This soil should, if possible, have some

lime rubble that has been powdered down fairly fine mixed with it, and that in place of sand; it should also be quite on the dry side. I do not mean absolutely dry, the object being to ram it as firmly in the pots as when potting pot Strawberries or Cape Heaths. The object of this is to secure a more enduring growth; in loose soil the plants grow too rank, whilst the same condition will tend to a greater retention of moisture for a longer period than is desirable. The pots should be well cracked; then a layer of fowl's manure, if available, should be added before the soil, not mixed with it, for the simple reason that this stimulating agent is not needed until the plants are well advanced. With a firm surface the seed should be sown, and a little fine soil added in the same manner; no heat should be employed to raise the plants, a cold pit or frame being the best place. The surface may be advantageously screened by means of sheets of paper until the seedlings are above the soil; then all the light possible should be given. When large enough to see which are the most promising plants, the weaker ones should be thinned out, so as to leave from five to seven of the best to each pot. Until well established, a moderate supply only of water is needed, but when it is seen that the plants are making good headway, then more is required. Mignonette should never be allowed to suffer for want of water, more particularly when the pots are filled with roots. If allowed to get dry a few times, the older foliage will soon fade to a brownish colour and tell its own tale. As an additional stimulating agent, I have not yet found anything to surpass weak Peruvian guano-water; this will fulfil all the requirements. The best plants in my case have been grown upon light shelves near the glass. True, they take a lot of water, but without painstaking no one deserves to succeed. When in full bloom the plants can, of course, be placed where desirable, but the seed-pods should be removed, so as not to distress the plants. There are several varieties of annual

GRASSES, such as are termed ornamental, which are well worthy of extended cultivation in pots. Of these the following may be recommended as amongst the best: *Agrostis nebulosa*, *A. laxifolia*, and *A. pulchella* (the last making the most compact plants). *Briza gracilis* is the most suitable for pots of its class. *B. maxima*, although a beautiful kind in the open border, is not so well suited for this work. *Eragrostis -legans* as a later kind to come into use is especially good. This Grass is best sown in the open ground, being lifted when of good size for potting, but not sufficiently advanced to cause any check to the growth; the pots should then be replunged in the open ground, looking to the watering as may be desirable. *Hordeum jubatum*, although a tall-growing kind, is well worth attention, and so is *Lagurus ovatus* (the Hare's-tail Grass). These are all varieties that are ornamental in a flowering state, but for its value as being ornamental in its leaf-development, *Eulalia japonica zehra* should be named; its use would save many plants of enduring growth from being run upon too much in decorative work. A fairly light soil will suit all of these Grasses, the same-sized pot as recommended for Mignonette being advised, and with the one exception named above it is best to sow the seed and not afterwards disturb the young plants, that of the *Eulalia* being sown quite thinly. A very pretty plant of dwarf growth is

ASPERULA AZUREA SETOSA, a species of Wood-ruff. Although it is not a showy kind, it is extremely pleasing when in flower; it does not require any special cultivation. For flowering during the summer months the *Calliopsis* are well known in the open border, but they are quite as useful in pots when a fair amount of pains is taken in their culture. The seed may be sown in the open or in pots. I prefer the latter method, a shift being given once when the plants are so near to need it, some little time before coming into flower. Having arrived at this latter condition, they should be brought under cover and kept freely watered; a light position will suit them best. Of the Campanulas, the quick-growing *C. Lorei* should not be passed over. A few seeds of this small Bellflower may very well be sown in the pots with the *Gremonia* previously alluded to; this makes a very pretty mixture. *Centaurus* furnish us with the *Corinthians*, which will

make most fitting companions for the Calliopsis, requiring likewise a generous course of treatment. Should the plants in either instance be found to grow too tall for the particular purpose in view, it will be well upon the second attempt to pinch them before too far advanced. Hibiscus africanus, with its large, sulphur-coloured blossoms, is quite distinct, and is to be recommended where there is a good variety of flower required with a large space to be filled during the summer months. *Linnæa grandiflora coccineum* is a very free growing annual in the open border, being also for pots a very distinct addition; it requires all the light possible when taken under glass.

NEMOPHILA INSIGNIS is an annual that is rarely seen in pots, yet for this system of culture it is admirably suited. It is beautiful when used in margins of stages in the greenhouse or conservatory during the summer. This *Nemophila* may be transplanted from the open border when small; if wanted earlier it would be better to sow in pots and raise in a cold frame. When kept well supplied with water after having filled the pots with roots, it will last a long time in beauty. The most approved varieties of *Asters* hardly require any recommendation, being so well known to many growers, and by many grown in pots for autumn decoration. Grown in pots is perhaps not a correct term, as in most cases the plants are pricked out in the open ground as with other *Asters* to flower outside, being lifted just as they show for bloom. Between that time and the period of blooming there is a long enough interval for them to become well established. The best results are obtained by adopting a hardy course of culture so as to secure dwarf sturdy plants when lifted for potting; it is better therefore to grow the plants in as open a position as possible. The following are half-a-dozen good kinds for growing in pots: *Diadem*, *Veitch's Empress* (both crimson and white varieties)—one of the very best—*Triumph*, *Snowball*, dwarf *Chrysanthemum*-flowered, and dwarf *German*. With such a selection it will be possible to have a long season of bloom, for it will be a rare occurrence to find all of these various strains in flower at one time. Sweet Peas in pots are somewhat of a novelty, yet they can be grown most successfully in pots, but better still in long boxes such as are used in windows. The best success with these fragrant flowers I have noticed in the case of a grower of known repute has been, when sowing the seed in August, the plants were kept in a cool-house all the winter, steadily growing meanwhile and flowering profusely in March and April, when such flowers would be a most agreeable and welcome addition to the cut-flower supply. The plants as they increased in height were trained up the side of a span-roofed house next the glass, producing a very pretty effect, whilst but little room was taken up by the boxes. Well-grown plants of hardy annuals in pots will give a good return for the labour expended, whilst the details of culture are such that anyone may grasp them, finding out for himself, after a few experiments, what in their particular case gives the best results and renders the most service during any particular period. The great advantage in growing such plants is that of being able to throw them away as soon as they fade; thus it is possible oftentimes to retain them in positions where it would not be deemed advisable to allow plants of permanent growth to remain. To those who have to make a good show in their houses with the minimum amount of room for growing and storing plants, I strongly advise recourse being had to these beautiful plants. P.

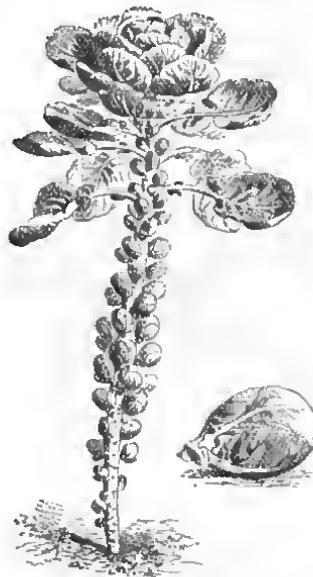
3624. — Bulbs from Cape Town.—Taking the plants in the order on the list, first we have the *Belladonna Lilies* (*Amaryllis Belladonna*), which will flower well in the open, but, as a rule, do much better in a greenhouse. As you require, however, to know only what will succeed out-of-doors, you may plant the bulbs in a border facing south, and the soil must be good and deep loam; leaf-mould, with sufficient sharp silver sand to make it pliable and fairly light, being the most suitable. It is such a position as this they do well in the Royal Gardens, Kew, where the bulbs flower each year with great freedom, making a great show of colour. This border of *Belladonna* is a picture of colour, the

dark-chocolate stems and bold rosy flowers making a fine effect. You may plant the bulbs now, and if to be grown in pots, put one bulb in each, using a good loamy compost for soil. It is interesting to know that *Dean Herbert*, whose work amongst the *Amaryllids* is famous, grew his *Belladonna Lilies* in a similar position to that described. The *Freesias* should be grown in pots in the greenhouse. The *Watsonia marginata* requires similar culture to the *Gladiolus*, and the genus is very interesting. The flowers of the kind mentioned are delicate rose, and there are several other kinds worthy of mention, as *W. angustifolia* (light-pink), *Mariana* (purple-crimson), *W. speciosa* (crimson), and *Louis XIV* (rose), besides many others. The *Watsonias* are quite hardy; but they are not very often seen in gardens. They are natives of the Cape, and the bulbs should be planted in warm situations and light soil. Give them similar treatment to that required by the early-flowering *Gladioli*. *W. alba* has white flowers, and is a very beautiful plant. The same remarks apply pretty much to the *Ixias*. They must have warmth, but you can try them in the open, putting them in a well-drained position, the soil light, and, if possible, against a hot-house wall, facing south, as mentioned in the case of the *Belladonna Lily*. *Babiana* may be treated in the same way.—C. T.

THE KITCHEN GARDEN.

BRUSSELS SPROUTS.

DURING the last twenty years a number of varieties of this hardy and highly-esteemed



Old Tall Brussels Sprouts.

vegetable have been raised. However much may have been gained in size, it is questionable if we have made much (if any) progress as regards quality. For a long time past it has appeared to me that the Brussels Sprouts of my youth were much superior in flavour and appearance when cooked than those that come to my table at the present time. The sprouts furnished by the newer vigorous-growing strains have a more Cabbage-like taste, and the larger they are the more they lack the true old Brussels Sprouts flavour. The striving after mere size in vegetables is a great mistake, for no increase in this way will compensate for loss of quality. When the Aigharth Brussels Sprouts became so popular some years ago I was charmed with the wonderfully vigorous growth they made. I put them on ground that had been trenched 2 feet deep, and they made stems 3 feet in height with immense foliage, and the sprouts were double the size of any I had ever previously grown. The members of my household, however, unanimously condemned their flavour, and from that time I have never cultivated the Aigharth. I fancy that many were disappointed with this giant kind, for it soon lost the

popularity which its great vigour and productiveness apparently warranted. For some time I have been trying various newer varieties, all of which seem to have gained in vigour at the expense of quality, with the exception of one that I have grown for the last two years. This is grown largely in the Midland and Northern counties. The sprouts are said to make higher prices in the northern market than those of any other kind. Although I gave the plants good ground which had been deeply trenched, they did not run up to so great a height as most varieties do, and the leaf-development was not so exuberant. The yield of sprouts was, however, very large, and what is even more to the purpose, their flavour left little to be desired. The old Tall Brussels Sprouts (here figured) is now not often seen in our gardens, but it produces rather small sprouts of very excellent flavour indeed, and it is hardy and continues to bear for several months. B.

A good Rhubarb.—Rhubarb is now plentiful in gardens, but the kinds grown are generally those with big, coarse stalks, which have not half the flavour of the smaller-growing varieties, such as *Hawke's Champagne*. I notice this excellent variety, and it is one that should be grown by all who put juiciness, flavour, and first-rate quality before quantity. Of course, there is much more in the big-stalked Rhubarb, but such a kind as *Hawke's Champagne* is delicious. The stalks are thin, but deep-crimson, and yield rich juice. It is the finest kind for flavour without question in cultivation, and grows well in good garden soil. One seldom or never sees it at exhibition, as such varieties are not of much account there. Everything is sacrificed for rare size.—C. T.

3661.—Wire-netting for Peas.—Yes; this forms a fairly good substitute for the usual sticks, but the mesh must be large—3 inches or 4 inches. A better and cheaper plan—at least, to my idea—is, however, to run some ordinary twine to and fro along each side of the rows, about 6 inches apart, taking a half hitch round each stake. For a tall Pea, like *Duke of Albany*, you would, of course, require two 3-foot widths of the netting on each side the row.—B. C. R.

—Wire Pea hurdles are especially made for supporting Peas, and if taken care of they will last a long time; or ordinary large-meshed wire-netting will do, fixed to stakes in the ground. This will be cheaper than Pea hurdles, but not be quite so convenient.—E. H.

3671.—Good King Henry and Salsafy.—If the seed germinates and the young plants do well, they ought to be nice little stuff by the autumn, just right for moving; and if replanted, say in October, will begin to be productive the following spring. The roots of Salsafy may be lifted and stored in sand, like Carrots, in October for winter use, though I always think they keep better in the ground.—B. C. R.

—If the seeds of Good King Henry grow, the young plants will move safely anywhere in autumn. Salsafy may be lifted in October, and laid in elsewhere till required for use. Frost does not injure Salsafy, and if laid in a trench it will keep quite fresh till required for use.—E. H.

3684.—Best Melon and Vegetable Marrow.—Melons cannot be grown in the open ground in this country. The fruit would be flavourless in the average summer. Little Heath, a hardy scarlet-fleshed variety, will do under glass with a bed of fermenting materials to start it if the summer is a warm one; but I suppose scarcely anyone who knows what the flavour of a good Melon is would call the Little Heath when grown cool first-class. As regards Vegetable Marrows none cannot go far wrong. The Long White and Long Green are excellent when cut young. Hibberd's Prolific is much smaller, but in all other respects it is excellent, and is, perhaps, better adapted for a small garden than the larger-fruited kinds.—E. H.

Looks and their culture.—To have these large and fine they require a long season's growth, and must, therefore, be sown early to get the plants forward and strong before planting them out. A good way of managing with them is to fill a shallow box or pan with fine rich soil and sow the seed therein, placing it in some warm-house, pit, or frame to get it to germinate. As soon as the plants are large enough to handle, they should be pricked off or potted singly into small pots and be nursed on under glass till they are big enough and the weather is favourable for turning them out. To get ready for

this, one method, and that the best, in to form and dig out trenches 8 inches or so wide and 6 inches deep, after the manner of those for Celery, and heavily manure the same, well breaking up the bottom and mixing it in, after which the Leeks should be planted a foot apart and be heavily watered, so as to thoroughly settle the soil about them and give them a start. For ordinary purposes very good Leeks may be grown in ground that has been trenched or otherwise well cultivated and enriched. If drills be drawn and large, deep holes made with a big dibber, into which the plants may be dropped or placed, so as to have only just the tops of the leaves standing out, and if a little soil is run in or water poured down into the holes, the roots will soon get a start and the plants grow quickly if kept free from weeds during summer. The hoeing requisite to accomplish this gradually fills up the big holes with earth, and by its means the stems of the Leeks become blanched and usable for the length of a foot or more without any trouble. Those in trenches, of course, require soiling, but that should only be done by degrees, and good soakings of liquid-manure given whenever they become dry at the roots.—D.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of GARDENING, 37, Southampton Street, Covent Garden, London. Letters on business should be sent to the Publishers. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, rules, and notices every so often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appeared.

- 3723.—Standard Azaleas.—What treatment will these want to preserve them through the winter out-of-doors?—T. EDMUNDS.
- 3724.—Moving a Christmas Rose.—At what time of year can I safely move an old-established and large clump of Christmas Rose?—ISLANDIA.
- 3725.—Ivy covered with black-fly.—Is this fly injurious to ivy growing on the outside of a house? If so, what is the best manner of removing it?—S. M. D.
- 3726.—Caterpillars on Currant-bushes.—Will someone kindly tell me what is the best remedy for destroying caterpillars on Currant-bushes?—O. E. C.
- 3727.—Fertiliser in a garden.—What fertiliser would be a good substitute for farmyard liquid-manure for pot-plants out-of-doors?—Bosses and Chrysanthemums?—M. D.
- 3728.—Plants for a border.—Will someone kindly name some good hardy border plants having scented foliage, and also any others with variegated foliage?—A. SANDRA.
- 3729.—Pronunciation of Clematis.—I should like to know which is the correct pronunciation—Clem-at-iss or Clem-a-tis? Do not botanists prefer the former form?—PAUSTIA.
- 3730.—Weed-killer.—Will somebody kindly inform me how to make a cheap and effective weed-killer for gravel paths, stating ingredients and probable cost of same?—SOUSSAIA.
- 3731.—Hyacinths, &c.—I have had splendid Hyacinths and Tulips out-of-doors. When foliage dies should I take them apart and keep dry till October, or leave in the ground?—ANSTY.
- 3732.—Propagating Azaleas.—I shall be glad if someone will tell me how I can increase the number of my Azaleas, Mrs. Van der Cruyssen and A. Mollis? I have a warm greenhouse.—H. B.
- 3733.—Box edging.—I have just planted some Box edging, which, owing to the different lengths of the plants, is very uneven. When shall I trim it level, now or at end of season?—T. EDMUNDS.
- 3734.—Hollies.—I moved some plants from 4 feet to 5 feet to height last February. They are now casting off all their leaves, and I fear I shall lose them. Can anything be done to give them a start?—S. M. D.
- 3735.—Green-fly.—I had the green-fly so much trouble amongst my flowers, I fear I beat get rid of it. Tobacco-smoke in the conservatory is so unpleasant, and spraying seems to do no good.—AMATEUR.
- 3736.—Treatment of Vines from cuttings.—I have struck several cuttings of a Vine, and I find they are growing. I shall be glad of information as to the best way to treat them in a small way? I have a warm greenhouse, facing south.—H. E.

- 3737.—Chip baskets, &c.—I want chip baskets or boxes for Royal Fests to send tall Lillies in, measure, 2 feet 7 inches long, 10 inches wide, 7 inches deep, with lid. Where can I get them?—MRS. DYKZA, The Red House, Kenrick.
- 3738.—Watercress for profit.—Would anyone kindly inform me what profit might I expect from 1 acre of Watercress, doing all the work myself, and where can the Cress be disposed of? Would Covent-garden Market do?—BRINKHURK.
- 3739.—Acacia armata and Oytisus in pots.—I should be extremely pleased if anyone would kindly enlighten me with regard to the treatment of the above to bring them to perfection? My master makes a speciality of them.—NEW READER.
- 3740.—Insects on standard Roses.—I have some standard Roses which are attacked by small yellow insects, that perforate the leaves, and they then decay. Will someone kindly tell me what is the best remedy for this state of things?—TERRA.
- 3741.—Olethra arborea.—I should be glad to know how I am to treat a *Olethra arborea*, which I have lately obtained? It is growing in a 5-inch pot in greenhouse, and is about 18 inches high. Any information will be gratefully received.—O. E. C.
- 3742.—Bulbs from South Africa.—This is extremely obliged to "J. O. G." for his information as to how to treat the bulbs, and is she right in understanding that the *Styrium* should be plunged in a hot-bed now and kept there?—MRS. JOHNSON.
- 3743.—Auriculas in the open air.—Will someone kindly give me some information as to the best way of growing Auriculas in the open air? Should I sow seed or get plants? The soil in my garden is dry, light, and seedy, and I live over the sea.—RIS.
- 3744.—Shrub seeds from New Zealand.—Will someone kindly give me a few hints as to the raising and subsequent treatment of some shrub seeds which I have had sent from New Zealand? I possess a brated green house and a cold frame.—KENT.
- 3745.—Greenhouse plants from seed.—Will someone kindly advise me as to what seeds I should sow to supply a small span-roofed greenhouse with flowers during the autumn and winter months? Day temperature in winter about 55 degs.—S. M. P.
- 3746.—Bone-meal for Chrysanthemum.—Will "E. M." or some other experienced grower of Chrysanthemums kindly tell me if bone-meal as used by farmers for manuring purposes is good for mixing with soil for potting Chrysanthemums, &c.?—AMATEUR.
- 3747.—Maiden-hair Ferns.—I am anxious to grow these Ferns from spores. Will someone kindly give me full particulars as to how is the best way to proceed, where to get the spores, the best kind to have for conservatory and house decoration, time of year for sowing, &c.?—AMATEUR.
- 3748.—Calceolaria californica.—Would anyone be kind enough to tell me what *Calceolaria californica* is like, and whether it is good for bedding out? I have got a lot of them, and have never seen them before. They have brown stalks, and are very tender plants.—F. CLARK.
- 3749.—Lily of the Valley and Carnations.—Would someone kindly give me directions as to the management of Lily of the Valley in pots, so that I could have it so early as possible? Also what Carnations to grow for profit, and the best time to get them?—EDWARDS.
- 3750.—Horehound beer.—Will someone kindly give me a receipt for making Horehound beer, such as is sold to herb beer shops to Manchester and Prastoc? I have tried several times, but cannot get anything near it. Any information on the subject will be greatly valued by.—THURST, Devon.
- 3751.—Chrysanthemum for India.—I should feel obliged to "E. M." for the names of three dozen Chrysanthemums, divided as follows: 1 dozen Japanese, 1 dozen Incurved, 6 Reflexed, 6 Pompons? These are intended for specimens, and to be grown on the natural systems.—LOWE BENOAL.
- 3752.—Raspberry-canoe.—Every year when my Raspberry-canoe are in bloom small brown flies come and settle in the flowers, leaving brown marks. When the fruit grows and is palled a small maggot is found inside. What is the cause, and what steps can be taken to prevent it?—E. P. COLMAN.
- 3753.—Vinery.—I have some ground on the borders of West Brighton, on which I wish to erect a house or two for Vines. Size of ground, 120 feet by 40 feet. Will anyone kindly advise best style of house, and if it should be heated? Ground runs east to west. Where should the Vines be planted?—WEST BRIGHTON.
- 3754.—Using a fertiliser.—I have been given some artificial Fertiliser, but do not know how to use it safely for pot-plants or for Roses out-of-doors? Should it be used dry on the surface, or should it be mixed with soil, or should it be mixed with water? I should be obliged for directions and proportions in any case.—ANNETT.
- 3755.—Vegetables near Calcutta.—Will someone kindly tell me the names of the best sorts of the following kinds of vegetables suitable for garden culture in a place near Calcutta? Best, 2 sorts; Cabbage, 2 sorts; Peas, 4 sorts (late kinds to be avoided); Tomato, 2 sorts; Cucumber, 1 sort; Celery, 2 sorts.—LOWER BENGAL.
- 3756.—Rhubarb for show.—I have some Rhubarb which I want for show. Will someone please give me a few hints as to its management? It has already got some very fine stalks, and I want to know what sort of manure will be best, whether liquid or otherwise, and whether I shall let all the stalks remain, or shall I pull out just a few of the oldest ones?—RUBBANS.
- 3757.—Roses in a greenhouse.—I should be very grateful for a little advice from "J. C. C." or some other experienced Rose-grower. I have a two-year-old *Maréchal Niel*, planted out in a cool greenhouse. It flowered well early. I then cut it back, and have kept it pruned, with the result that it is now full of red buds 2 inches or 3 inches long. Should I thin out some of these, for in one or two of them are two or more in a joint? And should I discontinue liquid-manure? Also, when should I begin to give more air and harden off the young plants?—F. M.

- 3758.—Plants for a Birmingham garden.—Will anyone kindly tell me what vegetable or flowering plants would do well in a garden in the suburbs of Birmingham, in which Lillies of the Valley and Lettuce luxuriant? The garden is sunny and has very little shade, but hitherto I have been very unsuccessful in growing any kind of vegetables in it.—E. B. W.
- 3759.—Weeds in garden-paths.—My garden-paths are overrun with Couch Grass, &c., which is practically impossible to eradicate by the ordinary methods. I have decided to water the path with some powerful weed destroyer. Would someone with a similar experience kindly give me instructions for making a good weed destroyer, and also how same is used?—FERRELLAN.
- 3760.—Treatment of Cucumbers.—My Cucumbers plants are growing too luxuriantly. What is best to be done? Lean to house, or fire, but a hot-bed. Soil, last year's manure mixed; matted soil, earth. Will it injure the plants if I cut away some of the shoots at the bottom? I tipped out the buds too soon, causing them to send out shoots too low down, thereby covering the beds.—SUBSCRIBER.
- 3761.—A house conservatory.—I have a conservatory built between my house and the sea, and is 30 feet long by 6 feet wide, and 12 feet high. Glass roof and glass window at each end, on the first floor, with north and south aspect. Would anyone kindly advise me what to grow on the walls or on the stages? It is not heated, but frost can be kept out during the winter.—W. L. W.
- 3762.—Tuberous Begonias.—Will some experienced grower advise me respecting Tuberous Begonias? In February I bought some tubers, and put the large ones in pots and the others in boxes, which were then placed in a propagator, from which they were removed to the top shelf in an unheated greenhouse. Some of them are now 2 inches to 3 inches high. Should they be removed from the boxes into pots, and the others repotted, or leave them as they are for bedding out?—CONSTANT READER.
- 3763.—Treatment of a Myrtle.—I shall be glad if anyone will kindly tell me what treatment I ought to give my flowering Myrtle? It was a beautiful shrub, nearly 10 feet high, and bore splendid flowers. One severe winter it suffered by the frost, and has never recovered, the leaves bring now of a brown-green tint, the blossoms poor. I always cover the tree with a tent of straw now in winter, leaving a hole for air, but it does not seem to protect it, as it is now very bare, and the few leaves that are on top are quite brown.—H. P.
- 3764.—Seedling Begonia-tubers.—I should be very glad of some information about starting seedling Begonia-tubers? I got a dozen for bedding out from a nurseryman to first week of March. They were potted in tubs, and plunged in Cocoa-ouf-fibre in the propagator at a heat of 75 degs. for five weeks. Have since been standing on a sunny shelf in the greenhouse, but yet show no signs of starting. They have been kept just moist. Would some friend kindly say if the fault is in the tubers or to the treatment?—FIVE.
- 3765.—Treatment of Vines and Pines.—Thin wicker my Vines have had new soil, and have grown away very well with one shoot, but the hoppers are all withering just before coming into flower. I should be very much obliged if you could inform me the cause, as the gardeners cannot account for it? The Vines are in about 60 degs.; night heat the heat during the day is about 60 degs.; night heat from 65 degs. to 70 degs. What should the heat be, and should I give them any liquid-manure?—JAS. HOUSTON, JUN.
- 3766.—Calceolarias from seed.—I had a good collection of the above, which I raised from seed in the autumn. The plants were very healthy and robust, and during the last two months, with the exception of about half-a-dozen, they have all died. The lower leaves turned yellow, and gradually the whole plant withered away. I shall feel obliged if anyone can suggest the cause of my failure? The greenhouse that they were in was kept at a temperature of 45 degs. to 60 degs.—J. R.
- 3767.—Carnations (Malmalson, &c.).—Will "J. D. E." or any of your numerous readers inform me where I could obtain plants of the Striped Malmalson (Lady Middleton) and the crimson variety (Mrs. A. Waresque)? I have a quantity of R. Hols, Germania, Mrs. Mulr, &c., in pots in span-roof house (unheated). The flowers are about 23 inches in height. I want early flowers, but am afraid they will be weak. Would it benefit them to place them outdoors for a few weeks? I shall be glad of any advice on the subject.—S. H. S. R., Birmingham.
- 3768.—Standard Rose not breaking.—In October last I planted twenty-four Standard Roses (from a well known Exeter nursery), half of them are full of buds and in splendid condition, whilst the other half have made any sign; some of them have still a few small eyes remaining to the same condition as they were six weeks before. The Roses are all in one bed, in leamy soil well manured, and have been well watered twice a week. The flowers have all been pruned slightly. The Rose stems are full of sap and quite fresh. Will someone tell me the reason of my failure, and at the same time state the remedy?—L. LEXARD.
- 3769.—A Portugal Laurel, &c.—In April last year I had a large Portugal Laurel re-plantated, plenty of water being given at the time and afterwards. It withered, however, during the summer, and last nearly but it is not except a few. No new ones have appeared, but it is not entirely dead, as a few green leaves remain on it. If someone will kindly tell me what would be the best time to do so, I shall be much obliged? The same thing happened to a small Silver Fir, which is entirely denuded of all green, except the leading shoot. What can I do to improve these?—C. H.
- 3770.—Roses *Maréchal Niel* and *Niphetos*.—I have a *Maréchal Niel*, planted last autumn in a border in the centre of unheated span-roof house, and trained on a lattice. When planted it had two shoots about 6 feet long. The only pruning they received was to cut away about 2 inches of each. The wood is quite green, but all the leaves have fallen off for about 2 inches from the ends, and the lower portion of the leading shoot, which is from the lower part in bloom. I have also a climbing *Niphetos* in the same

position. It is making wood freely. Some of the blooms open all right, the majority do not. The stems turn black, and the blooms fall. Can you please tell me the disease and remedies? Ought I to prune the M. Nies? The plants have been syringed daily.—S. H. S. B., Birmingham.

3771.—Flowers for a sandy soil.—Will someone kindly advise me how to treat (for flower growing) the mean sandy soil of Sneyton (on Lantz hill)? When freshly turned up by a spade, it resembles sea-sand very closely, and appears to have an loamy matter or vegetable fibre whatever. Of course, I am aware that Roses are not to be thought of, unless I import clay, but what can I do for the average mealy perennial (shrub, climber)? I can buy (with some difficulties of delivery) estibur; leaf-mould I do not see how to obtain. Can any good be done with peat-moss-litter, which, at all events, is easy to obtain and to transport? Would it form a good vehicle for the use of guano?—A.

3772.—Trees, &c., for a garden-path.—I have a house with a long front garden facing due south, but well exposed to a westerly wind. Two long flights of steps lead up to the house, which is very elevated, and much above the level of the road. Before the first flight of steps I reached the visitor has to walk up a long gravel path, 31 feet by 8 feet, bounded on the one side by my garden, and on the other by my next-door neighbour's path and garden. Now, I should like to make this gravel pathway more attractive, not only to visitors, but from the windows of my high house. Will anyone kindly suggest anything? I should like some trees that would arch over, and so in time form a nice arbour. Hoses and other climbing plants might do, but I should not enjoy the flowers much, as naughty boys would soon walk them away.—AMATEUR.

3773.—Garden frames.—I am very much obliged to "J. C. G." for his kind reply to the above query of mine. See GARDENING, April 22nd, page 97. I would be further obliged to "J. C. G." if he would let me know how I should fix the independent bellies, and if the pipes should be at the top or bottom (I mean at the north or south inside in the frames)? The pit runs east and west, and the frames face the south. Also, should the hot-water pipes be between the surface of bed and the glass, and if so won't it be too warm near the pipes for any plants? I was thinking that the pipes might run through the centre of the bed under the plants. Would this be right? Also state how I should make a flue? I might come to the conclusion of building one. Which would be best?—ENGLAND.

3774.—Rose questions.—Will some of your readers reply to my following questions about Roses: (a) The names of best dark Roses? I mean those kinds only whose flowers are substantial, full, and of good shape, and which are free-flowering. (b) Is there any difference between "American Beauty," H.P., and "Triumph de France," H.P.? I find them to be identical, except in name. (c) The names of two dozen best Roses for nois flowers, and no dozen most sweet-scented Roses? Those that are free-flowering should be selected. (d) I should be obliged if any of your readers who have cultivated the undermentioned Roses would inform me of the growth, time of flowering, quality and description of the flowers, and the blooming qualities of the undermentioned Roses: Gustave Pigeaux, H.P.; Gloire de L'Exposition de Bruxelles, H.P.; Janna Brownlow, H.P.; Raynolds Hope, H.P.; Salamander, H.P.; Sir Rowland Hill, H.P.; Emulsion, Bourbon Perpetual, L'Idéal, N.; Climbing Perle des Jardins, E.; Baphio, T.; The Queen, T.; Wahn, T.; (e) The names of best orange-coloured Roses and best red Climbing Roses, either H.P., Tea, or Noisette?—LOWER HUNAL.

3775.—Tea Roses in a frame.—I have about a score of Tea Roses growing in a cold frame (span-roofed, 8 feet by 5 feet). They have broken strongly and are showing a good number of flower buds, but during the past fortnight some of the plants have suffered from mildew, owing, I think, to the difficulty in ventilating properly, whilst the sun has been so hot and the wind cold. I have now applied shading to the glass, and have syringed the plants with soft-soap and sulphur. The mildew has disappeared, but the Roses do not look so healthy as formerly. Half my plants are in pots, and half planted out in a bed of good chopped straw. Do they require any assistance in the way of liquid-manure or top-dressing? If so, how and when should I apply it? No manure was used at time of planting—last December. After watering and syringing some of the plants (notably Niphotes) lose a few of their leaves. How is this? The water is always used with the nozzle off, never cold. Would anyone kindly favour me with advice as to the points to be attended to in the successful culture of Tea Roses in a frame, and also give me a list of the most suitable varieties, the quantity to be desired being—1, Mildew resisting; 2, Perfect form and colour; 3, Freedom of flowering; 4, Free but not too vigorous growth? I would also be glad to thank "P. U.," "J. O. C.," and "A. H." for the help they have given me on this subject in the past.—F. P., North Cheshire.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

3776.—Seedling Dahlias (Dahlia).—Keep up a heat of about 60 degrees, and give air during the day when the seedlings are above ground.

3777.—Cutting down Solanums (S. T.).—Prune them in closely, and plant out in good soil. Lift in autumn when in berry for the conservatory.

3778.—Cinerarias (K. G.).—The Cinerarias you send are a very good strain, the flowers of good form and substance, and the colours bright and varied.

3779.—Forced Strawberries (D.).—Ventilate the house, so as to prevent the atmosphere becoming stagnant, as that is, above all things, most conducive to mildew.

3780.—Lawn marker (L. M. A.).—There are now various machines for marking out lawn-tennis grounds, and we advise you to apply to some of the firms who sell lawn-tennis apparatus.

3781.—Lily of the Valley damping off (Micham).—The spike sent looks as if it were produced from an "eye" that had become too dry before planting. We cannot account for it at otherwise.

3782.—Coquilla Nuts (E. J.).—These are the fruits of Attalea foenicifera, a tall growing South American Palm. It also yields a quantity of fibre, used chiefly in this country for broom-making. It is called Pisceba.—J. J.

3783.—Lilium giganteum (J. R.).—The bulbs, before they attempt to flower, usually send out several bulblets. These should be separated early, and grown on in order to succeed the parent bulb in flowering.

3784.—Golden Feather (Edging).—This is best raised from seed annually. It is too late to sow now; it ought to have been sown in February in heat, and the seedlings would have been ready to plant out now.

3785.—Treatment of Rhododendrons (Surrey).—If the plants are lanky, you had better cut every branch hard back. The stems will then throw out fresh shoots during the present summer if looked after as regards water.

3786.—Lapageria rosea (C. R. S.).—It was quite right to put the plant in a small pot. As soon as the roots fill it you should shift the plant carefully into a larger one, allowing, say, an inch of new soil all round the ball.

3787.—Spiraea after flowering (R. S.).—Set them out in a good open border, and treat them liberally with occasional doses of liquid-manure through the summer. Next year they will be fine plants, ready for potting up again for winter flowering.

3788.—Cattleya intermedia (Orchid).—You should keep the plant growing strongly. There is every probability of the shoots flowering. It is a kind that starting in the manner you describe, frequently keeps flowering or a long time.—M. B.

3789.—Ground Elder in garden (L. B. T.).—This is a troublesome enemy to deal with. There is no remedy but complete eradication of every particle of root that you can get hold of. It will probably take you some seasons to clear the ground thoroughly.

3790.—Dianthus neglectus not blooming (M. B. R.).—We can assign no reason for the plant not flowering. It generally flowers when strongly healthy year during early summer. If the plant is thoroughly healthy we think you need only have patience.

3791.—Spiraea palmata not flowering (South-ron).—This is not a difficult plant to cultivate, provided the soil is suitable. It thrives best in a moist soil, in which there is a little peat, as its roots are fibrous. It ought to thrive to perfection in a sheltered spot.

3792.—Palm-leaves becoming brown (W. J.).—There is some error in treatment, and it is probable, from what you say, that the cause is excess of water. Palm-leaves do not want to be continually deluged with water, although when in active growth they require an abundance of moisture at the roots.

3793.—Tulips and Crocuses after flowering (E. O.).—Do not lift the bulbs until the foliage is quite decayed, and cutting the leaves will impair the strength of the bulbs. You may leave Tulips and Crocuses to the ground all the year round if the soil is light, and they will be the better for it.

3794.—Transplanting evergreens (Laurel).—It is late for transplanting evergreens, but if the weather should be at once showery and muddy, not useless, you may transplant them now. The chief thing to guard against in transplanting at this season is dryness of the soil and atmosphere. All the really hardy evergreens should succeed in Durham.

3795.—Piper species.—H. B. sends one of this family for a name, and I cannot give it one. If I called it Piper glabrum it might not be called in question for a long time, but some day the true name would be found out. I should advise you to send it to Kew, and kindly ask the director to name it. They used to have a great lot of species growing there.—J. J.

3796.—Oncidium Schlimi (Orchid).—This is a plant that does not require resting at any season. It is a very gay Orchid, and although found by Linden over fifty years ago, it has never become a well-known plant in our gardens. This Oncidium is said to be a very cool one, but I should advise you to keep it in the bright side of the Odontoglossum-house.—M. B.

3797.—Leaf of Mueharia amazonica turning brown (P. S. E.).—If the leaf is decayed it is of no use leaving it on the plant, and the bulb will not bleed if it is cut off even when green. It was a mistake to give the plant guano or any manure whatever. Stimulants are only required when a plant is in vigorous growth. Nothing induces disease more in this and other plants than over stimulation by concentrated manure.

3798.—Olanthes (Orchid).—You have done quite right with these Orchids, and have sown your seed. You should let the young growths remain where they are at the top of the old growths, and some time, say in about a month, you may shift these and your other bulbs into 6-inch or 7-inch pots. The old bulbs are useless, and they will rot away in the course of the season. Keep them growing, and do not give them too much shade.—M. B.

3799.—Oncidium Marshallianum.—C. Blount says he has a plant with a branched spike, and it does not appear to move in the least. He thought to have had it open before now. Well, I am afraid you do not exercise much patience, but are apt to look upon matters with an unwise eye. It is not yet time for this plant to be in flower. The end of May see the beginning of June is quite time enough for that. Learn to exercise a little patience.—M. B.

3800.—Cattleya Schroderi, &c. (Orchid).—This plant should be grown on strongly, and although you have had only one flower upon a spike, I saw a specimen yesterday in an amateur's collection which was bearing five flowers, and scenting the house with their delicious perfume. When it has finished its growth it makes up a sheaf, and, like Mendell and Triana, should be left to rot through the winter. I am glad to hear you are so much taken up with your Orchid culture, it is a delightful hobby.—M. B.

3801.—Coccyne Massangana (Orchid).—I am glad you have invested in this plant, because it really is so very beautiful when in flower. Its peduncle spikes reach to eighteen inches or more in length, frequently bearing two dozen or more of its flowers, which are yellow and rich-bronze in colour. You must grow this Orchid in a strongly, giving it plenty of light and heat and a nice atmosphere. It grows freely under this treatment, and when strong enough it will bloom.—E. M.

3802.—Cattleya Gaskelliana (Orchid).—You are quite right in your supposition. This kind does flower upon the new growth soon after it has come up, and before it has become matured, so keep the plant, or plants, quickly growing until after the flowers are past; and after the growths are made up and finished off it requires to be kept comparatively cool and dry. This is the Cattleya that in my early days used to be known by the name of Labiata pallida. There are many varieties.—M. B.

3803.—Miltonia flavescens, &c. (Odontog).—This is a plant of no horticultural merit, and if you have not purchased it, if you would be advised by me do not do so, for it is possibly of no beauty, and such kinds should not be indulged in by amateurs. It is a very old species, having been introduced to our gardens over sixty years ago. It is also known by the name of M. stellata. The other two species, M. caudice and M. Clinevii, are fine species. You will find them commented upon in another place.—M. B.

3804.—Primrose and Polyanthus (J. W.).—Primroses are distinguished from Polyanthuses in having no main stem developed; the flowers appear to spring from the same point as the leaves, whereas in Polyanthus, Oxlip, and Cowslip the flowers are always grown in umbelled fashion, terminating an erect stem. Polyanthuses are probably more generally grown than Oxlip, and are generally coloured and often faced at the edges. The difference between the Oxlip and the Cowslip is mainly one of size, the former being twice as large as the latter. The botanical names are Primula vulgaris (Primrose), Primula elatior (Oxlip), Primula veris (Cowslip).

3805.—Epidendrum ciliare (J. Collins).—Yours is a very grand variety of this old plant, the flower being large, beautifully imbricated, and pure-white. You need not grumble about the plant, especially to me, for I did not sell it to you, our old I advise you to purchase it, so that I am in an sort of manner chargeable with your disappointment. I do not know why such a variety should be so much despised, for although not having broad sepals and petals to taste the eye, it has the Cattleya flower, it is very pretty. There is one thing against it, however—it was introduced upwards of a hundred years ago, and consequently it is an old plant, and I think that is the secret.—M. B.

3806.—Repairing garden hose (Amateur).—The instructions you refer to are probably those given by "EXEN" to GARDENING, June 10th, 1883. They are as follows: Take 2 ounces or more of naphtha, into which drop as much shellac as it will absorb till of the consistency of thick gum. Cut some bandages of canvas, American cloth, or thin leather, spread the composition on one side of them, then had them tightly round the hose, and fasten firmly with a nail. Let it remain for a few days, then take off the waste. The hose must be dry before the plasters are applied. Keep the cement in a glass-topped bottle. It is good for many household jobs, and will not dissolve in anything except its own spirit.

3807.—Caterpillars on Gooseberries (Everett Burriss).—The caterpillars attacking your Gooseberry-bushes are the young caterpillars of the Magpie Moth (Abraxas grossulariata). Syringe the bushes with 7 lb. of soft-soap, the extract from 6 lb. of Quassia-chips, added to 100 gallons of water; then beat the ground under the bushes with the back of a spade to kill the caterpillars which have fallen to the ground. Or use 9 gallons of warm soft water, half a pound of soda, half a pound of salt, and a handful of soot. Or sprinkle the bushes with fresh soot, or lime and soot, early in the morning when the bushes are wet with dew. In the winter, carefully remove the fallen leaves and any rubbish from under the bushes, and any leaves which have not fallen, as the caterpillars hide among them during the winter, and the ground should be well dressed with lime.—G. B. B.

Names of Plants and Fruits.

*. Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C.

Names of plants.—A. Pickard.—Polygala Dalmaniana.—Home Farm.—Impossible to name accurately from such dried-up specimens.—H. Stead.—1, Cytisus racemosus. 2, Yellow Bankswort Rose. 3, Ceanothus blue Variegated. 4, Fuchsia had all fallen off; send fresher specimens.—F. H.—Ribes auratum. A. M. G.—Cannot name; spoilt by being packed in dry cotton-wool.—Regular Reader.—We cannot name garden varieties of Petaragnum. Seed to a grower.—Miss Briggs.—Bird Cherry (Prunus ladanu).—Cariole.—Hibroanthus elegans.

TO CORRESPONDENTS.

Doubtful.—There is no plant at "Blenheim Palace," or anywhere else, so far as we know, that is fed on raw beef. There are, of course, what are called insectivorous plants.—Rev. E. Wright.—The Peach-leaves are "busted," the effect of a cold substance sent to the roots. Lift the tree in the autumn, and blot off all affected leaves now, and encourage the trees to make growth.—H. A. P.—Apply to Mr. T. S. Ware, Hale Farm Nursery, Tottenham, London.—M. F. K.—Gooseberry-caterpillar. Dress over with Hellebore-powder (a poison, remember). Directions for its use have often been given in GARDENING.—A Birmingham Newsagent.—Apply to Mr. T. A. Dickson, Florist, &c., Centre Avenue, Covent-garden-market, London, W.C.—Subscriber.—From the appearance of the leaf sent we should say that the plants in the greenhouse have been allowed to become infested with green-fly. Fumigate frequently with Tobacco, and syringe with clean water afterwards.—H. C. Sears.—Apply to Mr. A. G. Baker, The Lilies, 124, Brompton-road, Beckenham.

GARDEN AND PLANT PHOTOGRAPHS.

We beg to announce another photographic competition, when prizes to the amount of over Eighty Guineas will be awarded.

The subjects selected may be: Beautiful houses and country seats; garden landscapes; picturesque trees; plants, hardy and tender; Ferns; Roses; out flowers, prettily arranged; pretty cottage gardeos; our best fruits on the branch or branches, not in dishes; standard vegetables; good flower gardens, or any other objects of interest in a garden.

LIST OF PRIZES.

COUNTRY SEATS AND GARDENS.—A prize of TWENTY GUINEAS will be given for the best series of not less than six photographs of Tudor, Elizabethan, Jacobean, or other old English houses and their gardens, particularly showing the beauty of the house in relation to the garden. Picturesque old Farm and Manor houses will not be excluded from this competition.

GENERAL GARDEN AND PLANT PHOTOGRAPHS.—First prize for the best collection of general garden photographs, SEVEN GUINEAS. Second prize, FOUR GUINEAS. Third prize, THREE GUINEAS. This series may include subjects from any class, from either outdoor or indoor gardens.

FLOWERING PLANTS.—A prize of FIVE GUINEAS to the sender of the best collection of photographs of flowering plants grown in the open air or under glass. This series may include flowering shrubs of all sorts.

BEST GARDEN FRUITS.—A prize of FIVE GUINEAS for the best collection of photographs of any of our good garden fruits: Grapes, Peaches, Apples, Pears, Plums, Cherries, &c., or such fruits, to be shown on the branches, not in dishes. No prize will be awarded to photographs of fruits or vegetables crowded in dishes.

BEST VEGETABLES.—A prize of THREE GUINEAS for the best collection of photographs of best garden vegetables. The object of this is to get full representations of the best garden vegetables under the old genuine names. We do not want to exclude real novelties when they are such.

In any of the departments, if no collection of sufficient merit is sent in, no prize will be awarded. All competitors not winning a prize will for each photograph obtain receive the sum of half-a-guinea. In order to give all readers ample time to prepare good photographs the competition will be kept open until the last Saturday in June, 1893.

WHAT TO AVOID.—Cut flowers or plants should not be arranged in vases with patterns on them. Backgrounds should be plain, so as not to come into competition with the beautiful flowers. Figures of men or women, barrows, watering-pots, rakes, hoes, rollers, and other implements, iron railings, wires, or iron supports of any kind, also labels, especially those made of zinc (which should be removed when the photograph is being taken), and all like objects should be omitted from these photographs. The intention is to show the full beauty of the subject taken, and this cannot be done well when the photographer is confused by other considerations. Dwarf flowers are ineffective when taken directly from above. The camera should be brought low down for such. All photographs should be mounted singly, and not several on a card. They should not be mounted on cards with black backs, and the photographs should not be less in size than 5 inches by 4 inches. In many of the photographs sent in for our last competition the subjects were much overcrowded. The following are the rules to be observed by all competitors:—

FIRST.—The photographs may be of objects in the possession of either the sender or others; but the source whence they are obtained must be stated, and none sent the copyright of which is open to question. There is no limit as to number, and no fee to pay. The Editor is to have the right of engraving and publishing any of the chosen photographs. The photographs may be printed on any good paper that shows the subjects clearly; but those on albumenized paper are preferred for engraving.

SECOND.—The name and address of the sender, together with the name and description of the object shown, should be plainly written in ink on the back of each photograph. This is very important.

THIRD.—All communications relating to the competition must be addressed to the Editor of GARDENING ILLUSTRATED, 57, Southampton-street, Covent-garden, London, W.C., and marked "Photographic Competition." All competitors wishing their photographs returned, if successful, must enclose postage stamps of sufficient value for that purpose.

BIRDS.

3601.—Robins building.—The time of nesting varies a little, according to whether the spring comes early or late; but the regular season is from March to July, May and June being the months in which most nests may be found. They do not build in shrubs, but their favourite site is a hole on some wild bank sloping down from the side of a wood into a road or lane; they also build in holes or crevices in rocks, walls, outhouses, dust-hins, partly decayed branches or trunks of trees, in the ground at the foot of a tree or ivy-grown stump, in ivy on a wall, in a Been-stack, in pots of all kinds, whether banging on nails or lying on the ground; even in human skulls, or, in fact, any secure retreat of convenient size. The natural food of the Robin consists of worms, insects in all their stages, seeds, berries, and small fruits, such as Cherries and Currants. Boiled Potato, egg, and bread suit them.—A. G. BUTLER.

3600.—Feeding Canaries.—Give Canaries good clean Canary seed, fresh Groundsel, Chickweed, or a bit of Watercress two or three times a week, or daily if in the country. Very the diet with Millet seed, a pinch of Maw seed as a treat, or a few Hemp seeds. A little summer Rape seed makes a good change with the Millet and Canary, but I never mix Rape, Canary, and Millet together, as I find that birds prefer one seed to the others, and will savor all the food to get the one they like. When Canaries are nesting or have young ones they should be given herb-boiled egg, chopped very finely once a day in addition to their other food, and not so much green food. Canary seed bread, sold in penny packets and in sixpenny tins (Welham's), I find very good, and it saves the egg a little. In hot weather great care must be taken that no food turns sour in the cage, and that the egg is quite fresh, or all the young birds will be killed.—FLEUR DE LYS GULES.

—The staple seeds for Canaries should be the best Spanish Canary and German Rape. When moulting or breeding a little Hemp may be added as well as egg-food. Cattle-fish-bone must always be in the cage, and Watercress should be given from spring to autumn whenever procurable. Young Canaries should be fed on three parts of maize-wafers, pounded up with one third dry yolk of egg, damped and worked up with a pen-knife into a crumb-paste. Many made foods are advertised and largely sold for rearing Canaries upon; but some of these foods the birds show a decided distaste for, and none are so good or produce such strong birds as the mixture recommended above. This year I have already reared a nest of five (two of them twins produced from a single egg) upon this food.—A. O. BUTLER.

3492.—Treatment of a Thrush.—It is quite possible that the bird is a hen, in which case it cannot be expected to sing; the sexes are very much alike, and although some fanciers pretend to be able to distinguish them by their coloring and spotting, the differences described are not worth the paper they are printed on. The only reliable character which I have noticed is that (when trapped or netted) as the bird is taken in the hand a cock bird not only chatters, but utters a shrill trill or pea-whistle, whereas a hen either chatters alone or remains quite silent, snapping violently, however. You can try giving your bird a little kidney neat and ten drops of glycerine daily, for a week, in its drinking water, but I am afraid it is a hen.—A. G. BUTLER.

"Gardening Illustrated" Monthly Parts.—Price 3d.; post free, 6d.

"The Gardener" Monthly Parts.—This journal is published in neatly bound Monthly Parts. In this form the coloured plates are best preserved, and it is most suitable for reference previous to the issue of the half-yearly volumes. Price, 1s. 6d.; post free, 1s. 6d. Complete sets of volumes of THIS GARDEN from its commencement to end of 1892, forty-two vols., price, cloth, 30s. 12s.

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"Hardy Flowers"—Giving descriptions of up to 100 of the hardiest and of the most ornamental species suitable for their arrangement, culture, &c. Price and particulars, 1s.; post free, 1s. 6d. London: 37, Southampton-street, Strand, W.C.

Catalogue received.—Catalogue of Plants, including Novelties for 1893. Messrs. James Veitch, Royal Exotic Nursery, 64, King's-road, Chelsea, London, S.E.

Drawings for "Gardening"—Readers will kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruits and vegetables for drawing. The drawings so made will be engraved in the best manner, and will appear in due course in GARDENING ILLUSTRATED.

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LOVELY GEMS for cutting, and exhibition fanes, and selfs, brilliant, exquisite, and free. Strong plants. 12 best varieties, distinctly named, 3s. 6d.; Pure-white Pompona Guiding Star, simply invaluable, 1s. 4s.; magnificent Cactus Dahlias, in superb variety, to name, 12 lovely kinds, 4s. strong free. (CARNATIONS): Mrs. Muir, grand white, 6d.; Gwendolen, yellow, 9d.; Reynolda Hole, apricot, 6d.; Ruby, salmon, 4d.; Gloire de Nancy, immense white Gloire, 4d.; true old Crimson Gloire, 4d.; Salisbury, 6d.; Mrs. Laird, rose, 6d.; Mrs. Laird, superb blue, 9d.; Mrs. BEDDER; Lobelia Emperor William, true from cutting, strong, 3s. 6d.; 4s. 10d.; Calceolaria Golden Gem, 1s. 6d. doz.; Dark Heliotrope, 1s. 6d. doz.; Harrison's Musk, 1s. 6d. doz.; Cactus Sunflower, perianth, 1s. 6d. doz.; Chrysantha, Nama Desgrapes, 1s. 6d. doz., free.

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TEN-WEEK STOCKS, German Antars, Phlox Drummondii, Zinnia elegans (double), Lobelia Emperor William, Lobelia Swanley White (true), from cuttings, Ageratum, Antirrhinum, Forget-me-not (blue), and Perilla, at 2s. 6d. per 100, post free. Also

GERANIUMS, Fuchsias, Celceolarias, Verbena, Petunia (double), Dahlia (single), Nicotiana glauca, Heliotrope, Coleus, Ivy Geraniums, Centaurea candidissima (double white foliage). All strong plants at 1s. 6d. per doz. From—

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HARDY FERNS.—20 varieties, including Royal Fungus, recourva, montana, viride, Ceterach, 50s. 5d.; 100, 4s. free. Osmunda regalis, 2s. 9d. per doz. free. Very large beautiful rookery Fern, well assorted, 6s. per 100, put on rail.—T. FOX, 5 New-road, Nawlley, Penzance

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No. 741.—Vol. XV,

Founded by W. Robinson, Author of "The English Flower Garden."

MAY 20, 1893.

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CHRYSANTHEMUMS.

SEASONABLE NOTES ON CHRYSANTHEMUMS.

FINAL POTTING.—No time should now be lost in transferring the most forward plants into their flowering-pots. It is a mistake to allow them to remain for so long in small pots that they become thoroughly root-bound, which cannot fail to give the plants a decided check in their after-progress. Directly the pots are full of roots a shift into larger ones is necessary, so that the roots may continue in a healthy state, and not as they are in small pots, so cramped and entwined around each other that it is difficult to get them to make a fresh start into new soil. The pots should be clean. New ones ought to be thoroughly soaked before using; if not the moisture is absorbed too hurriedly from the soil, which is an item to be avoided, as it entails more water to be given to the plants than is well for them, and it wastes the new compost too much before the roots have had time to catch hold of it. For the bulk of the varieties grown for the production of large blooms 9 inch pots are large enough. If a stock of larger pots are in hand, and they are wished to be made use of, I would advise that two plants be put into one pot, choosing, if possible, the same variety. This is preferable to employing pots too large, not only on the score of their being unworky, and take up so much space, but the plants do not thrive so well in them; facilities are not afforded for supplying them so freely with stimulants as when they are in smaller pots. It is during continued showery weather that large pots are detrimental to the plants. Where specimens trained plants are cultivated the pots should be larger, as so much more foliage has to be supported as to require more rooting space. Pots 10 inches and 11 inches in diameter are not too large for specimens of this class. Plants grown for decoration to give a quantity of bloom in preference to individual quality also require pots 10 inches in width at the top for the largest specimens; the smaller will succeed in 9-inch ones. Pompones and single-flowered varieties do not require larger than those 8 inches in diameter, except for these of extra large size. Some attention should be paid to preparing the compost for the final potting. Although the soil is but one detail of culture, the most elaborate mixture or the best of soil might be completely nullified by errors in watering and after-management. The chief component part is good fibrous loam, partly decayed, say out long enough to allow the Grass to decay. It is a mistake to stack it twelve months before using; the fibre has in most instances decayed ere that, and in this way the best part of the loam has departed. It is not possible to define the exact quantity of material for the compost to suit all localities, because the turf varies in its character in various districts in many degrees and stages from light to heavy. (Edm.) soils are also deficient in calcareous matter, which is absolutely necessary in

some form or other for the production of high-class blooms. Pounded oyster-shells supply to an extent this want in the soil; even then a handful of quicklime thrown in amongst the turf is most beneficial. Lime is also useful for the destruction of worms in the soil, as well as supplying a necessary ingredient. Loam that has been taken from poor land needs assistance. A good plan to enrich such soil is to soak it well in strong liquid-manure for using it. A similar manure, such as that from the cow-shed, is useful where the turf is light. Horse-manure, prepared as though for a Mushroom-bed, is a valuable addition in the case of heavy, retentive loam. Wood-ashes provide potash; this is a valuable assistant in producing blooms of high-class quality, as it assists materially the solidifying of the wood, and without which the finest incurred blooms cannot be grown.

CHARCOAL is valuable, as it not only acts as a store-house for ammonia, but it renders the whole body of soil porous, preventing stagnation about the roots. It is necessary that they be kept in a sweetened state. Thomson's or Innes' Vine-manure is a valuable fertilizer for Chrysanthemum; used at the rate of 2 lb. of the former and 3 lb. of the latter to every bushel of the compost, it materially induces a vigorous growth, without being unduly gross. To three parts of decayed turf add one part of horse-manure, one part of partly decayed leaves, wood-ashes, and charcoal at the rate of one-sixth part, and one the artificial manures named. In the case of heavy loam, I prefer to remove the fine soil from it by the aid of a fine sieve, retaining none but the rougher parts. The fine soil only tends to choke the free passage-way for water. To the inexperienced growers potting Chrysanthemums may appear of no greater importance than potting any ordinary soft-wooded plant; but high-class blooms cannot be had from plants with soft, sappy stems, which are the results often of improperly performing this part of their treatment. When they are potted loosely they grow strongly, and produce large leaves, but are devoid of that solidity which is essential to success. The soil should be rammed into the pot very firmly with a blunt stick. In soil of a light character it is hardly possible to pot too firmly, but it is not so necessary with heavier soil, as the water will not percolate so freely, and should the drainage become defective trouble may ensue. When the plants are potted firmly the growth is not so rapid early in the season, but it is rendered solid and firm as growth proceeds, and is more likely to mature in a wet autumn.

THE POTS should be well drained, placing one large crook over the hole at the bottom and packing others around it as hollow as possible. Over the drainage place a layer of freshly-cut turf, or the roughest parts of the compost, to prevent the fine soil washing down among the drainage. The soil about the roots ought to be quite moist before transferring the plants to the new pots. Do not cover the top of the ball of soil about the plant too deeply. Give a little to cover any surface roots that may have become bare through watering, but leave a depth of about 1 1/2 inches to allow space for water, and top-dressing at a future opportunity. If the

soil is moist, as it should be, no water will be required for two or three days. After this time a good soaking may be given. The leaves of the plants should be syringed two or three times daily after potting to freshen the plants, consequent upon their not receiving water at the roots in the same way as previous to potting.

E. M.

3746.—Bones-meal for Chrysanthemums.—This is a valuable manure when mixed with the soil for potting the plants in and is also beneficial for top-dressing them later on in the year. There are two kinds—one that is simply ground to a powder, the other dissolved by the aid of sulphuric acid. For soil of a heavy character this last is the best, while the former is the more suitable for light soil. Mixed with the compost at the rate of 3 lb. to every bushel when transferring the plants to 5-inch pots, bones-meal is a valuable manure. It is a good plan to add the bones-meal to the loam fully a month before potting the plants; sufficient time is then given for the manure to thoroughly permeate the whole mass of soil; in this way its properties are more readily assimilated by the plants than when the meal is added at the time of using the soil.—E. M.

3751.—Chrysanthemums for India.—"Lower Bengal" will find the following varieties free flowering and of easy cultivation:—Japanese: Avalanche (white), Sunflower (rich yellow), Bonquet Fait (beautiful soft-rose), Edwin Molyneux (rich crimson seal gold), Lady Selborne (white), Maidee's Blush (bimsh-white), Mme. de Sevin (rosy-amaranth) Sonree d'Or (orange and gold), Val d'Andorre (red, shaded orange), roseum superbum (lilac-rose, tipped buff), Mrs. J. Wright (white), Peter the Great (lemon-yellow), Icourved: Mrs. G. Ruddle (white), George Glendy (lemon), Mrs. Dixon (orange-yellow), Lord Derby (dark-purple), Lord Woelsley (chestnut-bronze), Jardin des Plantes (bright golden-yellow), John Salter (cinnamon-red, orange centre), Empress of India (white), Lord Alcester (primrose-yellow), Prince of Wales (dark purple-violet), Barbara (bright golden-yellow), Jeane d'Arc (white, tipped lilac), Reflexed: Culliegfordi (scarlet-crimson), Mrs. Forsythe (lemon-white), Dr. Sharpe (Amaranth), Elsie (canary-yellow), Christine (pink), Chevalier Domage (bright gold), Pompones: Mme. Elise Dorden (soft-rose), Fanny (maroon-red), White Trevenna (white), Nelly Rainford (buff), Lizzie Holmes (broeze), President (deep rosy-carmine).—E. M.

3750.—Weed killer.—You are not likely to get any ingredients for manufacturing a weed-killer at home any cheaper than you can obtain the same article ready for use from those who advertise them in these pages; as a matter of fact, I doubt very much if you can do so cheap. You may, however, try sulphuric acid, and add thirty parts of water to it. If you have a large space that is weedy, why not use salt? If salt is laid on the weeds in dry weather it is as effectual as any of the weed-killers.—J. C. C. (Edm.) Get a good weed-killer such as advertised in Gardening Illustrated. Give repeated applications. There are many remedies advertised in the country, but none are so good as the one mentioned above.—C. T.

GARDEN WORK.

Conservatory.

The sun during the day is very hot; but the wind too often blows from the east, and in ventilating give most of the air on the southern sides of the house. Cold draughts mean mildew and insects on Roses and other plants. Pick dead blossoms and seed-pods from Azaleas, Heaths, and other plants as they go out of flower, and take the plants to another house, where there is a genial temperature, to encourage the new growth, and fill up with other plants coming into blossom. Hydrangeas will be a feature as well as numbers are grown. If water impregnated with iron is used, a blue tint will be given to the trusses of bloom; this often happens when the plants are potted in peat. Cuttings of the young shoots getting a bit firm will root at any time from this till August; a little bottom heat will hasten the rooting. I have generally rooted them in the bed that has been used for propagating bedding plants; they must be kept close and shaded till roots are formed. Hydrangea paniculata grandiflora, when well grown, comes in useful for the conservatory later on. Tuberosa Bogalans are now coming into bloom; when moved to the conservatory place in warm end of house at first, and keep rather close for a day or two. Keep Lilium Warreni free from green-fly by sponging, dipping or fumigating, whichever is the most convenient. Seedlings of Primula obconica, which were sown early, will now be ready for potting off. The young plants will do best in a cold frame for the summer, shifting them on into a cold pit or frame as soon as circumstances will permit. Very often the seeds of this Primula do not germinate freely. There is yet time to sow again in a warm house; and the old plants may be divided and started again in small pots, with free drainage and good soil. This is a very useful plant to a plenty of its had reputation in the soft soil to be produced by contact with it. Fuchsias now coming into bloom should be neatly staked, the cone or pyramid in the best shape, and usually on a neat stake in the centre of the plant is sufficient support. Where Fuchsias are grown for exhibition, the blossoms should be picked off to within six weeks of the day of show. Dautsias and other forced shrubs will now be sufficiently ripened for placing outside. The best treatment is to plunge the pots in a bed of coal-ashes; this will keep the roots cool, and the plants will not require so much water. Give liquid-manure to pump up the buds till the pots are full of roots. As soon as Spruce flowering, place them outside in a shady position for a time, and if a heavy rain comes plant out and keep moist. Very large plants may be cut into three or four and planted out in a moist spot. In a couple of years they may be potted up again. Put a few neat stakes to Double Petunias now throwing up the flower-stems.

Stove.

The earliest struck Polanthes, Euphorbias, and other soft-wooded, winter-flowering stuff will be ready to pot on. Keep them as near the glass as possible; they will be better in a low, rather warm, pit for the summer, keeping rather close at first, increasing the ventilation as growth proceeds to make the foliage robust, and hardy. Plants grown without ventilation must have stiff, firm leaves, and then fade before their right time; and plants with bare stems are not so valuable. The growth of clematis soon gets into a lunge if left without attention for a short time at this season, when all things under glass are as full of life and energy. Be very careful about the water used for syringing; unless it is perfectly pure do not syringe the foliage, but keep up the requisite moisture in the atmosphere by damping down, and by wetting the water in indispensable now during the hottest part of the day, or say from 10.30 to 5.30. This will still be necessary as the nights are very odd, but 65 degs. at night need not be exceeded from fire-heat.

Ferns.

Under glass Ferns must be shaded, or the fronds will lose that beautiful dark tint of green which is so much appreciated. Young specimens must not suffer for want of pot-room. It does not take long to form a specimen if one makes a start with robust, healthy plants. Some worst plants to grow to the top obtained by sifting up seeds of old specimens; in fact, these old specimens, when they get too large and unwieldy for any useful purpose, should be thrown away, and propagate either from spores or by dividing young, healthy plants only. In working up stock of any scarce kind of Fern, it is better to divide rather frequently, whilst the plants retain their full vigour. This is especially true of Adiantum Farleyense and others which do not produce spores. Spores of Adiantum, Pteris, and other hardy Ferns may be sown any time in pans or boxes. So fill not a matter of the very first importance, as Fern-spores seem to grow freely anywhere in a house devoted to them. They seem to grow freely in sifted ashes under the stage; and a patch of ooke-dust, placed there as an experiment, has a very healthy growth of young Ferns upon it. In another place a bit of heavy loam—ono might call it clay—was very productive of young plants; but there was always more difficulty in getting them established from the clay soil than from lighter substances. Ferns must have abundance of moisture in the atmosphere now, which may be supplied by damping stages, floors, &c. This is a good season for replanting Fern-baskets. I always use strong plants, especially the plant in the centre of the basket; but smaller plants can be used to fill in round the sides and bottom of the basket. But it forms a pleasant change to fill in the sides of the basket with the creeping growth of such plants as Penzance variegatum, Sedum carneum variegatum, Tradescantia vitifolia, &c.

Potting Chrysanthemums

This work must be pushed on now, so that the plants do not suffer for want of pot-room. The best number of Chrysanthemums grown in many gardens forms a heavy lay upon the resources of the gardener. At no time should the plants be allowed to get dust-dry, or the leaves will turn yellow prematurely and fall off.

* In cold or northern districts the operations referred to under "Garden Work" may be done from the first of a fortnight later than here indicated, with equally good results.

Window Gardening.

Everybody is busy now filling window-boxes. I like to see the growth fall over and hide the boxes. To do this at first large, freely-growing plants will be necessary. I like where possible to fill the boxes, and let them stand in a cool-house for a time till the plants are well established. Very pretty are the boxes in which strong plants of Clematis Jackman are established in the ends, to be trained up the edges of the window as soon as the boxes are placed in position. I have had large boxes in which Clematis floribunda has been planted and trained along the front, the flowering-shrub being permitted to hang down loosely. Canary Peppers and other forms of Nasturtium will make a pretty display, either for training round the window or to hang over; but in windy situations these overhanging shoots are rather difficult to keep in condition. Use the sponge freely upon plants in boxes, especially Palms, Aspidistras, Azaleas, &c. Anything that requires a larger pot may have it now. Sow Primulas, Chierarias, and Calceolarias under squares of glass in a shady window.

Outdoor Garden.

Roses will require a good deal of attention now. Magrota in the curled up leaves must be hand-picked. Greenfly must be promptly met with liquid insecticide; soft soap, 2 oz. to the gallon, with 1 oz. of Tobacco-powder mixed with the soap and water. I find Tobacco-powder used in this way is just as efficient as when used dry, and it is very cheap. Unless any objection is raised to the presence of manure on the borders, it may be certainly be mulched. A covering of manure keeps the roots so comfortable. Anoniss are coming up very irregularly in consequence of the drought. I think it is useless to water unless the ground can be shaded. Watering may assist the seeds to start, but if the watering is neglected even for a day, the seeds just bursting into life will perish. A little water is a dangerous thing in a dry time; either water thoroughly or not at all. Bedding out has commenced in many gardens. Well bordered plants will bear a degree or two of frost without injury, but I would counsel those who are not over-looked to be in a hurry. We may yet get a cold wave from Russia that will injure tender things. It is perfectly true the exceptional character of the season may run some time longer yet, and that the usual May frosts may this year be absent. Still, nothing will be lost by using a little caution in putting out tender plants. How beautiful the Tuted Panais are just now! Why doesn't everybody plant them more freely? There is nothing brighter or cheaper. For continuous blooming bury a layer of manure 8 inches deep in the ground. The roots will find it when the time of trial comes.

Fruit Garden.

Melons planted now will be ready end of July if well cared for. They must have bottom-heat to bring up the flavour. Plant in heavy loam, pressed firmly down to secure good growth that will bear sunshine, and be red-spider proof. Early morning ventilation will tend to keep off canker and other diseases. Early afternoon closing will push on growth with the aid of the bottled up sunshine. Strawberries, unless rain comes, must have water. Not a mere sprinkle with the hose, but by watering that will soak the soil around the roots. Liquid-manure from a farmyard tank, if available, is exceedingly valuable, and will save much expense in the purchase of artificials. Insects must be attacked with determination, and the best and cheapest means which is the outcome of experience brought to bear. For the Codlin-moth try the Par green. For the Gooseberry-apterpillar use Hellebore powder. In all those things judgment is necessary, and this, of course, includes promptitude in application. The propagator never kills his fern. Vines are making lateral growth freely. Never let sublaterals extend, but rub them out when small, especially below the bunches. Above the bunches leave one leaf. If there is any fear of mildew on Vines dress the pipes with liquid sulphur, and use a little more lime for a night or two. Vines cannot be dispensed with yet, but it is necessary to keep the fire-heat down during the day. The safest plan is to let the fire go out in the morning. Our usual plan is to make them up rather high at 11, and let the fire go out in the morning, the furnace to be cleaned out in the morning and the fire lighted not later than three in the afternoon.

Vegetable Garden.

Happy are the people who live in a district where the clouds drop latences in the shape of the frequent showers. Here, in the eastern districts, we have not had rain for many weeks. Not a single April shower has told the dust of March, and the vegetable grower who has not taken the precaution to dig deeply and manure liberally is in a bad fix. There are arrears of seed sowing to be fetched up in many gardens, but waiting for rain seems like waiting for the Millennium. However, crops which must be got on must have special preparations made. First, of all the land must be thoroughly moistened; not a mere sprinkle on the top, but enough water must be given to moisten the moisture working up from below. Then, when the water has settled down, prepare the seed-bed, sow the seeds, and shade with something. I have used the net which have just been taken from sheltering the wall-trees, propping them up with forked sticks; branches of trees, or Ribwort-leaves laid on the surface will help the land to retain the moisture, and keep out the heat of the sun. Under such condition the seeds will germinate strongly, and afterwards, if rain does not come, the plants must be kept going by mulching, watering, and frequent surface stirring. Plant out Celery as required. This is an easy crop to shade and water. Mulch Peas, Beans, Cauliflowers, and lay little ridges of short manure between the Onions and Carrots. We are putting out Tomatoes against warm walls. The plants have been hardened in the open air, and the pots are so full of roots it was necessary either to report or plant out. Plants against a wall can be sheltered if necessary. Plant out Vegetable Marrows under hand-lights. A lichen-leaf can be laid over the tops of the light if we get cold nights, and in this exceptional season all things are possible. Wonderful has been the progress made by Cucumbers and Tomatoes under glass, but the work of stopping and tying has been almost incessant, and the watering has been heavy. Tomatoes growing in a dry soil will not set the fruit freely, especially with a hot sun. Be careful on them.

THE COMING WEEK'S WORK.

Extracts from a garden diary from May 20th to May 27th.

Commenced planting beds and borders out with the usual kinds of bedding plants. I do not depend altogether upon flowers, as a variety of foliage plants are used, including Castor-oils, especially the bronze-leaved variety Gibson. Canas also are largely grown, but these large-leaved plants must have shelter. In windy districts the leaves always look ragged and torn with the force of the wind. Blue Gums and Acaia Iophantha, and the Striped Malze are also used, but the foliage plants will wait till the beginning of June. At present we are working out the hardest things, such as Calceolarias, Lobelia fulgens, Blue Lobellia, Sloaks, Astors, and Phlox Drummondii, and the well hardened "Geraniums" of the so-called section are all ready to be out now. Everything is flooded with water as soon as planted, and the surface assessed at the morning after planting, before the sun has had time to dissipate the moisture. Planted out Tomatoes near every bit of bare wall surface, not only on the south aspects, but east and west also. Everything with Tomatoes depends upon the season. If we get a reasonable amount of sunshine, the fruits will be ripened on the east and west walls, and so I have surplus plants, and there are here and there bare spaces between the wall trees which will be better covered. Put stakes to Delphiniums, Carnations, and other hardy plants that will need support by-and-by. If not now, and it is as well to have the stakes when the time comes for giving a tie, as this sometimes comes in a hurry. Tinned annuals, and as the ground is very dry, a good watering was given immediately after to settle the soil. A great deal of harm is sometimes done to the plants left by thinning if the holes are not closed in the same way. In the case of anything very choice, I generally scatter a handful of fine soil over the spot before the water is gone, and this leaves all firm again. Cut off Aralia Sieboldi and Grille robusta. These are both useful plants for furnishing. They are easily raised from seeds, and if helped on in a warm house, they soon become useful. Planted out the greater part of the Arum Lilies. A few of the strongest will be grown in pots for early blooming. Planted out Vegetable Marrows and Ridge Cucumbers under hand-lights. Remove laterals from Vines in all the houses. A look round is given every week, as no good comes of leaving laterals too long. Planted out more early Celery, and set out Lettuce-plants on the ridges between the rows. I have had splendid Lettuces on these ridges, the depth of soil evidently aiding them. Gave liquid-manure to Globe Artichokes; they want a good deal of feeding to produce large, succulent heads. Looked over Roses to pick off caterpillars. Afterwards gave a good wash with the syringe with a mixture of soap and water; liquid-manure had been given latterly two or three times a week. Thinned off some of the Peaches from trees on slope; I want fine fruits. Planted more French Beans and covered more Peas for succession. Planted New Zealand Spinach on a warm south border; this is one of the plants which revels in hot sunshine, either with or without water. Like all other things, it grows faster with plenty of moisture, but it will not perish when dry. Shifted Zonal Pelargoniums, and moved to cold pit; will be placed outside shortly.

3680.—Tap water.—I have never heard of water from the mains containing "a quantity of soda." As a rule, it is a good deal too hard, while soda would tend to soften it. If this is really the case a moderate quantity will be found beneficial rather than otherwise. Such water (from the works) is decidedly inferior to rain-water for all garden purposes, but the majority of growers near London and other large towns are obliged to use it to a great extent, and yet they obtain good results. If possible let it stand out in the sun in an open tank for a day or two before being used.—B. C. R.

—Although such water is not the best for any plants, it is not so injurious as you seem to suppose. Still, rain-water or that from a pond or open tank is the best. I think hard water does more injury to tender Ferns than any other plants. I have used such water as you speak of largely in my time, but have never seen any ill-effects. I would rather use water that contained soda than that which did not. Draw the water early in the day and expose it to the air for some hours before using it.—J. C. C.

3754.—Using a fertilizer.—You do not say what the fertilizer is, but most of the fertilizers may be used as a liquid-manure at the rate of half an ounce to an ounce to the gallon of water. They may also be mixed with the soil in potting at the rate of one to two pounds to the bushel of soil, or they may be scattered in small quantities—say a teaspoonful to a plant in a 6-inch pot—and watered in immediately.—E. H.

3757.—Fertilizer in a garden.—There are numbers of fertilizers, all more or less useful. I have always obtained the best results from a mixture of several than one alone. For instance, after subjecting plants to a course of one manure it has been found to be advantageous to change to a second. Soot is always handy and cheap. Nitrate of soda, sulphate of ammonia, Ichthomeo guano, &c., also all come in useful for a change.—E. H.

FERNS.

HARDY FERNERIES.

WHILE flowers are indispensable for the ornamentation of a villa residence, a collection of hardy Ferns forms an equally important addition, and when properly and tastefully arranged they may be made to assume as natural an appearance as they do in a wild state; the rustic appearance, too, of a hardy fernery forms an agreeable contrast to the more dressy portions of the grounds. It is difficult to lay down definite rules for the construction of a fernery, as much depending upon the position which it is to occupy and the space at command. In fixing on the site, the first thing to be aimed at should be a shaded, secluded nook—not one that can be seen from the windows of the mansion or cottage, nor yet from the flower garden, but a part that is unexpectedly come upon when walking through the grounds. The situation should also be one that is sheltered from boisterous winds. Moisture, too, is essential to the well-being of hardy Ferns, but this cannot always be given in sufficient quantity to carry them safely through hot summers. Anything like straight lines must be avoided. If the space to be occupied be long rather than broad, it should be broken up here and there so as to form miniature dells, recesses, and projections, but all should have as rustic an appearance as possible. The plants in all cases should be allowed sufficient space in which to develop themselves. Where outdoor Ferns have failed to do well, the ferneries have generally been cramped for room. What is wanted is breadth and length, height being of secondary importance. If the fernery be so arranged that it could be traversed by a narrow path from which the plants could be examined, all the better. The stones employed should be placed in as natural a manner as possible, and yet they should possess a certain amount of artistic arrangement. Anyone who has searched for Ferns in their native haunts cannot have failed to observe that they luxuriate in a light, sandy soil, and this must form, if possible, the main bulk of the fernery. I have, however, many times used Cocoa-unt-fibre mixed with turfy loam, and it has always appeared to answer admirably. For very delicate sorts a compost may be formed of peat, leaf-mould, and loam, with a sprinkling of silver sand to keep all open and porous, but the stronger sorts, as has been stated, will succeed best in loam without the addition of peat. When I use Cocoa-unt-fibre I find that it retains the moisture without becoming sodden. Fern roots, being generally of a wiry nature, will grow in almost any soil that is of ordinary texture, but it ought not to be heavy. Ferns dislike manure both in a solid and liquid form. In arranging the plants I would not separate the evergreen from the deciduous kinds, but so dispose of them that when the foliage of the latter dies down in the beginning of winter, there would still remain plants enough to interest the cultivator. I would, therefore, plant plenty of sorts that would retain their verdure throughout the winter, such, for instance, as the *Blechnums*, *Scolopendriums*, *Polystichums*, and *Polypodiums*. In planting, an error of too common occurrence must be avoided—viz., that of planting too deeply. Generally speaking, the crowns must be kept well above the soil, but they should be made firm, and the stronger-growing sorts should be planted first. Dwarf-growing varieties with fine fronds should have the most sheltered nooks assigned to them. If water exists in the fernery a place must be afforded for the Royal Fern (*Osmunda regalis*). A list of hardy Ferns would be out of place, inasmuch as cultivators have their own particular favour-

ites. I may, however, just add that a small fernery (as in the illustration) may be constructed in any shady corner where flowering plants will not succeed, and if arranged according to good taste and judgment, it will always be a source of enjoyment to the cultivator. T.

3731.—**Hyacinths, &c.**—If the bulbs are not in the way of anything else to be planted in the border, leave them where they are. I have some in the front of an herbaceous border that have flowered where they are continuously for the last nine years, and still show no signs of deterioration. If the bulbs are in risk of being injured by planting above them, take up the bulbs when the foliage turns yellow, drying them off in an airy shed, afterwards storing them in paper bags in a cool, dry room until the first week in November—planting-time.—S. P.

— It is not absolutely necessary to take up the bulbs, and they may be left undisturbed for several seasons without being removed if they show no signs of deterioration, but the best growers lift them every year when the leaves have quite died down, and stored away in a dry,



Ferns on an old wall.

cool place for the summer, if they have been previously well dried by the sun. You may also remove offsets, which should be kept in dry soil in boxes until the autumn. The great thing is to plant Hyacinths early in October, so that the bulbs are in the ground before frosts occur. Bulbs that have been forced need not be thrown away, as some do, but planted out in the autumn in the garden, where they give acceptable flowers in the following spring. The same remarks apply to the Tulips. I always lift mine at least once in every two years, and find that the results are in every way more satisfactory. I had a fine lot of the beautiful *carmine T. macrospella*; the bulbs were not lifted for about three years and they did badly, but when lifted and put in a fresh soil and position they again returned to their former vigour, showing that lifting every two years—better if every year—is suitable treatment. Plant again before November, although Tulips suffer less from being out of the ground than some things, but the quicker they are in the ground after October the better. All bulbs should be planted then.—C. T.

— To the bulbs up when ripe, dry them, and keep in a cool, dry place till October.—E. H.

3723.—**Standard Azalea**—it is impossible to answer the question usefully without more information than the query affords. The deciduous Azaleas are hardly enough, and if planted in the right kind of soil there is no difficulty in preserving them through the winter. But I expect this question refers to the Evergreen or Indian Azaleas, and, if so, more information should be given of locality, &c., where grown. Indian Azaleas have been planted out in sheltered spots in many gardens, but I think they were more common forty years ago than they are now. The truth is, except in the warmest situation they do not thrive in the open air. I have generally found wherever the *Camellia* is a success outside there the Azalea may be planted.—E. H.

— If you mean the delicate greenhouse Azaleas, they would fare badly exposed to the trials of an English winter. There are so many classes of Azaleas that it is somewhat difficult to give a satisfactory answer. The hardy Azaleas are the Ghent Azaleas, varieties of *Azalea mollis*, and others of minor importance. A. India, the greenhouse Azalea, will also live out in favourable spots, but it cannot be accounted hardy, nor would it be advisable to trust it in the open. But in some sheltered gardens in the south of England the white variety and others live out. They could be preserved by covering them with mats, &c.; but the better way would be to keep them in the conservatory or greenhouse, as the case may be. During the summer months they can be stood out, and, in fact, are better in the open. Stand them in a sheltered position, moderately shady, and on a hard bottom of coal-ashes, to prevent, as far as possible, worms from getting in the pots and choking up the drainage. Water well when necessary, and do not be led away by the moist aspect of the surface, which may simply arise through a few showers. Take in the plants again the autumn.—C. T.

3659.—**A cleanly plant stimulant**—A solution of either nitrate of soda or sulphate of ammonia, one ounce to the gallon, would be found very beneficial to most hardy herbaceous plants, and being perfectly clean, inodorous, and readily dissolved in water one or other would, I should say, answer the purpose as well as anything that could be named. The chief difference between the two is that while the nitrate chiefly promotes growth, the effect of the sulphate is more to stimulate and increase the induracence. Water the plants with a solution, of the strength indicated, of any of the foregoing once every two or three weeks, taking care that it does not touch the foliage. In wet weather the salts may be sprinkled thinly on the soil round the plants, when it will be washed down to the roots by the rain.—B. C. R.

— For pot plants you cannot do better than choose one of the special preparations advertised in GARDENING, always taking care to follow directions given with the material. An overdose is likely to be ruinous. Special manures require to be given with great care. But you enquire as regards herbaceous plants. The majority of these do not need any artificial manure, only a good, well-prepared soil, manured in the first instance, if such was necessary. Leave off muddling about with artificial preparations in regard to the hardy plants of the garden. In respect, however, to the Begonias, there is no harm in giving the plants a supply of weak liquid-manure, just as the buds are seen, as it helps the plants considerably. Do not give it too strong.—C. T.

— Nitrate of soda, I should say, would suit you very well, as when used with care it is a capital stimulant, and not disagreeable to use—at least, not more so than any of the other concentrated manures. As a liquid stimulant use half-an-ounce to one gallon of water, and for sprinkling on the ground a small tablespoonful in a circle 18 inches over. The greatest objection that I have to any of the artificial manures is that in the hands of inexperienced people they are likely to be used to excess, and then disappointment is sure to follow. They are so pleased with the effect of the first dose or two that they cannot resist applying more, and then they either kill their plants or they get plenty of leaves and no flowers.—J. C. C.

— There is nothing disagreeable about Iochtime sulphate. Nitrate of soda, again, is a very cleanly stimulant, as is also sulphate of ammonia. I have always found an advantage in changing the stimulants occasionally, or mixing two or three together.—E. H.

UNIVERSITY OF URBANA, CHampaign

INDOOR PLANTS.

SARRACENIAS.

I AM asked to say a few words about these plants by a reader signing himself "Richard?" This gentleman says he has bought a dozen, and thinks he has given too much for them, but with this I have nothing to do. You should have thought about the price before you paid for them, not afterwards. Well, these plants, if strong, should make nice handsome specimens this season. They are known as Side-saddle flowers, and are included amongst the insect-eating plants. Naturally, these plants grow in boggy, swampy land, and many people assert that they cannot be grown well out of a stove, but such is not the case, and last season only I saw plants growing in perfect vigour in a house in which no means of heating it had been provided, but all the sun that shone was permitted to fall upon them. To ensure success with Sarracenias, I have always found it best to use rather small pots, and to drain these thoroughly well, and I like to use a mixture of peat, Sphagnum, and well-rotted manure. If the plants can be placed upon the ground, they may be stood quite close together, and fully exposed to the sunshine, when an ample supply of moisture will rise up from the ground, if this is duly watered with a rosed watering-can night and morning, the drainage of the pots ensuring the carrying off the extra supply which the plants get, and which they appear to like, and the distance from the glass does not affect them injuriously. If this plan is not practicable—but they must be grown upon the stage—they should be plunged in Sphagnum Moss and similarly watered. I do not like the system of standing them in pans of water, although I must confess to have seen some very good examples grown in this way, but I do not think it is a system which will bear a continuance for several years, for these plants do not like anything sour or stale about their roots. In the autumn, when the pitchers begin to fade, less water must be given, but do not entirely withhold it at any time, and the plants may be stood close together for their winter's rest; and the best place for them is to select the corner of a frame or pit, from which all chance of frost getting at them is safe. Here they may remain until about the beginning of March, when they should be repotted and trimmed up for summer show. The young growth should be carefully supported or it is very apt to become injured, for when young it is very tender, and if the house is kept properly supplied with moisture, red-spider and thrips, their two greatest enemies, will be kept away. By attending to the above instructions, I think that "Richard" may be successful with his Side-saddle plants. J. J.

3660.—**Treatment of an Oleander.**—You should not touch the leaders of the Oleander, but let it grow on until it blooms, which will be early next spring, if not before. When in bloom three shoots will appear. The plant will then be about 3 feet high. Keep the leaves well washed. The soil I used was from an old Cucumber house, with a little fresh loam, which seems to suit mine well.—SOLDIER.

3789.—**Acacia armata and Cyrtus in pots.**—Neither of these are difficult to grow. The plants will now have finished flowering, and, if any pruning is required, do what is necessary to put the plants into shape. In about three weeks repeat, if necessary, using good, sound, yellow loam and a little leaf-mould and sand, with free drainage. Keep them in the greenhouse till the growth is finished, or say till July, and then place outside in a coal-ash bed till October.—E. H.

3742.—**Bulbs from South Africa.**—No, the Satyrus should not be plunged in a hot-bed, but stood on an inverted pot in a cool frame. During the winter it requires a temperature of 45 degs. A cool corner of the greenhouse will suit it if it is not placed over hot-water pipes.—J. C. O.

3767.—**Carnations (Malmison, &c.).**—You could get the varieties named at any good nursery, particularly the kind named Mrs. A. Waroche, which I have seen several times lately in the largest nurseries around London.—C. T.

3741.—**Clethra arborea.**—You should keep the Clethra in the greenhouse and leave alone, if it is in good health and does not want repotting. It will succeed well in a greenhouse

and grow in time into quite a tree. If it requires repotting the best soil is one composed of peat or loam, mixed with a fair proportion of sharp silver sand. Give a fair amount of drainage, but if the plant does not need repotting leave it alone. The flowers are white, fragrant, and very pleasing. It was introduced in 1784 from Madeira.—C. T.

STAPELIAS AND THEIR CULTURE.

In reply to "J. H.," "M. Stanley," and others, Stapelias being natives of the Cape of Good Hope, they are greenhouse subjects. Though easily grown, many fail with them, saying they



Flowers of a Stapelia.

grew well for a time, and then decay. This I attribute to the climate they come from not being understood, and the common practice of taking it for granted that as they get a dry season it must be during our winter; so they are allowed to shrivel, the result of which is that when they should grow in spring the bottom often decays, and the plants get over it just in time to be served in the same way again. Now, every observer of Cape plants knows well that they have a tendency to grow freely during our winter, and though this growth may be retarded it must not be arrested; therefore, Ixias, Pelargoniums, and Heaths are exposed to all the light we can get, while the Stapelias are put on some out-of-the-way shelf. At the time we are getting our driest and coldest days the Stapelias at the Cape are getting their brightest and hottest; therefore, we ought to give them all the light possible, and as much heat as is compatible with it. Like other Cape plants, they don't like fire-heat, therefore they should be kept as far from the pipes as convenient; they stand the winter and flower better if exposed to the open air from June until September. It is best to strike fresh stock every season, taking the branches off at a joint to prevent danger of decay and escape of sap. April and May are the best seasons; put them in close to the edge of the pot, and keep them dry for a week, when water may be given, after which give it when quite dry. If they are well exposed to the sun they will strike in three weeks. Seed should be sown as soon as collected, or its vitality will soon be gone. Sow in shallow pans in light soil, and put them on gentle bottom-heat. As soon as well up put them on a shelf close to the glass, not potting off until well grown, as they often stand still for some time or die. Almost everyone who has written on these plants recommends sandy soil for them, but I find they grow best in a solid soil. Three parts loam and one broken brick is the best, excluding sand or manure. In this soil, with small pots, they grow freely, and though we have one species called *S. europaea*, or *italica*, yet I have seen it luxuriating above its natural growth in a temperature of 100 degs. Fahr. Seeds for transmission should be put into sealed bottles or oiled paper. The plants are very difficult to import. The best plan is by means of a small wooden box, using dry sand for packing material. C.

3745.—**Greenhouse plants from seed.**—Primulae and Cinerarias, including *Primula obconica*, may be sown now for autumn and winter blooming. In addition, try a few young bulbs of Cyclamen, and young plants of Zonal Pelargoniums may be grown on; and, of course, you must have *Chrysanthemum*. To have flowers in winter the night temperature should not be much under 50 degs.—E. H.

3762.—**Tuberous Begonias.**—I presume that "Constant Reader" intends all the plants for bedding out? If the leaves of those plants now in boxes do not intermingle they will not require other or separate plants, they will not require

disturbing until they are finally transferred to the beds. A cold frame would be the most suitable place for the plants now. The growth would be made more under conditions similar to that of outside, where the leaf-stalks are short, and less liable to damage from wind. When the plants are grown in heat, no matter how little, the leaves are rendered soft. The least exposure to sun destroys them.—S. P.

—As the season is now late I should either use them for bedding or pot them on, when they will make good plants for the greenhouse. In a few days now at the latest it is time to put out Tuberous Begonias, and keep them well watered for a time afterwards, if the weather is dry. They dislike very dry soils. If for the greenhouse pot them on and shade from the brilliant sun, as this has an injurious effect upon the leafage. Syringe freely, and give the plants plenty of air when the wind is not too keen. With ordinary attention they should succeed well and make a display.—C. T.

CHOICE BEGONIAS.

B. SCHARFFIANA.

This is a bold growing species, reaching a height of a yard or thereabouts, with stout erect stems and large bronzy-green leaves, veined with red. The most prominent feature, however, is the blossoms, borne in large densely packed clusters, and which from their weight assume a drooping character. The individual blossoms are of a pale-pink colour, while the sepals are at their base thickly clothed with reddish hairs, which become much less numerous towards the upper part. It is undoubtedly one of the very best Begonias, beautiful as many of them are, a great merit being that it will flower well on into the winter. Like the rest of its class, it is of easy culture, for cuttings strike readily enough, and as seed was plentifully offered last winter great numbers of young plants have been raised in this way. (See illustration on page 157.) P.

3764.—**Seedling Begonia tubers.**—All Tuberous Begonias intended for bedding should be started in a cool house; the growth is then stocky and not liable to receive injury from hot sun or cold winds when planted out. It is a mistake to subject the tubers to much heat; the growth is forced, resulting in soft, sappy stems and leaves, which are scorched by the first blink of sunshine which they encounter. If the tubers were alive when received, I should say it is owing to an excess of moisture that they have rotted. Nothing more than making the soil moist is needed in starting the tubers into growth.—S. P.

3773.—**Garden frames.**—Independent bellies of the Loughborough pattern are simply set in the wall by making a hole large enough to receive it, the face of the bellier being flush with the outside of the wall. The bellier may be put in at either end, whichever is most convenient for attending it; but in a general way they are fixed at the coldest end, which in your case would be facing east. With regard to the arrangement of the pipes, they should be between the bed of soil and the glass. You need not fear that the plants would suffer unless they actually touched the pipes. If you place the pipes under the bed of soil you would not get heat enough to keep out a severe frost. Seeing how much important matter there is wanting for space, I think it will be better for you to make up your mind first about making the frame. If you decide on doing so and will write again I will gladly help you. I may, however, say that although a flue would be the cheapest to begin with, a flue consumes more fuel than a boiler.—J. C. C.

3748.—**Calceolaria californica.**—I imagine you refer to the annual Calceolaria, which seeds and comes up freely in some gardens. The plant to which I refer has erect, stiff brown stems, which slightly branch, and the flowers are pale yellow in colour. It is, however, a poor thing compared to those commonly used for bedding. The present tender appearance of your plants evidently deceives you, as it is a hardy annual, and when required for bedding it should be raised in a cold frame in the spring. In many gardens it is quite a

ROSES.

3775.—**Tea Rosee in a frame.**—I think the plants are much too thick; a dozen in the size frame you mention should be enough. The weather has certainly been very trying for Roses in a frame, and it would have been much better if you had applied a little shading earlier in the season. I have no doubt the syringing solution was used a trifle too strong. Niphotos is a very sensitive variety, and often casts its flower-buds after a slight overdose of liquid-manure or an insecticide. Other kinds may be able to huddle through, but this grandest of white Roses is exceptionally tender. There are no Teas which resist mildew, but there are a few very much more subject to this disease than others. I name a few good Teas for your purpose; they having clear colours, medium growth, good size and form, with very free-flowering qualities: Anna Olivier, C. Mermet, Mme. Falcot, Souvenir d'Elise Vardon, Edith Gifford, The Bride, Sunset, S. A. Pison, Perle des Jardins, Mrs. James Wilson, Madame Hoste, Madame de Watteville, Madame Charles, Luciole, Ethel Brownlow, and Cleopatra. It should not be necessary to apply liquid-manure during the first season of your plants growing in such good soil—chopped turf—as you describe; but most likely the soil was rather dry, being fresh moved and stirred over previous to planting, and doubtless being raised somewhat as well. Then, again, if you use a strong solution freely, that also is apt to cause an unhealthy appearance, owing to the check such has upon the growing roots. Try and aim at a more medium treatment, both in watering, shading, and syringing.—P. U.

3757.—**Rosee in a greenhouse.**—You have started well with the Rose, and if you continue on the same lines you will get a splendid growth by the end of the summer. You may thin out the young shoots now—taking away the weak ones, of course—if there are too many. My own plants of *Mercéchal Niel* are in the same condition as yours, and I have left a sufficient number of young shoots to cover the available space at about 9 inches apart. Do not, by any means, discontinue the use of liquid-manure to the roots. This is just the time they want it most. With regard to giving more air, the young growth can hardly have too much in warm weather. It is, however, desirable to close the house at night for another month, and from October to Christmas ventilate the structure all you can both night and day, consistent with the treatment of any other plants growing in the house at the same time.—J. C. C.

From the wording of your query, I think you cannot have cut the plant back in the right manner. It should be cut back to the base of the plant. Your query reads as if you had only cut back each shoot that bore a flower to the base of these lateral growths. If not, and your plant is making many shoots from the bottom, I should be inclined to leave them a little longer so as to see which will come on the strongest, and then remove all but three. Keep the plants growing as freely as possible until the autumn; then admit air and ripen off steadily. A free supply of weak liquid-manure will be beneficial all through the summer.—P. U.

3740.—**Insecte on Standard Rosee.**—The Rose-trees are attacked with the Rose-maggot. The only remedy is hand-picking. If you examine the leaves that you find curled up, or any that do not appear likely to unfold, you will find the maggot inside of them. You must look minutely for the insects, so as to destroy them before they have time to eat their way into the flower-bud.—J. C. C.

From the description I think it is red-spiders that are troubling you. A thorough syringing is the only remedy. Use the solution about 70 degs. Fah., and have a little paraffin-oil with it; a wineglassful to 20 gallons of water will be powerful enough. It will be of no service unless you use the mixture freely, and also let it come into contact with the under part of the leaves.—P. U.

These are very destructive, and from the description I should think that they are the larvae of the Rose Moth (*Tipica ornithophagella*), which may be eradicated by hand-picking, the best remedy. Some growers

are much troubled with this pest. At the end of May or early in June the moths appear, the time depending upon the locality and the character of the season. The female deposits eggs, as a rule, on the buds, and the caterpillars hatch in about a month. When fully grown, they roll themselves into cases formed of bits of the leaves, and here in the soil a little below the surface. The larvae are yellow, with a black head, and ascend in the following spring, eating the leaves and tender shoots. The best of all remedies is to remove in the winter the soil about 3 inches in depth, eat, of course, disturbing the roots of the trees, and bury it at a considerable depth in another part of the garden, or burn it. The marauders are then killed. I should think that yours is the pest of what you have reason to complain.—G. T.

3768.—**Standard Rosee not breaking.**—It is difficult to judge of the reason your plants do not all break at once; but perhaps it is not a failure after all. You do not state if the plants are all Teas or not. If half Tea-scented or half Hybrid Perpetuals, it may be that the former have broken into young growth earlier than the latter, as they are inclined to do. Then we have had a particularly bad spring for newly-transplanted Roses. My own beds show somewhat the same evencness in breaking as yours do.—P. U.

3774.—**Rose questions.**—The following is a list of really good dark Roses that will give you every satisfaction. They are all full and of good shape and size. By dark Roses, I take it you do not mean the cherry-red varieties like Ulrich Brunner, Auguste Rigotard, &c., so I have left them out entirely. Abel Carrière, A. K. Williams, Charles Darwin, Charles Lefebvre, Countess of Oxford, Duke of Connaught, Duke of Edinburgh, Earl of Dufferin, Folair, Fisher Holmes, General Jacqueminot, Maurice Bernardie, Prince C. de Rohan, and Victor Hugo. These are the very best and you have a wide selection. Replying to your second query, *American Beauty* is not like *Triomphe de France*, but it is much like *Mme. F. Jansé*; *Comte de Paris* and *Baron Nathan de Rothschild* are also similar in several respects. Far too many Roses are introduced as new, when they are not really sufficiently distinct among such a vast variety as I now possess. You ask for a list of two dozen extra sweet-scented, also for one dozen extra sweet-scented. For cutting from I would strongly recommend the following: General Jacqueminot, La France, C. of Oxford, D. of Edinburgh, Fisher Holmes, Gabrielle

are no less than five varieties which are almost useless for you to grow; these are: Gustave Piganeau, Gloire de l'Exposition de Bruxelles, James Brownlow, and Emotion. The remainder are good kinds, but a full description of each must be withheld; almost any nurseryman's list would contain them, and they would doubtless be pleased to seed you one upon application. You next ask for the best orange-coloured and best red climbing Roses. These are the best I know: Orange-coloured: Madame Falcot, Safrane, W. Allen Richardson, Rôve d'Or, Duchesse d'Auerstadt, Etoile de Lyoe, Jean Pernet, La Boule d'Or, Mme. Chauvry, Maréchal Niel, Perle des Jardins, Shirley Hibberd, and Sunset. Red climbers: Sir J. Paxton, Reine Marie Henriette, Chevalier Hybrid, Madame de Tartas, Climbiog Victor Verdier, Gloire de Margottin, Madame Isaac Periere, The Waltham Climbers, Nos. 1 and 2, and Fulgenc. If you desire any further reply, I shall be pleased to give you the best I can in another issue.—P. U.

3770.—**Rosee Marechal Niel and Niphotos.**—Your plants being newly planted, I should say you have either kept them too dry or else excessively wet at the roots. Either of these would have the effect you mention; so, too, would an overdose of liquid-manure. From your description the feeding roots of your plants have been suddenly checked in some way. If you were to syringe the plants freely during midday, and keep the house shut up too closely, with no shade, that would also cause the same effects as you describe.—P. U.

3735.—**Green-fly.**—No one need have any green-fly upon his plants if he would but adopt measures for their destruction before the enemy gets numerous, especially in small houses, where most of the stock is convenient to attend to. I do not believe that there is one of the remedies advertised for killing green-fly that is not efficacious when used in a proper manner, as there is no insect easier destroyed; but whatever remedy is used it must be applied in a proper manner. The easiest way of killing insects upon pot-plants is to dip them in a liquid solution of one of the many articles advertised. The best time to do this is late in the day when the house is closed, and creeps upon walls may be syringed at the same time. A large bottle of the prepared liquid, if kept corked, will keep good for several weeks, and when wanted for dipping it can be emptied into a bucket or other vessel.—J. C. C.

When plants are badly attacked by green-fly the effects will be visible for some time after the flies are destroyed. Liquid insecticides will kill green-fly if used strong enough, and if one application of any given strength does not settle them try again with the wash a little stronger. I have found Tobacco-powder and soft-soap very effectual. Two ounces of soap and one ounce of Tobacco-powder to the gallon of water used warm will kill green-fly, either by dipping, which is the most economical, or syringing.—E. H.

Dip the shoots of the plants in Tobacco-water, but a gentle fumigation is the best way to get rid of the pests, and if you are much infested with it I should advise this course. It is not pleasant, as you say, but it is a good remedy, and such things as *Pearl-onium* and *Roses* are very difficult to get clear of green-fly, if some measure like this is not adopted. The dipping of the shoots or going over them with a brush dipped in a solution of Tobacco-water is a most tedious process. The smell of the Tobacco-smoke would soon pass away, but if you have decided not to have recourse to this measure apply such an insecticide as *Fir-tree oil*, or the other things advertised in this journal. Go by the directions given. An overdose is worse than none at all. Much good may be done by well syringing the plants, and after fumigation this should be done.—C. T.

3612.—**Lime water for worms.**—Clear lime-water will drive the worms out of flower-pots, but must be used more than once, for if it causes the worms already there to take their departure it will not prevent others taking their place in a day or two. In any case, I should be sorry to give it to very delicate plants. On the principle that "pre-



Begonia Schottiana. (See page 156.)

Luzet, Mrs. John Laing, Anna Olivier, Marie van Houtte, Innocente Pirola, Safrano, Mme. Falcot, Mme. Lamhard, Niphotos, Perle des Jardins, Souvenir d'un Ami, The Queen, Souvenir de la Malmaison, Sunset, W. A. Richardson, Françoise Kriger, The Rogosoa, Homéro, and Isabella Spruet. Twelve good sweet-scented kinds are: C. Mermet, La France, Socrates, C. Riza du Parc, A. Colum, Annie Wood, General Jacqueminot, E. Y. Teas, Heinrich Schultze, Madame Cusie, Madame de Watts, and Souvenir d'un Ami. Your fourth query would lengthen this reply far too much, so I only point out that among the list given

vention is better than cure" I always use Porter's Inviscible Crooks for all plants in pots. I have no trouble with worms or any other vermin, as nothing can get into a pot where one of these is used. They last for a number of years, with the advantage of being very cheap. Several of my friends use them, and I have no doubt that they only require to be known to be generally adopted by all growers of plants in pots, being the very thing for that purpose.—E. W. H.

OUTDOOR PLANTS.

SOWING SEEDS IN DRY WEATHER.

The present season has, according to reliable statistics, beaten the record in the matter of continuous drought; but whether we get rain in time to save the crops or not, there is no doubt that we do not reckon upon drought as a very serious enemy to vegetation, for we look for April showers as regularly as the month comes round, and if the showers are absent the seeds fail to germinate; and the present exceptional drought will not be altogether to be deplored if it attracts more attention to the waste of water, and the very inadequate provision for its storage in gardens generally. Watering seeds is one of the things that need care, as stiff soils run together, and if allowed to get dry, are worse than if left entirely without; but, on the other hand, if artificial watering is done as regularly out-of-doors as it is done under glass, there is no reason why the results should not be equally satisfactory, and if you start watering at all out-of-doors make up your mind to continue it until the necessity for it has passed away. One of the lessons impressed on all this year is the superiority of drilling in seeds of all kinds over ordinary broadcast sowing, for with a fairly deep drill the seed is deposited at a uniform depth, and in ordinary seasons in moist soil; but if exceptional drought prevails water should be poured along the drills, and the seed sown right on the wetted portion, covering with dry soil. This will ensure rapid germination; but a good deal of the seed sown this year on the broadcast plan is still as dry as it was in the seed-bags, and will not germinate until rain falls, or artificial watering is done thoroughly. J. G., Hants.

A note on Tulips—If our splendid Tulips are required for a garden that does not admit of many varieties of one kind of plant, a choice selection would be the following: T. felgeae, T. Gesneriana, and T. macropetala. The first of the three is one of the finest of all the later blooming Tulips. The flowers are brilliant crimson in colour, quite self, and they are borne on tall stems. It is not difficult to grow, like the Turkestan Tulip, T. Greigi, and some of the other species, and is one of the cheaper, a few rare species being too expensive to purchase in quantity. A noble species is T. Gesneriana, the parent of the florists' kinds, particularly the form named major, sometimes called spatulata. A bed of this vigorous species, robust in leafage, and bearing bold, strikingly handsome scarlet flowers, makes a bright show. One sometimes sees very fine clumps of it in cottage gardens, making a bright, massy colour in the month of May. T. retroflexa is rather expensive, but it is a beautiful flower, pure yellow, with gracefully recurved segments. The three kinds named were especially selected recently from a large collection.—V. C.

3758. — Plants for a Birmingham garden.—You could grow Peas, Runner Beans, Vegetable Marrows, Beet, and such like vegetables with success, also Potatoes, if the soil is good, and possibly the fault has been in not having a sufficiently rich, well-worked ground. Vegetables require a substantial soil, otherwise it is hopeless to expect a satisfactory return. You give no particulars as to your treatment, character of soil, or locality, so it is somewhat difficult to advise you. As regards plants, you could grow many charming things if the soil is good, such as Tufted Pansies, so many delightful varieties, Auriculas, Roses, and Michaelmas Daisies for the autumn. Here are the names of a few things in addition to the above: Aletro-meris aurea, that likes a warm soil, and sunny position; the white Japanese Windflower, Anemone japonica alba, Aquilegia, Campanula

glomerata dehurica (rich blue), Corocopsis lanceolata, Delphiniums, Dictamnus Fraxinifolia, Doronicum, Eryngium amethystinum or E. plaeum (beautiful Sea Hollies), Fuchsia, Gypsophila paniculata, Hellanthus erygale, very charming in autumn, free, graceful, and bearing a profusion of yellow flowers on the slender shoots; Irisce, particularly the German kind; Lobelia



Verbascum phanicum. (See page 159.)

fulgeae, Evening Primrose, Lythrum salicaria roseum, a delightful rosy-flowered Loose-strife; Poppies, Rudbeckia species, Sedum spectabile, Tritomas, Crowe Imperiale, Carexons, Daffodils, Tulips, Hyacinths, and other spring-flowering bulbs. Of course, it is late to plant now, but you may get it at once Michaelmas Daisies, the Helianthus, and autumn-flowering perennials, also many annual plants, as Poppies, Sweet Peas, Mignonette, and a few good bedders, as Tuberosa Bogonia.—C. T.

3759. — Weeds in garden paths.—Such question are constantly being asked in GARDENING, and I am afraid many readers do not take full notice of the answers given. If the paths are overrun with Couch I should think they are in bad condition, and a thorough overhauling would be advisable later on. You may apply one of the many weed-destroyers advertised in GARDENING, and dull weather is best to choose for its application. Vitriol is a powerful remedy, but I do not care to advise the use of such preparations, which do more harm than good unless used with extreme caution. The liquid may be poured on to the paths with a fine-rosed pot, taking care to keep it away from the edge of the Grass. Several applications may be given, as it is necessary not to let the liquid soak into the edge of the path and kill the roots of the grass.—C. T.

3743. — Auriculas in the open.—As the ground for flowering is now over, it is scarcely worth while to get plants, as they may be easily

raised from seed. Get good seed and sow in July, and sow the seed in shallow pans or pots, watering the soil before sowing. You will, however, find full particulars about Auriculas in quite a recent number of GARDENING, May 6th, p. 134, where the question of seed sowing is fully gone into. From good seed you will doubtless get some fine flowers, and the way to secure a fine selection of Auriculas is to mark the plants when they bloom, choosing the very best colour, so as to obtain a good strain, as the florists call a selection of any flower. Clear, bright colour, the flowers well shaped, freely produced, and effective are what will best in the garden, not the shady shades that some affect to admire. Auriculas are more largely used each season for the garden, and they are delightful when in full bloom, the flowers very fragrant, and if the plants are robust a large quantity is produced on each tuft. But it is only by a process of careful selection that one gets this result. Of course I am writing of the purely border flowers, which are far more beautiful than the florists' kinds, the green-edged, and so forth, which must be grown in pots to get the characteristic and distinctive delineation of coloring.—C. T.

— I should advise "Rus," to buy a few named varieties of alpine Auriculas for this purpose. They are infinitely more satisfactory than unnamed sorts, if only a half-dozen varieties, and then cross at blooming time, and save his own seed for future sowing. He will be likely to get more enjoyment this way than any other. If a little decayed manure and leaf-mould were dug into the border in which they were planted, it would be all that the plants would require. I should like to ask your experienced grower and correspondent, "J. D. E., whether it is usual at this date (May 11th) for seed-pods of Auriculas to burst? In two cases, where plants have been crossed early—viz., Rev. F. D. Horner and Pizzaro, both have swelled seed-pods the size of good sized Peas. The outer cuticle has burst, I suppose, owing to the number of seeds developed, and they are to be seen lying exposed on the inner globular portion of the ovary. Will the seeds ripen in the usual way? And what can I do to prevent losing the seed? —FRED. T. POULSON.

3658. — Dandelions on a tennis-lawn.—A sure way of exterminating these is to keep cutting them off throughout the growing season. With a sharp long-bladed knife cut as deeply into the ground as possible, so that a good portion of the root is cut out. Continue to do this every time the leaves appear, and they will get weaker, and will eventually die out. Nothing can resist this for more than a season or two, as the roots do not get nourished, and rot away in the winter.—J. G. B.

— The best way is to go over the lawn carefully and spread out the offending plants, being cautious not to disturb the turf more than necessary, or to leave holes. An old knife is a good implement for the purpose, and answers as well as any more elaborate appliances. Bare spots may be made good by filling up with fresh pieces of turf, and give the whole a good rolling. Avoid any preparation such as vitriol on a lawn, otherwise the Grass is sure to get much injured. You could go over a good-sized lawn in a comparatively short time with an old knife to cut out the Dandelions. The quicker it is done the better.—C. T.

3771. — Flowers for a sandy soil.—I am afraid you are taking a depending view of the case, as from what I know of soils of similar capacity to yours, there are many flowers that you can choose with every prospect of success. Even Roses on the Manetti stock will do fairly well if you manure the ground well at first, and make the bed about 4 inches below the surrounding surface, and every spring fork in a dressing of English Guano. In every case keep the surface of all flower-beds and borders below the level of walks and surrounding ground, and always keep on hand a store of Peat-Moss-litter, which, when broken up, is a capital material for laying on the surface as a mulch to prevent the evaporation of moisture from the soil. Looking at the cost of transport the guano referred to is the best substitute for manure you can get, and may be safely used for any kind of plants or trees. The principal plants to avoid are those with thick, fleshy leaves. All the Dianthus family, which includes Carnations,

Pinks, Sweet Williams, and the Mule Pinks, would quite happy with you. So would the Rocky Mountain Columbines, if you water them in dry weather; also the single forms of Pyrethrums. With a thick mulch and a position shaded one half of the day, the Tufted Pansies will thrive. The Scotch Rosee and also the Austrian Briers would no doubt do well, and I would certainly venture to plant a bed of the Tea-scented varieties. Such hardy perennials as Iberis coronata, Alyssum saxatile compactum, and several of the low-growing Campanulas may be sown with safety.—J. C. C.

3724.—**Moving a Christmas Rose.**—If it can be moved entire with a large ball of earth the removal may take place in the end of the summer or beginning of autumn. If it is intended to divide it up to make stock, the spring, just as the new leaves are breaking away, is the best time; but old clumps broken up take a long time to get established, and I am always reluctant to break up or remove old clumps of the Christmas Rose.—E. H.

— The best season of the year to divide the Hellebore is in the late spring, and some do the work in the summer; but a large grower of the Christmas Rosee for the trade always divides in spring, and during the summer keeps them well supplied with water; also mulch them with either well rotten manure or Cocoa-nut-fibre refuse, the former for preference. If you have no special reason for lifting the plant I should not do so, as the Hellebore does not like disturbance at the root. The plants will succeed in ordinary soil, but like a moist shady place. Some of the finest specimens I have seen were those established by the side of a shady ditch in moist, peaty soil. Three of the finest varieties are St. Brigid, Bath, and maximus, each bearing well-shaped flowers, pure white.—C. T.

— Directly after the last flowers are cut is the best time to move any of the Hellebore family. The new growth is just on the move; the plants are at once into free growth, and do not feel the check, providing, of course, sufficient water is given the roots to prevent the leaves flagging.—S. P.

3673.—**Lily of the Valley in a bed.**—When Lily of the Valley grows into a crowded mass the flowers must be wanting in quality. Take them up carefully early in November, and make a fresh bed. Dig the ground deeply, working in a liberal dressing of rotten manure, for this plant loves an abundance of rich food. Select the largest crowns, and set them out 4 inches apart; the smaller ones can be put by themselves, and with a season's good growth will come to blooming size. Give them a top-dressing of rotten manure annually, and you will get an abundance of good bloom.—J. C. B.

3672.—**Auriculas.**—The side shoots, if taken off without roots, will form them if inserted as cuttings round the sides of small pots of sandy soil, with free drainage, and placed under a hand-glass or in a close frame; but the simplest and best plan is to obtain a few roots with each offset, as then they do better and with less trouble. Keep them in pots throughout, pinning them if possible in a case in a cold frame for the winter. If several are inserted in a pot in the first place, they should be potted off singly as soon as well rooted. The plants will bloom nicely in 3 inch or 3½ inch pots, and indeed they do better, at any rate while young or small, in small sizes than larger ones. Keep them in a shady place during the summer, and the soil always moderately moist.—B. C. R.

— The best time to deal with the common border varieties is the early autumn, as then the soil gets well settled before the winter, and they have not a hot summer to go through. I should deal with them, and prepare a good, well-prepared piece of ground for them, where they should succeed well. It is most important to do this work early in the autumn, so as to get the plants established before winter frosts set in. You could take off the offshoots without roots, but it is better to get well-rooted crowns; there is less trouble, and they are far more likely to succeed well. This applies more especially to the florists' varieties, not the common border kinds, which are far more easy to deal with. In regard to the florists' kinds, the end of March is a good time to remove offsets, putting them in small pots, and using a light soil. If, say, a vigorous offset is taken in March, it will soon make a good flowering plant. Offsets taken without roots often remain a considerable time

before they start into vigorous growth, and send out strong roots. Put unrooted offsets into a hand-light, and keep close; only remove the top to let in air, and dry up superfluous moisture, otherwise they will damp off. If you have good border flowers, always take care to select the best colours and increase your stock. It is in this way that I can get a good selection, weeding out the poor, watery tints, which are ineffective in the garden. Also raise seedlings to get new colours, and the best time for this work is as soon as it is ripe, which will be in July. There is time to save seed.—C. T.

MULLEINS.

The Mulleins in cultivation in gardens are for the most part of only biennial duration. They are somewhat unsatisfactory plants to deal with on account of this, and also on account of their extreme susceptibility to cross-fertilisation. It is almost, if not quite, impossible to keep them true to name when a collection is grown;

and groups of a mixed lot of these hybrids are at once interesting and very beautiful. The stately flower-stems and large, showy yellow blooms of the species allied to Thapsus mark them as wild garden flowers, and where the soil is rich and sufficient no better or showier plants can be grown. In the rockery I find them quite indispensable, and encourage rather than prevent their seeding amongst the mixed shrubs, &c., in the vicinity of the rock garden. They are also good

BORDER PLANTS, and rarely, if ever, fail to reproduce themselves freely from self-sown seed. *Verbascum Chalcid*, or *V. vernale*, is one of the true perennial species at present in cultivation. This may apply only on warm soils. It often attains to 10 feet in height, and when well grown forms a most imposing group. The leaves, very large and bright-green, come up early and are very effective. The flowers are large, yellow, with purple filaments, very striking, and last a long time in good condition. For the back row of mixed borders, for isolated groups, and amongst mixed shrubs this species is very effective, and as it gives little or no trouble, is certainly one of the best for general purposes in a garden. Of this there are two hybrids, semi-lanatum and *Frynianum*, both showy.

Native of Europe. *V. crassifolium*: A very distinct and charming species, with yellowish tomentose woolly leaves and robust spikes of large yellow flowers. It is a native of Portugal, and one of the few species that will do in a light sandy soil. *V. cupreum*: A species nearly allied to *V. phoeniceum*, quite hardy, and a true perennial. It has cordate, wrinkled leaves and copper-coloured flowers, very quaint and interesting. It is perhaps a hybrid of *V. phoeniceum*, flowering May to August. South Europe. *V. olympicum*: A gigantic *V. Thapsus*, and one of the grandest of the genus. The flower-stems in strong specimens attain to from 6 feet to 10 feet in height, the flowers very large, rich yellow, the woolly leaves forming large rosettes. A biennial from the Orient. *V. phoeniceum* (see p. 153): A perennial species, and one of the very best for mixed borders in small gardens. It is very variable, there being white, violet, lilac, rose, deep violet, and purple-flowered varieties. It continues flowering from May to August, and when doing well is a very striking plant. Native of South Europe. *V. phlomoides* (the large woolly-leaved Mullein) is a biennial and very fine in groups. The flowers are large, pale yellow, with purple filaments. Robust specimens reach a height of from 6 feet to 8 feet. South Europe. *Australe* and *Sartori* are well-known and desirable varieties. The pyramidal Mullein (*V. pyramidalum*), with its candelabrum-like branches of bright-yellow flowers, is a very effective border plant. It is a perennial, grows in rich soils, and is very effective with its towering flower-stems and huge rosettes of crisp leaves. Native of the



OUR READERS' ILLUSTRATIONS: *Verbascum nigrum* var. *album*. Engrave for GARDENING ILLUSTRATED from a photograph sent by Miss Wolley Dod, Edge Hill, Malpas, Cheshire.

indeed, the only way if this be desired is to grow one or two specimens only in a garden, and these as far away from each other as possible. Many of the species and varieties are, as a matter of fact, considerably enhanced by

its candelabrum-like branches of bright-yellow flowers, in a very effective border plant. It is a perennial, grows in rich soils, and is very effective with its towering flower-stems and huge rosettes of crisp leaves. Native of the

Caucasus and Siberia. All the Verbascums are worth a place in the garden if only they could be kept true, but in the absence of this, the hybrids, which are always showy and in some few cases differ little from the types, may well be grown. Amongst the species to be noted as worth procuring should opportunity occur are *V. macranthum*, *V. Theopasti* and hybrids, *V. longifolium*, *V. virgatum*, *V. Blattarii* and *blattarioides*, *V. niveum*, *V. Boerhavi*, *V. sinuatum*, *V. nigrum* (see p. 159) and *var.*, *V. orientale*, &c. All may be readily raised from seed, and are well worth taking care of. D.

3728.—Plants for a border.—You ask an important and interesting question. There are many pretty hardy plants that are not sufficiently thought of, although with fragrant leaves. I do not care for variegated plants, as a rule, but a few are good. As regards the fragrant-leaved plants, one must have the Lavender, which it is unnecessary to describe. The soil in which it is planted should be light and the position sunny. One of the most charming bits of planting I remember was a border where the sweet-smelling leaved plants were grouped together—the Lavender, Rosemary, and other things. The Rosemary is a very hardy, shrubby plant, and grows in common soil, if dry and warm so much the better. When in flower it is very pleasing. Then you may choose the Myrtle, which, however, in cold spots is likely to get hurt in the winter. The Southernwood, or "Old Man," as the children call it, and Sweet Gale (*Myrica Gale*) has fragrant leaves. It grows into a bush, and must have a moist place. Then there is also the Sweet Fern-leaved Gale (*Comptonia asplenifolia*), which may be noted for its fragrant foliage. Thymes in variety are of value. You can have the Wild Thyme (*T. lanuginosus*) and the Golden Thyme, which is very pretty when seen in a good compact condition. *T. serpyllum album* (white) and *coccineum* (magenta) are very beautiful. The leaves of the *Chrysanthemum* are fragrant, and the Gum Cistus also. Such kinds as *C. ladaniferus* deserve to be more often grown than is at present the case, its leaves, when rubbed against, giving off a rich fragrance. They must be grown in a sunny position, in light soil, then a bed of them forms a good feature, as the flowers are attractive. In severe winters they are likely to get hurt. I have selected a few of the more pronounced hardy plants for their variegation. One could make a long list if those with silvery leaves were included, and you will find in Robinson's "Hardy Flowers," published by Macmillan and Co., a list of the finest kinds. *Alyssum saxatile variegatum* is a variety of the Rock Madwort, but it is not so brilliant as the type, which is one of the best flowers of spring for effectiveness. A rare variety of *Cineraria maritima* named *aurea marginata* is a very finely-marked variegated plant, the leaves mottled with creamy white and glaucous colour. It is very distinct and not weak. I have seen it in nurseries, but probably is rather expensive as yet. The variegated variety of the Crown Imperial is a showy plant, the leaves being margined with golden-yellow colour, the flowers curved red; and a very useful variety is *Daactylis glomerata variegata*, which is a beautiful plant, finely variegated, easy to grow, and not "miffy," like many such things. The Funkias supply a large number of variegated kinds, varieties of *F. lancifolia*, *F. ovata*, etc., these of the first-named in particular being of note. *Alba marginata* is one of the best, and *Hoteia japonica variegata* is very distinct, the leaves well marked, whilst you may also include the variegated variety of *Iris fetidissima*, *I. pseudocorus*, *Ophiopogon Jaburum variegatum*, *Sedum Sieboldi variegatum*, very pretty, but not so robust as the type, and the Golden Money-wort, *Lysimachia Nummularia aurea*, a big name for a little plant. It is one of the finest variegated hardy things grown, its leaves are pure golden-yellow without a trace of green, and the growth is robust. The golden-leaved variety of the Valerian is very bright in the spring, making quite a patch of colour on the border. The above list will form a very good beginning to your collection of fragrant and variegated-leaved plants.—C. T.

Thinning annuals.—A word of advice to those who have many annuals in their garden is to thin them out well, so that each plant has

sufficient space for its full development. It is impossible to get well-grown plants if they are deprived of a proper shade of light and air; but in many, I may say the majority, of gardens they are so crowded up together that the growth is naturally weakly, straggling, and the flowers few in number. This is not the fault of the plant, rather of the way in which it is grown. Few classes are more gay than annuals when they are cultivated properly, given a reasonable amount of space, and a fairly good soil. Then the results are very different from those that one sees in gardens. Thin sowing is very important. There is much waste of seed through the careless way in which it is sown, and the seedlings commence their life with a weakly growth. Always bear in mind when growing annuals, firstly, the importance of thin sowing and letting each plant have its fair share of room. Ordinary garden soil will suffice for most annuals.—V. C.

ORCHIDS.

CYPRIPEDIUMS OF THE "CONCOLOR" SECTION.

SEVERAL enquiries have come to me about these Orchids, showing that there is no lack of interest in them. "J. T. H." says he cannot grow the species named above to his satisfaction, wants to know where it comes from, and all about it, more especially how to get the flowers up upon a longer stalk? Another query is from "C. W. C.," which asks for the proper treatment of *C. Godefroyi leucocentrum*? Just this variety I do not know; indeed, I do not think it is an acknowledged variety. Then comes another enquiry from "O. Murdock," asking for some instructions how to do *C. nivenum*? So that I cannot do better than to answer all under the same heading. The plants in this section are all Orchids belonging to the warmest regions, requiring under cultivation a high temperature and a moist atmosphere; in fact, I should advise them to be kept in a house that does not at any time fall below 63 degs. of heat. They are plants that affect the limestone districts only, and, therefore, I always recommend my friends to use limestone in growing them, as I am sure where this has been done in a proper way, the plants not only grew free, but they will throw up their flowers on a much longer stem; but the worst of it is so few people appear to use this material with any amount of freedom, apparently living under the impression that limestone or anything approaching this in consistency is death to the Lady's Slipper. One young friend, whom I had told to use a good bit of limestone with the soil, professed to follow my advice; some time afterwards, when I called to see him, he said his plants did not get on in spite of what I had told him. Upon knocking a plant out, I found he had placed three pieces of old mortar, about 2 inches in length, round in the soil near the sides of the pot. Now this is what so many call using lime-rubbish or limestone extensively; but this is just like a chip in porridge—it will do neither good nor harm. I would use for them an abundance of drainage, and this to be composed of limestone or old mortar-rubbish; upon and in this the roots should be placed; and for soil use loam, peat, and chopped Sphagnum Moss in about equal proportions, taking care that the two former have the greater part of the fine soil extracted, and use with this quite one part of old mortar. Potted in this way, you will find the plants thrive in a better manner. In one year it will not have the effect of lengthening the flower-stalk much, if any, but in the second flowering you will perceive a difference, which will go on increasing if the temperature and the moisture is maintained at the proper condition. The following four kinds may be included in this section, and all will thrive well if potted on the principle laid down above, when, if heat and moisture be maintained, they will soon make roots in abundance, and will flower in profusion.

C. BELLATULUM: This very fine form was introduced by the Messrs. Low and Co., and it is undoubtedly the finest of its section. I am not in a position to give its native locality, for the necessities of the trade still keep it a secret. It is a magnificent grower, having large leaves of a deep-green, more or less mottled with pale

green on the upper side, but beneath they are of a uniform dark-purple; the scape has hitherto been exceedingly short, bearing usually but a single flower; but this is some 3 inches across. The ground colour is usually white in front, sometimes, however, it is soft-yellow and rosy-yellow, boldly spotted with deep-purple; the petals are very large, depressed; the lip is very much in shape like a plover's egg, and more sparingly spotted than the other parts of the flowers. This plant has not yet been seen in its beauty, because the flowers have not been thrown up sufficiently high to show them off effectually; but this, I am of opinion, arises from bad culture, but I have seen a plant with a scape some 3 inches high, giving an indication of what it will prove to be when properly grown.

C. CONCOLOR.—This, the first known of the race, was first found in Burmah by the Rev. Parish, and some four or five years afterwards living plants were obtained by the Messrs. Low and Co., and it has become known at widely distant places, so that it has been found to vary considerably from different localities, and several varieties have been recorded. The leaves are thick and fleshy, the colour beneath being reddish-purple, but the ground colour above is deep green, mottled more or less with greyish-green. The scape is, in general, very short; in fact, less has been done to improve this defect than with any of the section, and I should be glad to know from the collectors if this feature is observable with it when growing in a state of nature. The flowers are borne singly or in pairs, the ground colour being pale-yellow, thickly speckled with small dots of crimson.

C. GODEFROYI.—This is a plant for which we all have to be thankful to my friend, M. Godefroy, of Argenteuil, near Paris, who first introduced the plant into French gardens. It comes very near to *C. bellatulum*; but it is less robust in growth, and its flowers are smaller, and it is less boldly coloured; but it is, nevertheless, a most beautiful plant, deserving of the close attention of all growers of Lady's Slipper Orchids. The leaves are some 5 inches long, sometimes shorter. They are strap-shaped, rich dark-green above, mottled with pale green, whilst beneath they are of a reddish-purple. The scape is usually one flowered, the flowers large, considerably more than 2 inches across. Their ground colour is white, sometimes creamy white, and the pouch-like lip has frequently a more decided tinge of cream colour, and they are more or less profusely spotted and blotched with bright purple. M. Godefroy has expressed it as his opinion that this plant is identical with *bellatulum*, but the latter plant is fully double the size of it, and whilst I admit it comes close to it, I cannot but think them quite distinct. This plant comes from some of the limestone islands in the Gulf of Siam.

C. NIVNUM.—The first appearance of this plant was as it laid upon the table in Messrs. Stevens' rooms at Covent-garden, and it was catalogued as *C. species*, and nearly everyone took it for *C. concolor*, and as the last-named plant had been imported in some quantity, none wanted it, and it was sold very cheaply; but when it flowered, the present snowy-white species was revealed. It is the smallest growing plant of the series, the leaves being of a very deep-green above, speckled and freckled with pale greyish-green, and beneath they are dull-purple. It is curious enough that this plant has produced a scape taller than the others, frequently 6 inches high, and I have seen it more, and sometimes two flowers are produced upon a stem. These flowers are snowy-white, sometimes freckled with purple. It is a perfect gem. These plants all require to be well exposed to the sunlight. MATT. BRAMBLE.

3729.—Pronunciation of Clematis.—In Johnson's "Gardener's Dictionary," Chambers' "Etymological," Nuttall's "Standard," and in Webster's "English Dictionary," it is in each case pronounced with the accent on the first syllable—thus, Clemá-tis. Sir Walter Scott, in "The Lady of the Lake" gives it the same accent—"The Clematis, the favoured flower, which boasts the name of Virginia Bower."—L. O. K.

3832.—Sewage in the garden.—I have a cesspool from which I draw very freely for liquid manure, without adding any other waters. But I think all such places should be ventilated by some means, to allow the gas to escape. My cesspool is permanently ventilated by means of a conducting pipe.—SOLVITA

TREES AND SHRUBS.

A HOP COVERED ARCHWAY.

The Common Hop is a capital plant for covering an archway, and it makes a happy contrast with Ivy and Clematis Jackmani and its varieties, the mass of deep-green leaves intensifying the colour of the rich abundance of deep-blue flowers. Nor is its charm confined merely to summer, but as autumn approaches the plant then carries its rich clusters of golden-yellow Hops, and receives additional beauty of no mean kind. We can judge of the rich beauty that a common climber can give when once it has become established by a glance at the illustration. There is another kind called the Japanese Hops which has been much used for covering arbours, and trellises. The growth made is surprisingly rapid. Those who have not yet heard of it should give it a trial, and though resembling the common type, it has no commercial value whatever. The bunches of flowers are larger, and, therefore, the plant has an advantage for the garden. T.

Japanese Maples.—These beautiful shrubs are hardy, although there seems to be a

colour, which gives way to deep blood-red as summer approaches. A good plant of it is of a full rich colour and striking appearance throughout the season. Another very fine variety of *A. palmatum* is *septenlobum elegans purpureum*, the leaves deep-purple crimson, a fine effective colour, richer than in the type itself. Exquisite in form is the rich-crimson leafage of *A. p. dissectum atropurpureum*, a lovely variety for its deep colour and finely-divided foliage, and a note may be made also of *palmatipidum*, the leaves delicatogreen, and like a Fern in character. Of a different character to the foregoing is *A. japonicum*, which has deeply-lobed leaves of a light-green colour, but in the variety *aureum* they are yellow, the footstalks and veins of a rose-coloured shade. All the above are hardy, except possibly in the bleakest spots in England, and comprise the finest of the dwarf *Aceras*. As yet they do not seem to have got very popular, chiefly, no doubt, from the idea that they are in some measure tender.—V. C.

Azalea mollis.—This fine *Azalea* is in fullest beauty early in May, and a large group of the shrubs present a glorious mass of brilliant and varied colours, ranging from bright-carmine to soft yellow. *A. mollis* is a native of Japan

and keeping them in the greenhouse. They will flower well, and after they have done blooming should be pruned back and taken reasonable care of. When all fear of frost is over plant them out, not in too sunny a spot, and water them occasionally. This *Azalea* is one of the most useful shrubs to bring on into bloom gently under glass that an amateur can have, and a great range of colour is got from seedlings.—C. T.

3744.—Shrub seeds from New Zealand.—You do not give names of shrubs, but the best way is to sow the seeds in 48 or 6-inch pots filled with a light soil, well cracked, and place them in the greenhouse. They may be some time before they germinate, and give water very cautiously, just keeping the soil moderately moist and no more. When the seedlings appear pot them off into small pots and keep them in the greenhouse. Take care not to disturb the soil more than necessary, as sometimes the seed germinates very irregularly.—C. T.

3772.—Trees for a garden path.—There is a fine selection of things to choose from. Very beautiful are the Thorns (double crimson), Paul's Scarlet, which succeed well in gardens, or if you require an arbour, get the *Wistaria sinensis*, and, if it is not too expensive, the white variety, which was recently recommended in GARDENING. They would form a fine border of flowers at this season of the year, or you could have many charming things, such as the Honey-suckles in variety, some of the prettier Vines, Dutchman's Pipe (illustrated in GARDENING, May 13, 1893), Clematises, particularly the beautiful *C. montana*, *C. Jackmani*, and its varieties; but many of Roses are delightful—Gloire de Dijon and others. Boys will not play pranks much unless the flowers hang over the main path; they seldom get into gardens if it is too risky. You could train the branches of the Laburnums over with good effect. You might also have *Bigoneis* or *Tecoma radicans* (the Trumpet-flower), the flowers orange and scarlet. It is very graceful, and a pleasing climber when in full bloom. Such a tree as *Pyrus nana floribunda* or *spectabilis* would be very charming. Both are of graceful habit, and in May wreathed with flowers, and another tree not too often seen, but well adapted for the position mentioned, is the Rose Acacia (*Robinia hlepida*), which is a delightful small tree, well adapted for a garden of limited dimensions. It has larger leaves than the other kinds, and a profusion of rose-coloured flowers in early summer, a long succession being maintained until the autumn. Give the tree a fairly sheltered spot, at least, the most sheltered corner in your walk, as the stems are apt to break quickly. I should get the *Wistarias* or some of the fine Vines, and one of the best is the Isabella Grape (*V. labrusca* or *V. Thunbergii*), which has large foliage that changes to deep-crimson towards the autumn.—C. T.

3733.—Box edging.—When planting Box edging it ought to be cut square across at the top, so that a perfectly level edging is assured. In that case nothing more in the way of clipping is required until April of the following year. In the present case I should advise that the Box be cut at once to within 3 inches of the soil. Watered growth is made afterwards will be level.—S. F.

—You may clip the Box edging within the course of the next few weeks, and we should, as the edging has only recently been formed, give occasional waterings, which will assist it greatly.—C. T.

—The Box should have been trimmed before planting, and then any little irregularity in length could have been put right in planting. Run the shears over it when there comes rain, and get it into shape, but do not cut into the hard wood.—E. H.

3734.—Hillias.—It has been a bad time for recently moved evergreens. The only thing you can do now is to mulch over the roots and make sure they are moist, and every morning and evening sprinkle the plants overhead with a rosed pot or the syringe. If this treatment had been carried out from the first they would have been safe. Possibly now it may be too late.—E. H.

3725.—Ivy covered with black fly.—The present dry weather is all in favour of the spread of aphides. The black fly will make the young leaves curl, disfiguring them, the stems being injured. Thoroughly syringe the leaves on the underneath side with strong soap-suds, applied with some force, afterwards washing the leaves thoroughly with clean water.—S. P.

—The fly would not be injurious if merely a few shoots are affected, and give a good drenching with the garden syringe. But you may rest assured, I think, that no harm will be done, and a good hoing will be helpful.—C. T.

—Black fly is injurious to everything on which it settles, and should be got rid of by the use of Tobacco-powder or liquid insecticide. The cheapest way of clearing it out is to thoroughly dress with Tobacco-powder, and the best way to keep it from coming on the wall, and wash off the dead and sickly leaves.—E. H.



A Hop-covered archway.

mistaken notion that frost quickly affects them. They grow slowly, and are dwarf, spreading out into a dense head, the colour being richer on those that are placed in moderately sheltered positions. A good group on the lawn boundaries or in association with variegated shrubs is very telling, and a few specimens of the species, which has beautiful crimson leafage that gets deeper as the summer lengthens, give delightful colour to the garden. The soil should be good, moderately light, and the position not exposed to cold, cutting winds. Those who wish to grow this class of *Aceras* will find the following varieties are quite the best for the garden, although there is a long list of kinds to choose from. I made this selection carefully, each variety possessing distinct characters, either in the fine form of the leafage or its deep, inviting colour. *Acer palmatum linearilobum* has long, deeply-cut foliage, which when young is tinged with red, but changes to green with age. It is very distinct, and stands out conspicuously from others in the collection. A variety of this, named *atropurpureum*, is an excellent companion to it. It is a beautiful shrub, the leaves when just expanding are quite of a rose-purple

but perfectly hardy in England, and now this fact is getting well known, it is reasonable to suppose that this race of *Azaleas* will be more largely grown in the future. During the past few years it has been coming rapidly to the front, and one cannot see how such a class can remain long in the background, such shrubs at this season of the year being smothered with flowers. It is noticeable that the flowers not only represent great range of colour, but individually they are of very fine form, broad, robust, and with plenty of substance. Owing to the early blooming of the shrubs, it is wise to plant them in sheltered positions, to prevent as far as possible injury to the expanding buds from frosts. A group of *A. mollis* on the outskirts of the lawn, backed with dark-green leafage, forms a brilliant picture of varied colours; the salmon shades, especially striking, are brought out by the deep-green foliage behind. A conspicuous *Azalea* late in spring is *A. altaclarensis*, the flowers of which are large, deep-orange, shot with red—a handsome and showy variety. Even those with only a greenhouse can get *A. mollis* in beauty by getting good plants, potting them up in the autumn,

The Jew's Mallow.—A very beautiful early-flowering shrub is *Kerria japonica* B. & P., which is popularly known as the Jew's Mallow. I have seen many large plants in older gardens lately; but it is a fine thing for those who have small places to grow, as it does not mind even the smoky atmosphere of the suburbs. The flowers are of a brilliant orange-yellow colour, large, and borne in profusion. A good healthy plant is quite a sheet of yellow in the spring months, and ordinary soil will suffice. Although a wall shrub—not least, usually seen against a wall—the *Kerria* may also be grown as a bush; but it seems to succeed better against a wall.—C. T.

FRUIT.

HOW TO THIN GRAPES.

THIS detail of *Vino* culture is of considerable importance, because if the bunches were left to themselves they would certainly be spoiled. To enable the cultivator thoroughly to grasp the details of thinning the berries, and the reason for doing so, it is wise to ask the question—Why should the bunches require thinning at all? The answer being—To obtain superior fruit to that which could possibly be obtained without thinning. No matter how many bunches are produced, if the berries individually are small the crop is counted a poor one. Certainly, the fruit does not bear comparison to that managed on the right principle, when I say that to have Grapes of large size it is necessary to remove quite one third of the berries from every bunch, thus making space for the remaining fruit to swell to double the size it would attain if all were allowed to remain. The cutting away of these surplus berries constitutes the art of thinning. Experience only can teach the cultivator how much space to leave for the berries to swell to their full extent in various kinds. For instance, Gros Colman will need more room between the berries than Mrs. Pinos, the former being the largest berried variety in existence, while the latter is the smallest, if I except the Frontignan species. Madresfield Court is another variety to quote as requiring special attention in thinning. The berries of this Black Grape swell to a large size when properly managed in all respects, but there is an evil in connection with this kind when not thinned enough—that of cracking. The skin of this Grape is so thin and tender that the least pressure put upon it in any way results in a lack of elasticity, the skin refusing to remain intact. The result is that the berries then are spoiled. They cannot ripen off, however near they may be to it. Cracking generally takes place just at a time when colouring commences. At that period the additional space is required. In thinning the Grapes another point has to be considered—that of overdoing it. If too many berries are removed, those remaining cannot fill the space allotted to each. Not only is this defect a loss of weight of fruit and a loose appearance of the bunch, both when hanging on the vine or when cut. Over thinned bunches are entirely useless for exhibition, and they have a bad appearance on the dessert-dish; instead of standing up plump the berries fall away the moment the bunch is laid down, owing to want of support, and the bloom is rubbed off by the berries falling one against the other, exposing the stalk of each, which is detrimental as a perfect specimen of a bunch of Grapes of any kind or colour. The time to commence to thin the berries is important. Many persons leave the work much too long. It is not possible to thin a bunch satisfactorily after the berries crowd each other. In that case the bloom is certain to be displaced; as this is seen on the skin of the berry directly the berries are formed—in fact, it might be said the bloom comes with the berry. I would urge upon the operator that under no circumstances should the berries be handled or rubbed with the hair of the operator's head, because either will leave a mark upon them, and the bloom will be removed at once, spoiling the appearance of any bunch, and perhaps producing rust on the skin of the berries, which hinders them swelling to their natural size. A clean pair of VINE SCISSORS should be used, which taper at the point more than ordinary scissors do, they enable them to be pushed into the middle of the bunch, if necessary, to remove any berries.

A thin piece of builder's lath, 8 inches long and $\frac{1}{2}$ inch wide at one end, in which should be cut a notch resembling the figure V, this space being to support any part of the bunch, such as a shoulder, when holding it for the purpose of more readily inspecting and removing badly-placed berries. The opposite end should taper to a point, as this can be more easily thrust into the centre of the bunch than the blunt end. The shoulders of the bunches ought to be supported after thinning to provide more space for the berries to swell, which increases the size of the bunches as well as the berries, rendering them also more shapely. Thin strips of bast, neatly twisted, are the best things for tying up the shoulders, one end being fastened to the shoulder, and the opposite to the wire above the bunches on which the rods and shoots are trained. Care should be taken that the shoulders are not raised above a horizontal position, or the flow of sap to that part of the bunch will be checked. I omitted to say that all Grapes intended for use during the winter ought to be most carefully shouldered up, as it adds to their keeping qualities by allowing more space for a free air circulation, which is one of the main preventives of damping off the berries during the winter or dull weather at other seasons. Commence to thin the bunch at the point first, cutting out with the point of the scissors all small or stoneless berries, the aim being to retain only such as those that promise to swell evenly together, which alone renders a bunch of Grapes perfect. It is difficult to say which berries require cutting out, and which ought to be left. A thinner who has had some experience will tell at a glance which berries will swell to their full size. The stalks which appear rough and strong are those which carry the finest berries. Those soft stalks which appear weak and bend with the weight of the berry will not produce large berries; it is often found later on that these are imperfectly fertilized, and, in consequence, are stoneless and unable to swell to full size. In the case of Black Hamburgh, for instance, the bunches are made up of smaller branchlets, many consisting of three berries at the point of each. As a rule, the one at the point should be left, cutting out one on each side. No berry ought to rub against its neighbour at this stage. Every one ought to have a clean space to swell in. The top or shoulder part of the bunch should not be thinned quite so severely as the point of the bunch, because more space is allowed for the berries near the main stem, where it joins on to the shoot. The bunches require a second thinning, or at least they need examining, just before colouring commences, to make sure that none of the berries are jamming each other. Some few may not be swelling evenly. These should be cut out where they are at all thick, especially in the middle of the bunch.

STRAWBERRIES BY POST AND RAIL.

LARGE numbers of Strawberries are grown under glass as well as in the open only to be spoiled in transit to their ultimate destination. Faulty packing is principally responsible for most of the failures to travel, and this I assert after having made every allowance for the softness of the fruit and the rough handling to which the boxes containing it are subjected. Some varieties undoubtedly travel much better than others, the fruit of Sir Joseph Paxton and Vicomtesse Héricart de Thury being among the firmest, while none are softer than Noble, yet I have had two complimentary notes early last season as to the excellent manner in which the last named arrived at its destination. One box was sent by parcels post, the other by rail, and seeing that they had to travel not less than 120 miles it was a fair test of skill in packing. As it happens, however, the distance to which the fruit has to be sent would not, in my case, nor ought to in others, make much, if any, difference in the method of packing. If Strawberry will not travel well to a great distance or over a period, say, of about twenty-four hours, it is very doubtful indeed if they would turn out satisfactorily at the end of a dozen miles, and after only an hour or two in the box. It is next to useless to write or print "fruit" or "this side up with care" on the boxes. The packing must be done well, and then the boxes, if almost immaterial whether they are handled carelessly or not. Where the

inexperienced often err in using boxes either too flimsy or too large for the fruit to be safely packed in. What is wanted are fairly strong shallow wooden or tin boxes that will not crush if a moderately heavy weight should be packed on the top of them. Cardboard boxes are not at all suitable for the purpose. They are too deep, too narrow, and too fragile, and the trifling saving in postal or railway charges effected by using them is often at the expense of the valuable contents. When, owing to the crushing of the fruit and consequent dissolving of the cardboard, only the lid or rather more of the original box and the label reach their destination (postmasters will corroborate my assertion that this often happens), the consignees, at any rate, must wish that less risky methods of packing had been resorted to. It falls to the lot of only a few packers to be in a position to order what light boxes they may require, but if it is not possible to have suitable boxes made, they can yet be bought very cheaply from the nearest confectioner or grocer, drawing this line at soap boxes. Nothing answers better than chocolate boxes, a common and useful size measuring 14 inches long, 9 inches wide, and 2½ inches deep. Should these be too large they can easily be shortened, though if a bundle of small boxes were bought from a confectioner at one time, suitable small sizes are usually included. This kind of boxes may safely be sent by either post or rail, and, in addition to using them, I have also several strong tin boxes made especially or principally for packing Strawberries in. These are 12 inches square, and, allowing for the rim on the lid, 2½ inches deep. The largest fruit grown can be packed properly in these tin boxes, each of which holds about 2 lb of Strawberries. Either these or wooden boxes to hold a single layer of fruit are preferable to any "nesting" arrangements—that is to say, cases that will hold several trays or drawers. Nor do I advise anyone to have boxes made, or to use any already in stock, with separate divisions for each fruit, but rather the contrary. Not only are divisions quite uncalled for, but it is impossible, as a rule, for the fruit to be packed in and got out of these without being damaged in some way. Strawberries can easily be prevented from bruising each other, especially if good use is made of the lids of the boxes, and it is the assistance derived from the latter that largely influences me in favour of shallow boxes, tying several of these together if need be, rather than resorting to the use of trays or drawers. Naturally, the

CONDITION of the fruit when packed has much to do with the way in which it will turn out again, and, it is almost needless to add, fruit that is dead ripe or quite soft is of little value in any case. Better the fruit be slightly under-ripe than over-ripe, not merely on account of its travelling better, but also for the important reason it is far more likely to be of good quality when eaten. It may not be possible or advisable to pack the fruit directly it is fit, and there are times when it has to be kept for several days in order that enough be available for one or more large dishes. This difficulty is best obviated not by transferring the plants to a cool house or room, this frequently checking the swelling of later fruit and not preventing the softening of the more forward, but by gathering the fruit directly it is coloured, laying it thinly in a box lined with either wadding, Moss, or wood shavings, and covering with tissue paper. If this box is placed in a cool, dry room or cellar the fruit will keep well nearly or quite a week. In any case it is advisable to either gather the fruit when it is cool and dry, or else to keep it until it has cooled somewhat prior to packing. In anticipation of packing, gather a sufficiency of large young Strawberry leaves, or better still, it obtainable, either leaves of forced Kidney Beans or young Lime leaves, the former to be flagged or softened somewhat by being placed in tin sunshine or near to hot water pipes, but the others are usually quite soft enough. Select a box or boxes that will about hold all the fruit to be packed, and woad linn thence, sides as well as bottoms, with either a sheet of cotton wool, dry springy Moss, or the softest wood shaving or "wool," the latter being separated from the heap long enough to get rid of any woody smell that may be attached to it. The fruit must not come into contact with either of these substances, and in order

to keep them perfectly clean and sweet, cover the packing material with tissue paper; wrap each fruit so that it shall rest on and be divided by it, in a single flagged or soft leaf or portion of same, and lay the whole in closely, flatly and neatly. They can be fitted together so as to present a pretty appearance. Invert more of the leaves or young Vine leaves over the fruit, cover with paper, and on the top place a layer of packing material. On the latter the lid should shut down tightly, I might say very tightly, this effectually preventing any movement of the fruit, no matter which way upwards the box may be turned, everything in fact depending upon this pressure. Never drive a dozen nails into a lid where one or at the most two small ones would suffice, getting them out again spoiling the lid and not unfrequently some of the contents of the box. String the boxes properly and they will not be tampered with. The worst ordeal Strawberries by post can be subjected to is a long journey into the country on the back or in the bag of a postman. The same methods should be resorted to whether the Strawberries are to be packed for private use or the markets. In the latter case careful packing may make a very great difference in the prices obtained, damaged fruit being next to worthless in the markets or fruiters' shops. I hold it to be unwise to mix large and small fruit together whether they are intended for sale or otherwise, one simply spoiling the appearance of the other, and if small ones are sent let them go as much as possible for use in the kitchen. Separate the

are infested with red-spider on the leaves nearest to the main-stem are weakened for the next year's crop of fruit; the leaves in question are those from which the Vine draws its supply of food mainly. If the spider attacks the Vines before the berries commence to colour, and is not checked at once, it is impossible for the Vines to finish the crop of fruit in a satisfactory manner. There are several methods practised of checking the spread of the spider, such as making the hot-water pipes as hot as possible, and then cover them with sulphur and water, made into a thick paint. The frames of the sulphur are thrown off and fill the house, which is kept close, thus, as is supposed, suffocating the spider, but in the majority of cases this is only half effected. Often the cura is worse than the pest, as the foliage is burnt with the sulphur fumes which seriously checks the Vines. Some growers sponge the affected leaves with soapy water or Tobacco juice, but I have not much faith in this plan, as the remedy is generally only partly successful and there is a risk of disfiguring the berries in the operation, which of course would spoil them for exhibition purposes. A very good remedy, where the bunches are not required for exhibition, is to thoroughly syringe the Vines every night with clear water. The best of all remedies though is dusting the parts affected with sulphur, which, if carefully done, not only checks but exterminates the pest entirely. Upon the first sign of the presence of the spider on the underside of the leaves, place some sulphur, that of a brown colour is best, in an ordinary distributor, hold the affected leaves in the left

The insect may be destroyed in the following ways: By catching the moths, which are of considerable size, measuring sometimes 2 inches across the wings, which are white with various black spots on them, arranged more or less in lines; the bases of the upper wings are yellowish, and there is a band on the wings also of the same colour. They fly by no means rapidly. In the winter any dead leaves attached to the bushes should be carefully collected and burnt, as well as the leaves which have fallen, and any rubbish which may be under the bushes. The caterpillars may be picked off the bushes in the spring, and may be shaken off, or the leaves may be well syringed with 10 lb. of soft-soap, the extract from 6 lb. of Quassia, and 100 gallons of water; or the trees may be dusted with hot lime, sulphur, or soot when wet with dew. Make the ground under the bushes firm and smooth, so that any caterpillars which fall during any of the above operations may be easily seen and killed. These washings, &c., will equally apply to the grubs of the Saw-flies. The Saw-flies are too small and inconspicuous to make it worth while to try and catch them. The grubs when full grown make small cocoons about two inches below the surface of the soil, which may sometimes be found in large numbers close together. After an attack in the winter the soil under the bushes should be removed and burnt, or buried at least 6 inches deep. This if properly done would insure your bushes not being attacked again; but unfortunately the Saw-flies may come from your neighbour's garden, but if every one in a large district would agree to carry out this plan this pest might be almost "stamped out."—G. S. S.

3753.—**Vinery.**—The size of the house must be governed by the requirements from it in the matter of Grapes. The Vines should have a space of 3 feet between them. This will act as a guide as to the length of each vinery. As the ground runs east and west a lean-to vinery would obtain the most sun and be the most suitable form for the site. Span-roofed vinerias are the most economically built, but they should run north and south, thus each side would obtain an equal share of sunlight. In the case of a lean-to vinery, if the position is not too much exposed to north and easterly winds what is known as a three-quarter span is a good form of house to erect. Additional light is obtained through the glass which forms part of the back. A house 27 feet long will accommodate eight early Vines or seven late ones, the latter require rather more space than the former on account of the growth being a trifle stronger. The width should not be less than 16 feet; height from floor-line to ridge, 12 feet; height of front lights, 1 foot 6 inches; length of the back lights, 3 feet; and height of the back wall, 11 feet 6 inches. If a plain lean-to house is preferred the back wall should be 13 feet high; height of the front, 4 feet; width, 15 feet; the length according to requirement. The inside of the vinery should be so constructed that a border 3 feet deep can be made—2 feet 3 inches for soil, and 9 inches for drainage. The front wall should be built on arches to enable the roots to run into an outside border 10 feet wide. The Vines ought to be planted inside the house, 15 inches from the front wall. Provision should be made for heating the house efficiently. It is false economy to limit the supply of hot-water pipes; where there are too few they have to be made so very hot to maintain the necessary amount of heat that it is injurious at times to the tender foliage; besides, quite as much fuel is burnt in heating the fewer pipes. If the Grapes are required to be ripe in July six rows of 4-inch pipes are not too many in a house similar to that just described. Five rows of the same size would be ample for the lean-to vinery. For late Grapes one row of pipes less in each house will suffice.—S. P.

Span-roofed houses are the most common nowadays. Lean-tos are very well when there are garden walls already in existence to build against. If you look round your neighbourhood, including Worthing, you will pick up a lot of useful information before you begin to build. Have the houses as large as possible for Grapes. One wide house is better and cheaper than two narrow ones.—E. H.

Span-roofed houses, running north and south, is the form most suitable for vinerias in such a case as yours; but as your ground is only



A group of English grapes. (See page 164.)

extra fine from the medium sized fruit, and in the markets the former or the consignment will sell very much better accordingly. W.

RED-SPIDER ON VINES.

Of all the insect pests that trouble the Grape cultivator, none are so difficult to get rid of, or do so much damage to the present and future crops, as this insidious pest. The first indication of the presence of red-spider on the Vines occurs on the leaves nearest to the main stem on any part of the Vine; sometimes it is over the hot-water pipes, and at others at the extreme point of growth. In the former instance the cause is very often attributable to the persistent dryness of the atmosphere above the pipes, caused by overheating them, and a lack of moisture in that particular spot, both on the surface-soil and about the hot-water pipes. A warm, dry air is a sure precursor of red-spider. When the Vines are attacked from the point of growth, the cause may very often be traced to the presence of already infested plants being placed in too close proximity to the Vines, such as Strawberries or French Beans, or indeed almost any other plant that is subject to attacks of this insect. A shelf situated in this part of the vinery is a favourite site for such subjects as those named, and one very often seized upon by these with but a limited space at command, but with much risk to the Vines themselves. Upon a close examination of the leaves the presence of the spider will not long remain in doubt, and if steps are not taken promptly remove the infested plants. The difficulty will increase almost daily. Vines that

hand and with a few sharp puffs from the distributor cover the leaves with the sulphur. Should a little sulphur lodge on the berries a few sharp puffs of breath will dislodge that without injury to the berries. Of course, great care is necessary in handling the leaves among the bunches, but with care there is really no trouble in this. The Vines most generally affected with red-spider are Muscat of Alexandria, Madresfield Court, and Black Hamburg. S. P.

3669.—**Stopping a Vine.**—Do not wait until the Vine is in flower, but stop every shoot at two or three leaves beyond the bunch, and never allow more than two leaves to remain, as I find that the berries swell up and colour just as well as if the shoots are allowed to extend further. The lateral shoots must be pinched out as they form, so that the flow of sap is concentrated over the leaves and branches. When Vines are doing well several shoots will push out together from the main stem. Only one must be left, selecting that which bears the best bunch.—J. C. B.

3681.—**A plague of caterpillars.**—Three quorists ask about Gooseberry caterpillars. I may as well answer all three in one letter. Gooseberry and Currant-bushes are frequently stripped of their foliage by the caterpillars of the magpie moth (*Abraxas grossulariata*), and the grubs of the Gooseberry and Currant Sawfly (*Nematus grossularis*). The caterpillars of the magpie moth pass the winter in curled-up dead leaves, which are often attached to the tree by a silken band of silk spun by the caterpillars. Under the short leaves fallen from the bushes,

40 foot wide you are limited in the length. Supposing you make the houses 30 feet long, that will leave 10 feet for a roadway. A width of 18 feet gives a fairly long rafter, and at the same time provides ample internal space. By all means have the houses heated. Two rows of 4-inch pipes along both sides and one end will be sufficient piping to keep out frost.—J. C. C.

CROWDED PEACH SHOOTS.

In matters of Peach culture, as in most others connected with gardening, there can be no hard and fast rules laid down, but in a general way if the shoots are left or laid in during the winter, training at from 4 inches to 6 inches apart, they will be quite near enough, and in doing this, or rather before, in the pruning, an eye must be exercised to leave them that they may cover all space on the wall, and have no waste of room. Starting with a young tree, the way to manage when it is received from the nursery is to look over or examine the head, and if there be a centre shoot it should be taken out close down, using a keen-edged knife for the purpose. This throws the middle open, which in the case of all trees that are intended to be fan-trained is the thing to do, as the sides can then be filled easily, the growth being forced in that direction instead of upwards. Shoots may gradually be carried from the two upper branches and the wall covered in very quick time, or a space of 100 foot square in two years. I have done this repeatedly, and am never satisfied unless a tree grows to that extent, but then I never get back, which I regard as a foolish practice, as when carried out the tree operated on is at the end of the first year at about the same stage as when brought in, it having made as much growth as had been out away, and many gardeners then shorten again, thus wasting precious time and undoing what the tree had done. If one enquires the reason for this mutilation, he is told it is to make the plant break back; but who ever saw a healthy young Peach, Plum, Pear, Cherry, or what not that will not, or does not, start all its buds if planted properly and at the right season? It stands to reason that the more head a plant has and the greater the leafage, the more roots it forms, the more quickly it increases in stem and branch and becomes established. This, I think, is evident, and the less of a knife a young tree has the better, and instead of cutting I advise all shoots to be laid in full length and an equal number on each side. These, trained regularly at an equal distance apart, form the frame, and give a fair start. In the spring comes the disbudding, and then a little judgment is necessary to decide on which shoots to leave, but all should be situated on the top side of the branches and well placed at a

SUITABLE DISTANCE APART, and others rubbed out (unless needed for spurs), when those left will grow away and should be so trained that they form no elbow, which may easily be prevented by giving a tie near the base so as to keep that part somewhat close to the main stem, and more in line with it. The after-training consists in leading each shoot on in its proper course, and taking others from them on the upper side the year after, till the wall space or trellis is filled with the right number of branches. If these are of Pear, Plum, Cherry, or Apricot, of course they will have spurs, as instead of rubbing out or disbudging, as in the case of Peaches and Nectarines, the shoots should have been kept stopped by pinching during the summer, which then forms the spurs. We now come to the fully grown or fruiting trees, and now is the time to be at work at them, as directly Peaches or Nectarines are set, thinning or disbudging the shoots should commence at once, but be carried out piecemeal, a little one day and so on the next till the job is complete. If the pruning and laying-in have been as mentioned, all the shoots necessary to be saved will be one at the top and one at the base of each shoot, the latter, of course, on the upper side so as to be close with the wall or flat with a trellis. The only exception to this rule of disbudging Peaches and Nectarines is in cases where a young branch is extra long; then another shoot may be requisite midway, or if it should happen that there is a bare space, that must be provided for, and a shoot or shoots left to fill in. As soon as these get 2 inches or 3 inches long, they should have a tie run round them and the branch they emanate from, and be kept straight and

nearer together; otherwise there will be what is termed a shoulder or ugly bend where they start. The tie obviates this and makes the branches lie flat and run off as they should. With pyramide and hush trees grown in houses, the tying at the base is unnecessary, but the disbudging should be carried out in much the same manner as when trees are trained, and no more shoots are left than are absolutely requisite. Some adopt the double system of young shoots and spurs, and then stopping comes in. If one has a very light, roomy structure, the growing of hush trees has many advantages over those trained, as they are far more natural, the leafage is fully exposed, and there is not half the labour and trouble involved in managing and looking after the trees. I have a span-roofed house filled with Peaches on one side and Nectarines on the other that are as free as Willows and will give much more fruit than if they were on trellises. S.

3726. — **Caterpillars on Currant-bushes.**—Heliothrips powder, either applied dry or mixed with water and syringed on the bushes, will be effectual. Soap-and-a strong solution of soft soap and water with a dash of paraffin in will clear them off in a couple of dressings. Use the soap and water at the rate of 2 oz. to the gallon and a half of water, add a wineglassful of paraffin to the same quantity, and use it warm.—E. H.

— You will find an answer to this query in GARDENING, May 13, 1892, page 140.—C. T.

3778. — **Treatment of Vines and Pines.**

—Your Vines are evidently out of condition at the roots, or else they have been subjected to too much heat which caused the bunches to run out. Sixty-five degs. to 70 degs. by night is too much warmth for Vines that are in a weakly condition and which have not formed their bunches. The bunches would not, however, have run out and withered away if the roots were in a healthy state. You had better lift the roots and replant them in a new border early next October. Meanwhile, give the house plenty of air, and keep the foliage free from red-spider by damping down the floor three or four times a day, and syringing it well of an evening. Fruiting Pines should have a day temperature of 95 degs. by sun-heat, and 70 degs. by night, the bottom-heat should not be less than 80 degs. Up to the time the fruit begins to change colour put one ounce of guano in every gallon of water you give them. Damp the surface between the plants twice a day, and if the leaves are near the glass use a thin shade in very hot weather.—J. C. O.

3735. — **Treatment of Vines from cuttings.**

—Presuming that the cuttings were inserted singly in small pots, and that these are nearly filled with roots, a shift into pots 8 inches in diameter will be required; in these the full season's growth will be made, and the Vines in the early part of 1894 will be ready to plant in their permanent quarters. A compost of three parts sbrly loam to one of partly-decayed horse-manure, a sprinkle of bones (fine ground), and sufficient charcoal to keep the whole porous, will grow excellent Vines. Restrict the growth to one stem, pinching the lateral shoots in above the first leaf. In this way the whole energy of the plant is concentrated in the single cane, the bud at the base of each leaf is nurtured and rendered plump; in time these basal eyes will produce bunches of Grapes. When growth is being made freely abundance of water at the roots and overhead will be required. Stand the plants in a warm corner of the greenhouse, as near to the glass as possible, where abundance of light will be obtained.—S. P.

Early Strawberries.—It may interest the readers of GARDENING to know that on the 24th May I gathered two dozen ripe Black Prince Strawberries from a wall border, which I planted last September, where they have had no protection.—R. W. H., *Ringwood, Hants.*

The Parrot Tulips.—Amongst the strangest of flowers are the Parrot Tulips, which are in full bloom early in May. They are later than the ordinary Dutch kinds, and seem to be getting more popular in gardens. A few bulbs in a small garden are of much interest, but the full splendour of the flowers is revealed in the mass, where the bulbs are planted thickly to make a surface of colour. The Parrot, or Dragon Tulips, as they are sometimes called, get their popular name from the similarity of the segments to the beak of a Parrot. They are of

very quaint shape, and the colours are remarkably rich, crimson, gold, and curious mixtures, crudo contrasts, and their bold, ungainly size adds to their curious aspect. In a small garden I saw a bed of them which had a brilliant appearance; and, although there are named kinds the mixtures are quite distinct and quaint enough.—C. T.

ENGLISH IRISES.

Few flowers in the early spring are so welcome, so beautiful, or so delightfully fragrant as the reticulated Iris and its varieties, and although it is with the greatest difficulty kept alive even, in some districts so strong has the love for this beauty grown, that people who cannot grow it out-of-doors manage to have a few pots for the conservatory, and for such a purpose it has few equals. The old idea of cultivating these bulbous Irises as we do Squills and Meadow Saffrons has long since exploded. They require frequent lifting, and the better they are stored and drier the greater will be the success. Our summers are too cold and wet to leave such bulbs in the ground, and covering over with glass frames is not nearly so effective as lifting. Another practice which tells against their successful culture is early planting; these bulbs should never be planted before late autumn or even mid-winter. In the first place, they have a better chance of being thoroughly dried, and in the second place, little or no leaf growth is made to be destroyed by the severe frosts in winter. They should be encouraged, however, to make root growth, and this will be greatly facilitated by a covering of leaves or loose Pine branches in hard, frosty weather. This applies more or less to all the bulbous species, and even in the case of the English and Spanish race of bulbous Irises I have seen many fine beds and groups destroyed by frosts, the result of too

EARLY PLANTING causes the foliage of the Spanish Iris to brown and wither at flowering time, and this may be to a great extent avoided by planting in the latter end of September or October instead of in August. Both the Spanish and English Irises are more largely grown in gardens than any of the other species, and the perfection reached by raisers of these new varieties in the marvellous colours and markings, and the curious blends and blotchings entitles them to a first place amongst hardy hulks. They are not only more easily grown, but they are less subject to disease than, for instance, the forms of *I. reticulata*, which simply refuse to grow at all in some localities, and although this disease may be somewhat retarded by lifting and careful storing, it is very difficult to eradicate, and in wet seasons carries the hulks off by the thousand. The English Irises, of which a fine group is illustrated on page 163, are more robust and withstand the rigours of an English winter and wet summer much better than the others. The name English Iris seems to have been applied to *I. xiphoides* in the very early days of hulk culture. It is a native of the Pyrenees, with a very limited distribution, and it appears that the hulks were introduced from there to Bristol, and then to Holland, where it was called English Iris. It is a most charming summer hulk; the intense blues, the pure whites and the various markings and blotching of the flowers are extremely effective in groups and never fail to attract attention. There is a curious form called Thunderbolt of a dusky dull colour, which seems to have been well known to Parkinson in the old days. It is said to be a hybrid between the English Iris and *I. filifolia*, but of this nothing very definite is known. It rarely seeds in cultivation, and is grown chiefly out of curiosity. *I. xiphion* (the Spanish Iris), from Spain, Portugal, and Algiers, is one of the finest and most variable types of bulbous Irises. It includes all the colours of the rainbow, some of the varieties being very remarkable from the curious blendings of these peculiar shades. They may all be obtained readily of any hulk merchant for a few pence, and in a few years large groups may be had, so quickly are they increased from offsets. They may also be raised from seeds. K.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruits and vegetables for drawing. The drawings so made will be engraved in the best manner, and will appear in due course in

THE KITCHEN GARDEN.

CARROTS AND THEIR CULTURE.

CARROTS require a deep, light, warm soil, well trenched and previously well manured. Sowing must be effected in dry weather, for, should a shower happen soon after the seed is in the ground, the crop will, in most cases, be a failure if not sown again immediately. Drills ought to be preferred to broadcast sowing, there being no possibility with the latter of



Carrot "Long Red."

attending to the crop conveniently. The French Forcing and the Scarlet Horn Carrots are the best for forcing, but the first is to be preferred. Prepare mild hot-beds 2½ feet high in November or December, and 1½ feet or 2 feet in January or February; put on the frames, cover the bed with 5 inches or 6 inches of rich soil or mould, and, as soon as the whole is sufficiently heated, sow the seed broadcast, cover with half an inch of mould, smooth the surface, and cover the glass with mats until the seed comes up. Should the interior get dry give a slight watering, but be careful of damp. When the plants have four or five leaves thin them half an inch apart. Admit air as often as the temperature will allow of it, which will give strength to the seedlings. Take care the heat does not exceed 60 degs. during the day and 50 degs. at night, which may be easily regulated by tilting the glass. In the case of sharp frost covering with mats is preferable to artificial heat. Shading, if needed, must not be omitted. Sowing in November, if carried on by practical men, will produce fine young Carrots at the end of February, which will last through March and April. Subsequent sowings—in December for March to April, in January for April to May, and, lastly, in February for April to June—must be attended to as required by market gardeners; but in private gardens the first bed should be made in November and the second in January. These will afford an ample supply until new open-ground Carrots are fit for use. Where frames are not available prepare, at the beginning of February, in some warm corner, a bed of hot dung mixed with leaves, covered with 4 inches or 5 inches of mould; sow the seed and protect with mats supported with sticks or other apparatus. As soon as the seed comes up remove the covering every day as frequently as the weather will permit, and the crop will be ready from the end of April to that of May. Parisian market gardeners mix seeds of Radish and Lettuce with those of Carrots, the former being ready for use before the Carrots, which are then left to produce a second crop, a practice not advisable, not that of planting Camellifers amongst forced Carrots.

OPEN-GROUND CULTURE.—For the first crop sow in February, on a warm, dry border, the Scarlet Horn Carrot, in 3-inch drills; cover the seed with half an inch of decomposed mould; when the young plants have formed a few leaves, clear off the weeds, and thin them to 1 inch or 2 inches apart, hoeing and watering as required. The crop should be ready by the end of May, and will last until the general crop comes in. In June sow the same kind of Carrot again where small roots are preferred. General crop: Intermediate Scarlet, Intermediate Stump-rooted, and Intermediate Nantes, are the three best varieties for general crops. Sow them from March to May (the later month for winter Carrots) in well-prepared soil, in 9-inch to 12-inch drills, half an inch deep. As the Carrots make their appearance, hoeing, weeding, watering, and thinning them to half an inch apart should be duly attended to. So soon as the plants attain the size of a lead pencil, thin them to 3 inches or 4 inches apart without hesitation. Thinning generally receives too little attention in every country; and the Carrots, crowded when young, are left to be taken up for use when they have attained sufficient size. In most cases, the ground gets dry and hard, and thus prevents the lifting of the roots, which are then left until the autumn, when only small, useless Carrots are the result. Autumn sowing: In August and September select a warm border. Sow French Forcing or Scarlet Horn Carrot, as for the early crop. The roots must remain in the ground the whole winter; but, if they are well protected and the bed is covered with an inch of mould, fine little Carrots will be ready from February until May. Field sowing: No roots succeed better and are more easily cultivated in the field than Carrots. Select a rich soil, deeply trenched, and previously well manured. A little addition of salt will produce excellent effects. Sow from March to May, in from 10-inch to 15-inch drills, keeping all the plants 4 inches or 5 inches asunder, according to the variety. Weeding and repeated hoeings will ensure an abundant crop; but be careful in choosing dry weather for such operations. B.

LATE PEAS.

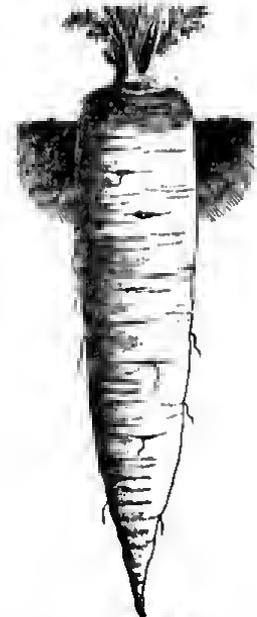
IN May it is necessary to make arrangements for the supply of late Peas. As the term late may be somewhat misleading, I may state that I refer to those which are to succeed the general crop, and to give a supply till out down by severe weather. In some gardens, especially in wet, damp positions or on heavy clay, it is difficult to get late Peas, so the pods do not fill well, the haulm being attacked with mildew. In such places special preparation of the ground is necessary, and at no time of the year can this work better be taken in hand than in the early spring months. Mildew is equally troublesome on thin light soils, as, owing to the roots often suffering from drought in the months of August and September, a collapse takes place. I do not attach so much importance to the variety as to the preparation of the soil or trench. Though such kinds as No Plus Ultra are difficult to beat for the latest crop, there are others more useful on account of their taking up less room and not requiring such tall stakes. Of late years considerable attention has been paid to the raising of new Peas, and though we have not gained much as regards earliness, there is considerable improvement in the character of the early Peas, as there is more of the Marrow character in them than was the case years ago. This is a decided gain, as the small white-seeded varieties were soon over. Varieties with the Marrow blood in them are more lasting, yield better, and come in nearly as soon as the white-seeded varieties. The only difficulty is that they are not so suitable for heavy, wet land as the early white kinds, as

MARROW PEAS do not germinate so readily as round white ones, and when sown too soon in cold, wet soil they often decay. I have named the early varieties in this note on late Peas for several reasons, the most important being that they are often recommended for late sowing. I have tried them, but they possess less value than some of the later and dwarfier sorts. The first varieties are invaluable, and I can strongly recommend them for sowing in June or July for the late supply, as they take up little room and are more readily protected than taller kinds.

For sowing for a late crop, that is to give a supply through September and October, one of the best Peas lately introduced is Success. This I tried last season, and as the autumn was very wet, I was much pleased with the result, so I had good Peas till the end of October, and they suffered little from mildew. The advantage of growing a Pea 3 foot or 4 feet high is seen in the space occupied, the convenience of using shorter stakes, and the smaller amount of moisture required. I used a 3-foot Pea called Sturdy for some years for late cropping, and I do not think it can be beaten. It is not every one, however, who can give the time and space to grow such late Peas. When grown so late they do not give a large return; still, a good dish of Peas in a country house during the month of November is much appreciated.

IN THE CULTURE of late Peas, so I have previously stated, special care is needed, and here the gardener with plenty of manure has an advantage. As far as I have been able to judge the one thing needful for late Peas is plenty of good decayed manure to give the haulm the necessary support when a spell of dry weather sets in. In cold, wet positions the need of a liberal supply of manure is equally necessary, as often when tall Peas are grown and in rows close together, the tops in a wet season are scarcely ever dry, and the cool, moist weather causing an abundant haulm, the roots cannot supply the amount of nourishment required. The early crops do not suffer so badly, because the sun is less powerful and the earth not dried up so readily. In dry, light soils the value of manure is more necessary, so that at this season to get good results from late-sown Peas trenches similar to those for Celery should be employed. I advise that they should be wider than when a single row of Celery is planted. I like a 15-inch trench, as this allows of a good amount of manure. The manure should always be thoroughly decayed, and on light soils I have used cow-manure to advantage, as it is cool and retains the moisture. From 4 inches to 6 inches of manure is none too much. The

MANURE should be dug in, the Peas sown on the top of the soil, and some of the soil thrown



Carrot "Intermediate."

out used to cover the seed; this will reduce the depth of the trench. A deep trench is not wanted, only sufficient to retain the moisture. Tall Peas may be topped at 3 feet or 4 feet, so that tall stakes are not necessary. If possible, allow plenty of space when sowing between the rows, as the ground can be cropped with other vegetables, such as Camellifers or rows of late Celery. This latter when allowed room does well, so the Peas give a slight shade when the Celery is first planted, and the space between the rows gets thoroughly cultivated by deep digging and manuring. The value of frequently

giving a good supply of moisture to late Peas is soon seen by the vigour of the haulm. This is required in quantity in August, and even later if September is hot and dry. Those who can flood the rows with a hose will find it the best system, and it is none too often to soak the trenches twice a week in dry seasons, it being a good plan where there is a plentiful supply of moisture to allow the water to run slowly, changing the position of the hose occasionally. It is of little benefit to apply large volumes of water at long intervals, as once a check by drought is given mildew soon attacks the Peas. In wet land less moisture is needed, but feeding is equally necessary for late crops. It is also a good plan to mulch the space outside the sticks and as close to the roots as possible with litter or manure, so as to retain the moisture in the soil. This is more necessary on gravelly soils; a mulch about three inches deep will save watering. This sowing is also necessary to allow a robust growth; also a good position on an open quarter not shaded by trees. The Peas should be earthed up and staked before the growth is far advanced, as growth is very rapid as soon as the roots reach the manure in the trenches.

G.

MUSHROOMS IN SUMMER.

During the best of summer Mushrooms are not needed as broilers, but for flavouring they are often in request. A close, muggy atmosphere, such as will be present in places where this esculent may be cultivated with success throughout the winter months, is not suitable for the production of summer crops, unless the holding is so constructed as to enable it to be kept as cool as circumstances will permit. The best holding I ever saw for the production of Mushrooms in summer was a thatched-roofed structure behind a north wall, and which had free ventilation. Not that an arid atmosphere was encouraged, for mats were hung in front of the windows and doorway. These and the thatched roof were drenched with water through a hose; consequently cool and genial surroundings were promoted. A very good position would be an open shed facing north, hanging mats over the front during the day and throwing open during the night. The roof being thatched, a cooler and more equable temperature can be maintained than could otherwise be secured if the roof was of slate. Often a very cool site may be secured at an angle of a north and east wall, and if partially overhung with trees, all the better.

A COOL CELLAR, if not too confined, is also suitable for a summer bed. During the winter these underground cellars are well adapted for Mushroom growing on account of the genial surroundings, the temperature also being considerably lower than in a structure above ground. Many people are led away with the idea that ridge-shaped beds formed in the open air are good for summer crops. This is a very erroneous opinion, for they become so hot and dry, that what Mushrooms are produced are of a very unhealthy description, and, in fact, would be discarded as useless. It is an old practice, but, nevertheless, a good one, where the roots of Rhubarb are surrounded with manure, to insert pieces of spawn in May, in which position the spawn commences to run and some useful Mushrooms are secured. Many gardeners no doubt could point to success with Mushrooms during the summer months through quite accidental means. I once paid a visit to a gardener during the month of July, and he showed me a fine bed of Mushrooms in his Mushroom house, which was a thatched structure behind a north wall. This bed was made up during the early part of the year for a spring supply, but the Mushrooms did not appear at the time expected. The bed was, however, left untouched, and a plentiful supply of good produce at the time stated was obtained. If coolness is one of the essential points in securing a summer supply, moisture is also requisite. It would pay even now to give partially-exhausted beds a thorough soaking of water impregnated with salt. Diluted manure water I have also used with success, this assisting in re-storing the material with ammonia, a very desirable element if Mushrooms are expected to thrive.

Insects are troublesome at all times, but never more so than during the summer months.

It must be remembered that these very cool sites, which are selected and also kept correspondingly moist, are very apt to harbour slugs, which quickly devour the young Mushrooms. Woodlice are the greatest enemy to contend against. The well-known bait of boiled Potato enclosed in a small flower-pot with hay is a good plan for capturing these, but it must be remembered that the Potato is only an alluremant, so the flower-pots must be examined daily where these marauders are known to be present in large numbers. The practice of laying two rotten or decaying boards together in their haunts and covering with hay will attract numbers, which can then easily be destroyed. The surface of these summer beds should be lightly mulched with sweet litter—not hay, this being too close. If this be

REGULARLY MONITORED, it will assist in keeping away the flies. The Mushrooms as they appear must be pulled whilst in quite a young state, for it will be noticed that it is when they become old through being left too long that they become maggoty. It is easy enough to advise Mushroom beds to be made up in cool sites behind north walls to produce a summer supply, but it requires unremitting attention if Mushrooms worthy the name are to be produced. When forming open-air beds behind a wall I would advise excavating the soil to a depth of a foot or more, thus conserving the moisture in the material. Instead of thickly covering these beds with litter, as sometimes advised, and which I could never see the policy of, except during the early spring months, I place a thatched framework over the whole bed at the distance of 6 inches from the surface. If necessary a mat should be hung over this to assist in causing extra shade during the day. The old practice of inserting pieces of spawn in Vegetable Marrow beds at midsummer often results in good Mushrooms being secured, the shade from the Marrow leaves being just what is wanted. Spawn may also be inserted in Cucumber beds, and by the time the Cucumbers are ever I have known the surface of the bed to be "alive" with Mushrooms. A.

3756.—**Rhubarb for show.**—The ground for 2 feet away from the stems should be covered with partly-decayed manure to render the roots cool and to prevent the moisture evaporating from the soil. Liquid manures should be applied to the roots freely—at least, once in ten days a good soaking should be given. If the sticks are crowded pull out the weak ones and support the strongest to prevent their breaking.—S. P.

3760.—**Treatment of Cucumbers.**—The soil is evidently too rich for the plants. They will, however, soon grow out of their over-luxuriance. Give them nothing but clear water at the roots, and not too much of this—sufficient to prevent the leaves flagging, or red-spider will attack them. Do not allow the shoots to become crowded; all the main leaves should have sufficient space to develop fully. All sheets that are not near the roof, and therefore cannot obtain light, should be cut off as they are useless. Pinch out the points of all shoots above the first leaf.—S. P.

Big vegetables.—One cannot help noticing at shows that half the object is to get the various things exhibited as large as possible if a prize is in view. A Rhubarb, for instance, with stalks of abnormal size and coarseness is praised when well-grown medium examples are passed over. This is especially the case about cottage exhibitions; but I should not care to eat many of these productions, grown merely for exhibition, not for the table, and kinds chosen that are known to be of poor quality. This is quite a false system, and unfortunately is boldly encouraged by men who would not like to have these overgrown vegetables on their own tables. Rhubarb, Cabbage, Celery, and many other things we could name are invariably shown of huge size, and in the interests of vegetable growing this should not be permitted. Whilst, of course, the big things get prizes, competitors will continue to aim at size rather than quality. There seems, however, some change in the right direction, and a reaction against this system setting in.—C. T.

Dicentre eximes.—Perhaps someone who is GARDENING will like to know that this plant is very useful for planting

most other things, except Ferns, will not grow. I have it on a border facing north-west, raised from the ground level about a foot, but so much shaded by trees that it very rarely gets even an occasional gleam of the sun. Yet, notwithstanding its bad surroundings, this fine hardy perennial not only flourishes but produces many of its stately pink flowers. It is only growing in a common garden soil. Its fern-like foliage, added to its beautiful flowers, render it one of our most valuable and pleasing hardy plants.—V. P. B.

Verieties of the German Iris.—There are so many forms of Iris germanica, which is now freely in bloom in gardens, that amateurs must be puzzled to know which are the best out of the long list of kinds in cultivation. The following are all of good colour, not dull, and uninteresting, as is the case of many of the kinds in gardens. Very beautiful, of course, is the common German Flag, which has bold flowers of rich and striking colour. Aphylla var. Swerti, the standards white with veins of lavender; aurea, conspicuous for its fine yellow colour, the flowers of fine form, and handsome aspect; Bridesmaid, the flowers lavender, the falls with a white margin; and Celeste, which is perhaps the most beautiful. The flowers are large, rich lavender in colour, with a very delicate fragrance, and blooms with great freedom, whilst there is an orange beard to set off the soft lavender shade. Fiorentina is early; it is a beautiful Iris, and has almost white flowers, very sweetly scented, a good mass of it possesses much beauty. Gazelle, lavender and white, and Mma. Cheveu are two good kinds; the latter is largely grown for the market, and has an abundance of well shaped flowers, white, margined with lavender. A very handsome Iris is I. pallida dalmatica, the standards lavender, and the falls with a tinge of purple. This is one of the finest of the Irises, and a noble kind to mass together. Queen of May is a lovely flower. The standards are rosy-lilac, and the falls are of this colour also, but with yellow veins; an Iris that should be in every collection. Victorino, white and purple, and Xenophon, lavender and white, may also be recommended.—C. T.

HOUSE & WINDOW GARDENING.

3761.—**A house conservatory.**—You may have a number of interesting things in the conservatory—Polargoniums of all kinds succeeding well, and in the winter the plan may be kept gay by a good selection of Zonal varieties. Izoetes, and such things as Chinese Primulas, Cinerarias, and Cyclamens may be grown if you have a warm pit, but otherwise their culture will be difficult. Camellias may be grown against the walls or in pots, also Azaleas, and you may have in the summer plenty of Tuberous Begonias, Ferns, also such plants as the white-flowered Astilbe japonica, Chrysanthemums in variety for November and December, Cytisus racemosus, Dracocna indivisa, Fuchsias, Grovilea robusta (an elegant plant), Lachenalias (particularly L. Nelsoni, a vigorous hybrid with rich yellow flowers), Roebia falcata (a fine succulent, its flowers scarlet), Solanum capsicatum, better known as Winter Cherry, and the Streptocarpus, which are easily raised from seed soon thinned and just covered with soil. Put them in a light, warm corner, and prick out when sufficiently large enough to handle. Pot on, and in a comparatively short time you will get sturdy plants; they are very free, and the flowers exhibit considerable range of colour from almost white to beautifully pencilled forms. For climbing plants you could have Habrothamnus elegans, Lycopodium alba, and rosea, Passiflora, and the beautiful blue-flowered Plumbago capensis.—C. T.

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BEDS OF FLOWERS.

In a short time now summer-flowering plants will be put out into the positions for which they are intended, and a few notes on some happy contrasts of colour may be useful to readers of GARDENING. Of course, the plants are ready, or if not in stock orders have been given for them, as it is important to get them out as soon as weather permits.

TUBEROUS BEGONIAS are now one of the most popular bedding plants for the garden, and they seem to have been in greater demand since the last few wet summers, when the "Geraniums" (Zonal Pelargoniums) have run to leaf, and failed to make the garden bright with flowers. The Tuberosus Begoniae are also to my mind more interesting because less formal. During the past few weeks many queries have appeared concerning plants for small beds, and the Tuberosus Begonia is one of the most useful. The plant has improved greatly in habit, this being compact and free, the flowers appearing just above the base of deep-green foliage. The colours are varied, ranging from white to the deepest crimson, strong, decided, and making a bright display, used either separately or in shades of one distinct tone. Begonias are so striking that they require to be used with caution, and proper regard for contrast of colour. A very pleasing plant to use with it is the variegated *Dactylis*, which has graceful leafage, well coloured, and it grows freely in ordinary soil. The edging may be of Tufted *Pansies*, which are very charming bedding plants when used either by themselves or as groundwork to other subjects. I am now writing only for small gardens, as in larger places the arrangements of the beds are elaborate, although the same class of plants are employed. I much like a bed of only one variety of Tuberosus Begonias, or one leading colour—but this is, of course, a matter of taste. The time to put out Begonias is in the month when there is no fear of injury from frost. The soil should be partly light and plenty of water is necessary if the position is overdry, as Tuberosus Begoniae appreciate moisture and moderate shade. The

DAHLIA is another flower that is now used largely in gardens, and a good bed of either single, Pompon, show, the true Cactus, or the decorative makes a fine feature, as the plants are in no way formal. The Pompons comprise the best group, and if the reader is about to purchase, the best collection would be of about half-a-dozen kinds, if the garden is small, of course, and confined to White Aster, which has flowers of the purest white, and they are useful for cutting. *Comtois Von Sternberg*, the flowers very pale creamy colour, the edge of the petals delicate yellow, a neat and attractive flower; *Fairy Tales*, soft primrose, Gem, rich scarlet, well named, Northern Light, bright red, and Prof. Bergeot, magenta-crimson, very fine. These I like greatly, as they are very distinct, and not too large. A very fine bedding Dahlia is *Kissing Sun*. It is very compact in growth, and the flowers are of a brilliant scarlet colour, perfectly double, like the heat of the show blooms, and a good bed may be composed of the *Tom Thumb* Dahlias, which signify varieties of very dwarf habit, rising only from 1 foot to 18 inches in height. The plants may be got for about one shilling each, and this new section of Lilliputian Dahlias is likely to become much grown in the future. *Liliput* (pale coral-red colour, shaded with orange), *Miniature* (yellow), *Bantam* (deep red), and *Hoopla* (maroon), are a few of the best. It is better to confine Dahlias in small gardens to the Pompons, singles, and Cactus types. Of the latter very good are *Amphion*, which may be described as chrome yellow, touched with cherry colour, the old *Juarez* (not very free, unfortunately, but bright in colour and of good shape), *H. Cannell* (rich maroon, shot with a crimson tone, quite velvety in character), *Charming Bride* (white, the petals tipped with rose), *Mrs. Hawkins* (the flowers yellow, the petals at the tips of a paler colour), *Panthea* (of a distinct salmon-scarlet, very bright and effective), and Professor Baldwin (which is of a brilliant orange-scarlet colour). I do not care for the decorative class; they are too coarse, except *Henry Patrick*, which is very free, and bears large white flowers of much beauty.

THE *FUCHSIA* is rapidly becoming a popular

garden flower. It is, however, only of quite recent years that the plant has again become sought after for bedding, as for a long time it was never seen except in the greenhouse. But it must not be overlooked that the *Fuchsia* is a fine garden plant, and in the London parks much use is made of it in the various arrangements. The great point to get a good show of flowers in the open is to let the plants make as much of their growth as possible in the open, so that it becomes thoroughly well hardened, and a greater abundance of bloom is as a result produced. Soft, seepy grown plants, taken straight from the warm-house to the open ground, frequently out a sorry figure, as might be expected. In the autumn when they have finished blooming they may be taken up and put away in some dry place for the winter. Such varieties as the *Earl of Beaconsfield*, its flowers tubular, and quite of an orange tint, and the old *Tower of London* are very handsome in the garden, but any of the good strong growing varieties will succeed well under these conditions. The great point is to get the growth well hardened before the plants are put out. The

HERRAZON'S LOBELIAS I see with pleasure are now grown largely in gardens, and the chief kind is *L. fulgens*, which is best represented by such beautiful varieties as *Queen Victoria* and *Firefly*. These may be planted out now, and good strong plants will bloom well during the summer, sending up strong spikes of intense crimson flowers, made still richer by contrast to the deep chocolate leafage. A small bed of either variety, edged with *Ageratum*, makes a fine display, the two colours going well together. It is the usual practice to take up the *Lobelia*s in the autumn and plant them out in a cold frame in ordinary soil for protection during the winter months, as they are a little tender, and it is worth while giving this attention to them. Few flowers in their season are richer in colour or make a more pleasing picture—intense crimson against chocolate, a superb contrast of colour. If one cannot devote a bed to them, get a good clump on the border to make a rich effect. During very dry weather keep the soil moderately moist. The

NIGHT SCENTED TOBACCO (*Nicotiana glauca*) is a very beautiful plant for the garden. The leafage is bold and of good colour, and the flowers are carried loosely on slender stems, the colour being creamy-white; but they open fully only in the evening, when they exhale a very sweet fragrance. They gain in effect by being used in contrast to deep-green leafage, and will keep up a display throughout the summer. It is very easy to raise the plants from seed, and notes have appeared before in GARDENING advising this course; but established examples can be purchased, and it is worth while to get a few for the distinct effect they produce in the garden. There are a few of the better plants for making a small garden gay in the summer and autumn months, as they will, if strong when put out, commence soon to bloom, and not cease until frosts cut short their career, when they may be taken up and kept over for another year. All the varieties mentioned are good, and the only thing is not to delay sending in orders if this has not been already done. The quicker the plants are in the garden—when, of course, it is safe to put them out—the better, and the season of summer flowers is extended. C. T.

BEES.

SEASONABLE NOTES.

THE Bees have had a splendid time among the fruit-blossoms, and swarming is likely to take place very early this season. If sections and supers be supplied to strong hives in good time much surplus honey may be obtained before swarming takes place. The chief indications of swarming are the appearance of drones, crowding of the Bees at the entrance to the hive, and general restlessness. The old queen leaves with the first swarm, while the young queen which is to take her place in the hive is yet in embryo. Preparations are made for swarming about a week before it takes place by the Bees beginning to raise young queens. When the queen-cells are sealed the swarm prepare to leave the hive, as the young queens arrive at maturity in from twelve to seventeen days from the egg.

When actually swarming the Bees pour out of the hive in a constant stream in a great state of excitement. The swarm usually clusters upon a bush or tree near the apiary, where it remains for a short time, but if not soon hived the Bees again take wing in search of a permanent habitation; no time should be lost in getting them into a hive as soon as the cluster is formed. Diapatch in hiving swarms is important on account of the Bees becoming more irritable and difficult to handle the longer they are left unhived. The time of swarming varies a good deal, so much depending upon locality, the state of the weather, and autumn management. Hives well filled with Bees in autumn are always in a far more forward state in spring than those that receive no attention in the way of uniting, stimulative feeding, and so forth. It is not the heaviest hives that contain the most Bees. Hives that have but little honey in them in spring afford plenty of room for hatching brood, consequently the population then rapidly increases.

PUTTING SWARMS INTO FRAME HIVES.—The bar-frame hive that a swarm is to occupy should have the frames filled with clean, empty combs if possible, the queen being thereby enabled to commence laying at once, and much valuable time, which would otherwise be occupied in comb-building, is saved. When empty combs cannot be provided, comb foundation should be fixed in the frames, either in sheets or in strips 2 inches deep. The swarm having been shaken into a hiving-skep, and the skep left on the ground for a short time to enable the Bees to cluster—a stone being placed under the edge of the skep to enable the stragglers to enter—may then be carried to the hive the Bees are to occupy, and the Bees at once shaken out on to the top of the frames. A light quilt being placed over the Bees, they will quickly run down amongst the frames and form a cluster, or a cloth or newspaper may be spread in front of the bar-frame hive, bringing one end over the edge of the alighting-board, and raising up the front of the hive a little to allow free ingress, and the Bees thrown from the skep on to the sheet, they will quickly run into the hive. The stock from which the swarm issued should be removed to another part of the apiary and the hive containing the swarm put in its place. The day after hiving the swarm the frames should be reduced in number to the size of the cluster of Bees and the hive contracted by means of division-boards. Wet or cold days immediately after hiving greatly check the progress of new swarms, it is therefore important to feed daily during weather unfavourable to honey gathering.

MANAGEMENT OF SWARMS.—Should it happen that a swarm issues from a hive after having commenced work in the supers, the most advisable thing to do is to remove the section-cases from the hive, and also all brood frames but two, and place them in an empty hive, which close up with division-boards, and remove to a new position. To the two frames of brood left in the old hive add sufficient frames of foundation to fill up the hive. Place queen excluder upon frames and return the section-cases, wedging up the hive a little in front. Having hived the swarm, shake it from the hiving-skep down in front of the parent hive, watching to see the queen enter, when all will quickly follow. The portion of the colony removed to a new position will raise a queen and form a separate stock. All hives and necessary appliances should be had in readiness that no hive may be lost when a swarm leaves a hive. Swarms sometimes cluster in very awkward positions for hiving. In some cases the only way in which to get a swarm into the hiving-skep is by placing it over, and gently driving the Bees up by means of a little smoke, or leaving them to draw up at will; care must, however, be taken to fix the skep securely or results may be serious. Through lack of this precaution it once happened to the writer to be placed in the somewhat alarming position of finding himself enveloped in a cloud of very angry Bees when mounting a ladder to secure a swarm that had drawn into a box that had been placed over it high up in a tree; unfortunately the said box had not been well secured, and the shaking of the ladder on being mounted dislodged it. The result may be more easily imagined than described.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in Gardeners' Free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of GARDENING, 37, Southampton-street, Covent-garden, London. Letters on business should be sent to the Proprietors. The name and address of the sender are required in addition to an designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent to press some time in advance of date, they cannot always be replied to in the issues immediately following the receipt of their communications.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query applied to, and our readers will greatly oblige us by advising, or, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and thus who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appeared.

3308.—Roses under trees.—Will any sort of Root do well in large trees, when the soil is good?—DORSET.

3309.—Cutting Asparagus.—Should all the small young growth of Asparagus be cut off the bed, or left to grow up?—M. F.

3310.—Roses with Ivy.—I have a high wall, facing east, covered with Ivy. Will any sort of Roses succeed grown with the Ivy?—DORSET.

3311.—Rose Cloth of Gold.—Does Cloth of Gold Rose succeed as a wall plant? I wish to get one, but have no room on a south wall?—DORSET.

3312.—Manetti Stock for Roses.—I should like to bud some Roses on Manetti for pot purposes. Will anyone kindly tell me what Manetti is, and where I can get it?—HOWARD.

3313.—Dwarf Roses.—What should be much obliged if someone would give me a list of some good kinds of Roses, to grow as dwarf planted near walls facing north, south, east, and west respectively?—DORSET.

3314.—Fruits of Obimonanthus fragrans.—I have several fruits of Obimonanthus fragrans or Obimonanthus procer ripening against the wall of my house. Is not this unusual?—B. C. G.

3315.—Treatment of Deutzias and Libonias.—I should like to know how to treat now Deutzias and Libonias, which have flowered most beautifully for the last six weeks? When or so pot, &c.?—SCOTT.

3316.—Thuja Lobbi.—Would someone kindly say what would be the probable cost of good plants of Thuja Lobbi, and if autumn would be a good time to plant, and is it particular as to position?—BOONBOR.

3317.—Wallflowers, &c., from seed.—I wish to give my own seed from Wallflowers, Pansies, Sweet Williams, &c. Is it necessary to fertilise them artificially? If so, what is the method of procedure?—AMATEUR.

3318.—Phlox Drummondii.—I am thinking of planting out a large bed on the lawn with Phlox Drummondii. Would it be best to peg it down or let it grow upright, and would it require an edging?—BIRMINGHAM.

3319.—Ants and greenfly on Roses.—Black ants nest my Rose-trees. Do they attack the greenfly, or do they do much damage on their own account? I have noticed them eating their way into a Rose-bud. Is there any remedy?—DORSET.

3320.—Tropeolum speciosum and Tussilago fragrans.—I shall be glad to have some information as to the best methods of growing Tropeolum speciosum and Tussilago fragrans? Are they both quite hardy enough to stand the winter in Surrey?—H. E.

3321.—Roses for out-flowers.—I find my Tea Roses grown in the open bed very soon after they are potted. I usually cut them at about 10 a.m. Has the time of picking anything to do with the matter? Will anyone kindly suggest a remedy?—DORSET.

3322.—Treatment of a Pear-tree.—Will anyone kindly give me information how to treat a Pear-tree which has not blossomed very freely this year? The tree is now making a lot of young wood—a great deal too much, I think. It is covered all over with shoots 12 inches long.—PEAR.

3323.—Ferns and Palms for a conservatory.—Will someone kindly advise me as to the names of some Ferns suitable for a small lease-to-conservatory facing the east, and which can only be shaded to a small extent? I shall also be glad of the names of some suitable Palms for this structure?—T. E. G.

3324.—Stopping Melons.—Is it advisable to stop laterals of Melons immediately after fertilising, or allow the shoot to run on till the fruit is set? There has been some difference of opinion expressed on the matter lately. It is an interesting one, and I may say something further about it again.—BIRMINGHAM.

3325.—Maréchal Niel Rose.—I have a Maréchal Niel Rose growing in a pot in a large window; I have had it three years, and this year it has blossomed profusely. I wish to know what ought to be done to it when the bloom has gone? Should it be cut back or let remain set, and watered freely or sparingly?—LEUC.

3326.—Barren Strawberries.—I have a bed of Strawberries, all of which, with the exception of two roots, have this season turned out barren. The bed has been in the same place for several years, the plants being changed every three years, and has hitherto been very productive. The roots were planted about 3 feet apart, and I have always cleaned and well-manured in autumn. I should be much obliged for an explanation of this year's failure.—H. O.

3327.—Seedling Violets.—Will anyone kindly inform me if I could transplant a lot of seedling Violets now to a vacant piece of ground? The plants have come up in the borders in thousands, and I thought that they might be transplanted now. Also when would they bloom, and how should I prepare the soil?—ANXIOUS.

3328.—A weedy garden.—My garden is infested with a weed, Mare's-tail, which is spreading over it, and in places forming quite a network, and is choking up my Asparagus beds. I have had it dug deeper, but this only seems to increase it. The soil is very wet. What can I do to get rid of this terrible plague?—CHINA.

3329.—French Cannas.—Will "C. T." oblige me with the height of these Cannas? In the catalogue of a Paris firm they are represented as being about 1 metre in height—that is, over 3 feet. I consider that tall for pot culture. Please tell me if they will flower another season, and what winter treatment is necessary?—L. E.

3330.—Climbing Rose for a north wall.—I should be glad to know the names of about four good climbing Roses suitable for a north wall, which gets but little sun, but which is sheltered from the wind. Also a similar number of climbing Roses that would do well on a wall facing west, shaded by a high wall about 20 yards off?—DORSET.

3331.—An allotment garden.—I have an allotment garden in the West Riding of Yorkshire, where I am seriously annoyed by a neighbour's pigeons destroying and carrying away Peas as soon as they are sown; in some instances nearly whole rows have been lost. Can I destroy them in any way, or can I get legal compensation for the damage done?—SURREY.

3332.—A lean-to greenhouse.—I have built a lean-to greenhouse at my back-door. It is placed between two other kitchens, and the aspect is north, and it gets very little sun, it being 4 p.m. before the sun reaches it. I intend to plant a few Tomatoes in it. Would they grow? If so, will someone kindly give me a treatment of same, as it is my first attempt?—BIRMINGHAM.

3333.—Vines bleeding.—I cannot stop this, although I have done all I know. I have burnt them, used Thomas's Syzygia, and what else. There are four canes of Black Alicante and three Lady Downes. I pruned them the third week in January, and they have been bleeding ever since. I should be glad if anyone will give me some information how to stop this?—S. L.

3334.—Japanese Climbing Cucumber.—I have raised from seed a few plants of the new Japanese Cucumber, which, I am told, is very hardy, and can be grown like Borelet Runners. I should be glad to have some hints as to their cultivation, and to know if the fruit is of good quality. Is this plant of the same species as the ordinary Cucumber? Would any readers give their experience?—MIRADO.

3335.—Grapes, &c., for very early forcing.—Will someone kindly tell me what are the best sorts of Grapes to have for very early forcing in a viney 20 feet long against a south wall? Also what kind of vegetables can I force with Grapes? Will French Beans, Lettuces, and Cucumbers do, also Spinach, &c.? And how can I get a consignment of the Bristol and London markets to sell them?—COARWALL.

3336.—Strawberries and Clover.—Some three years ago I dug a quantity of young Clover roots in, and planted Strawberries on the top of them. I have noticed each year that the plants look much better there than on the land that surrounds it, which was treated the same and sated at the same time. Is it from the decayed Clover roots, and if so, what do they impart to the soil? The land is light, with a sandy subsoil.—W. W.

3337.—Unhealthy Orange-trees, &c.—Will someone kindly tell me what is the matter with my Orange-trees? All the old leaves are falling off, and the old fresh ones as well. They are covered with blossoms, but hardly a leaf on them. The same with a Lemon-tree, and the blossoms, of course, cannot set. Not very long ago they were in most beautiful foliage, and the year before last one tree alone had upwards of a hundred Oranges on it, which made the most delicious marmalade.—C. A. M.

3338.—Early Chrysanthemums.—Will someone kindly inform me of the earliest flowering of the following Chrysanthemums, as I have very limited space for late flowering ones. These were sent me by a friend, but he gave me no idea when they bloomed. Contesse de Beaugard, Ferdinand Feral, Stanstead Surprise, Thunberg, Mona, J. M. Pigmy, Purton, Acquisdon, Omb of Gold, The Three Christinas, Jardin des Plantes, Jeanne d'Arc, Lord Alouster, Lord Wolseley, Violet Tomlin, Novelty, Lady Churchill, and Etolle de Lyon, and which of them are most suited for the cutting down system?—ASXWICH.

3339.—Strawberries for market.—I grow Strawberries for market purposes. There is a disease among them that kills them in patches every year, and they die right away at the top. If I plant every such good plants again on the same ground they go just the same, and my opinion is that there is something deficient in the land which they require to support them. I have seen several acres like it this year. Will anyone tell me the cause, or suggest a remedy? Finding it very difficult to get sufficient stable manure for my Strawberries, will someone please tell me what kind of artificial manure is most suitable for them, when, and how to apply it? They are Paxton's I grow.—W. W.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

3340.—Rhubarb seedling (A.).—Cut off the stems before the flower.

3341.—Hog's Fennel (A.).—Is Miller's "English Names of Plants" Hog's Fennel is said to be Peucedanum officinale.

3342.—Glaire Rose drooping (Glaire).—You have suggested the plant in some way, and we don't think anybody could tell you the reason why it drooped, but the plant, and know what treatment you have been giving it.

3343.—Liquid-manure (H. E.).—Cow-manure can be used in a fresh state to form liquid-manure. It should be well diluted.

3344.—Tropeolum speciosum (B.).—This Tropeolum enjoys a deep, moist, and rather rich soil, and flourishes best in cool, moist places.

3345.—Wild Grasses (Miss Wilkins).—You should get Parnell's "Grasses of Britain." It is the best work I know; published by Blackwood and Sons.—J. J.

3346.—Shading for conservatory (B. J.).—Try a fine lime-wash, with a slight mixture of oil; material for the purpose can also be procured from nurserymen.

3347.—Hardy Water Lilies (J. E.).—Among Water Lilies nothing is better than the common English one, Nymphaea alba, and the common English yellow one, Nymphaea lutea.

3348.—Deutzia gracilis (L.).—This is a common shrub, cheap in every nursery, and it is scarcely worth your while to increase it. Plant it in the open air, as it is perfectly hardy.

3349.—Specimens of Polyanthus (P. J.).—The flowers of Polyanthus are much crushed in transit. They are not quite so good as they ought to be, or you have not sent us your best specimens.

3350.—Increasing Camellias (F. M.).—Camellias are now grown so cheaply and abundantly by various nurserymen that it is a waste of time and energy to try to increase them yourself.

3351.—Increasing Nicotiana affinis.—This plant is easily raised from seed, which is sown by many houses. (Questions relating to different plants must be sent on separate pieces of paper.)

3352.—"Geranium" flowers not opening (Surrey).—We cannot account for the flowers not opening. We think there must be some error in the treatment. Please give particulars?

3353.—The "crown" of a Dahlia? (G. S. E.).—By the term "crown" of a Dahlia we mean the collar, or part where the tubers join together, and when sowing the young buds of the current year's growth.

3354.—White Silene pendula compacta (C. C.).—A white variety under the name of S. pendula compacta alba, is quoted in several catalogues of well-known houses, and it is not dearer than the type.

3355.—Nicotiana affinis (F. A.).—This plant is a perennial, but is easily raised as an annual, and hence may often be described as such; just as the Castor-oil plant is treated as an annual here, it being in tropical countries a low tree.

3356.—Orobide for a warm house (Idle).—Well, I do not admire your sobriety, for with that character you will be no use for Orobide growing; and in order to set you going straight let us know what heat you mean to maintain?—M. B.

3357.—Definition of an amateur gardener (T. B.).—In the ordinary sense of the term an amateur is one who does not keep a skilled gardener. An individual who employed a man one or two days a week only would be called an amateur.

3358.—Plants for border of pond (J. U.).—We shall very soon publish an article on aquatic plants, in which you will find all the information you want. However, you must not expect water plants to do much good if you have many water-fowl.

3359.—Hyacinths after flowering (M. H.).—They might not be disturbed until the roots have decayed, then plant them out where you want them to remain. If the portions you refer to are decayed outting them off will do no harm.

3360.—Epidendrum ornabarum (C. Judd).—This is the name of the flower you send. I think I told you some time back there were no Dendrobies in South America—that is, unless they had been taken there by some one, and thus become naturalised.—M. B.

3361.—Cypripedium Obambralinum (Cypripedium).—You will find this plant easy to grow instead of difficult, and it does well with the others from the warmest regions. You will find the question as to C. Godfrey answered in page 160.—M. B.

3362.—Sweet-scented climber for a greenhouse (T. M. T.).—Maedevilla aurovirens, Rhynchospermum janicoides, Hellebore, Jasminum grandiflorum, and Stenactis latifolia are all suitable. We fear there is no yellow sweet-scented Jasmine for the purpose.

3363.—Cherry-tree not fruiting (W. V.).—We think you should not get despair of a fruit crop; there is no perceptible difference in the swelling of the germ for a few weeks, but should you get no fruit this year you must conclude that you have a bad setting variety.

3364.—Wireworms in a garden (R. S.).—You must make use of traps. Place slices of Carrots or Potatoes on the ends of pointed sticks, bury them 3 inches in the ground, examine them daily, and destroy the worms attached to them. The sticks serve to show where to find the bait.

3365.—Wintering Scarlet Lobelia (F. R.).—In light soils and mild districts we have known this plant to live out during the winter. Where it will not do so, the best way is to take up the roots in autumn, and keep them in boxes under a greenhouse stage or bench; put them out in late spring.

3366.—Transferring Rose from bottles to pots (B. A.).—Before the roots have got too long you should move them into little pots in the most careful and gentle way, and grow them in a nice cool frame until they have got on a bit. Then, in summer, expose them altogether until they make sturdy little plants.

3367.—Dendrobium Wardianum (C. Judd).—Yes, there are one or two varieties of this species. The plant that comes from Birmah is the stoutest built. The original plant comes from Amoy, and is a slender bulbous plant. It is very rare in cultivation at the present time. The others were imported from Birmah by the late Messrs. Low, of Clapton, and are known by the name of Wardianum, and are known by the name of Wardianum, all being varieties of the original plant.—M. B.

GARDEN AND PLANT PHOTOGRAPHS.

We beg to announce another photographic competition, when prizes to the amount of over Eighty Guineas will be awarded.

The subjects selected may be: Beautiful houses and country seats; garden landscapes; picturesque trees; plants, hardy and tender; Ferns; Roses; cut flowers, prettily arranged; pretty cottage gardens; our best fruits on the branch or branches, not in dishes; standard vegetables; good flower-gardens, or any other objects of interest in a garden.

LIST OF PRIZES.

COUNTRY SEATS AND GARDENS.—A prize of TWENTY GUINEAS will be given for the best series of not less than six photographs of Tudor, Elizabethan, Jacobean, or other old English houses and their gardens, particularly showing the beauty of the house in relation to the garden. Picturesque old Farm and Manor houses will not be excluded from this competition.

GENERAL GARDEN AND PLANT PHOTOGRAPHS.—First prize for the best collection of general garden photographs, SEVEN GUINEAS. Second prize, FOUR GUINEAS. Third prize, THREE GUINEAS. This series may include subjects from any class, from either outdoor or indoor gardens.

FLOWERING PLANTS.—A prize of FIVE GUINEAS to the sender of the best collection of photographs of flowering plants grown in the open air or under glass. This series may include flowering shrubs of all sorts.

BEST GARDEN FRUITS.—A prize of FIVE GUINEAS for the best collection of photographs of any of our good garden fruits: Grapes, Peaches, Apples, Pears, Plums, Cherries, &c., or bush fruits, to be shown on the branches, not in dishes. No prize will be awarded to photographs of fruits or vegetables crowded in dishes.

BEST VEGETABLES.—A prize of THREE GUINEAS for the best collection of photographs of best garden vegetables. The object of this is to get full representations of the best garden vegetables under the old genuine names. We do not want to exclude real novelties when they are such.

In any of the departments, if no collection of sufficient merit is sent in, no prize will be awarded. All competitors not winning a prize will for each photograph chosen receive the sum of half-a-guinea. In order to give all readers ample time to prepare good photographs the competition will be kept open until the last Saturday in June, 1893.

WHAT TO AVOID.—Cut flowers or plants should not be arranged in vases with patterns on them. Backgrounds should be plain, so as not to come into competition with the beautiful flowers. Figures of men or women, barrows, watering-pots, rakes, hoses, rollers, and other implements, iron railings, wires, or iron supports of any kind, also labels, especially those made of zinc (which should be removed when the photograph is being taken), and all like objects should be omitted from these photographs. The intention is to show the full beauty of the subject taken, and this cannot be done well when the photographer is confused by other considerations. Dwarf flowers are ineffective when taken directly from above. The camera should be brought low down for such. All photographs should be mounted simply, and not several on a card. They should not be mounted on cards with black backs, and the photographs should not be less in size than 5 inches by 4 inches. In many of the photographs sent in for our last competition the subjects were much overcrowded. The following are the rules to be observed by all competitors:—

FIRST.—The photographs may be of objects in the possession of either the sender or others; but the sources whence they are obtained must be stated, and none sent the copy-right of which is open to question. There is no limit as to number, and no fee to pay. The Editor is to have the right of engraving and publishing any of the chosen photographs. The photographs may be printed on any good paper that shows the subjects clearly; but those on albumenized paper are preferred for engraving.

SECOND.—The name and address of the sender, together with the name and description of the object shown, should be plainly written in ink on the back of each photograph. This is very important.

THIRD.—All communications relating to the competition must be addressed to the Editor of GARDENING ILLUSTRATED, 57, Southampton-street, Covent-garden, London, W.C., and marked "Photographic Competition." All competitors wishing their photographs returned, if not successful, must enclose postage stamps of sufficient value for that purpose.

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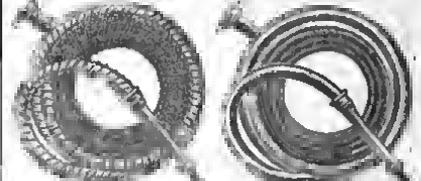
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GARDENING ILLUSTRATED.

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ROSES.

PACKING ROSE BLOOMS.

For the past four years I have sent by railway a distance of 250 miles the produce of two houses that are principally devoted to the growth of Roses. My system of packing the blooms to travel this distance has been so simple that I venture to think a short account of it may be useful. The only two Roses I grow in quantity are *Marechal Niel* and *Niphetos*, both of which are forced early, so as to get the blooms to market before they become plentiful. I cut over four hundred blooms of *Marechal Niel* in the month of March. There is more judgment required in selecting Rose-blooms for cutting early in the season than is the case later. In the summer it is not unusual to find a half-open flower out in the evening fully expanded by the middle of the following day; but such a thing does not occur in the month of March. When placed in a lower temperature, blooms of *Marechal Niel* when cut in a half-open state are more likely to contract than expand. As a matter of fact, there is difficulty in getting the flowers to open sufficiently without giving more heat than is desirable for the later blooms. Nothing less than 10 degs. will get the blooms in a suitable condition. They will not expand even with that amount of warmth, but will remain in a half-open state until they fall. It is fortunate for the grower that the public are willing to accept them in that condition. For packing I use boxes 15 inches long, 12 inches wide, and 3 inches deep. In the bottom of the box I place a thin layer of fine clean Moss or paper shavings; on this I place a sheet of damp newspaper, and on this a layer of Rose blooms. With each flower I take enough of the shoot to secure two leaves, which are carefully wrapped round the bloom and placed close to the one that preceded it. The secret of packing the flowers is to place them close together, so that they do not move in transit. If the flowers get moved from their bed they rub together, and the edges of the petals get disfigured. When one layer of bloom is placed in the box, another sheet of damp paper is laid evenly upon them, and then another layer of flowers is placed close together on the damp paper, as in the bottom. Two rows of blooms are quite as many as it is safe to send in one box. In every case a sheet of damp paper is placed next the flowers, and if there is any vacant space afterwards I fill it up with soft paper. When I have a quantity of blooms I tie two or more boxes together. In cold weather I take care to wrap each box separately in thick brown paper to exclude the air. Flowers sent so early in the year, and such a long distance, would be comparatively worthless if indifferently packed. C.

3813.—**Dwarf Roses.**—With so much space to devote to Roses you ought to make a wide choice, so as to include some of all the classes that are adapted to that form of growth. To go near the south wall the Tea-scented varie-

ties will do admirably. From this section you may choose *Anna Olivier*, *Camceus*, *Comtesse de Nadallac*, *Etoile de Lyon*, *Grace Darling*, *Hon. Edith Gifford*, *Innocent Pirola*, *Lady Mary FitzWilliams*, *Mme. Charles*, *Mme. Hoste*, *Mme. Lambert*, *Perle des Jardins*, *Princess of Wales*, *Safrano*, *The Bride*, and *Vicomtesse Folkestone*. These can be had in pots and planted at once. To plant near the east wall the choice is equally as large, and I think this aspect can be made as interesting as any, if not more so. All the following are perfectly hardy, and will live for some years without attention, and many of them are sweet-scented, and if allowed to grow their way will, in a few years, form low, spreading bushes capable of producing hundreds of flowers. Early Yellow Roses may be had from a group of Austrian Briers, which includes two varieties with single flowers and two with double ones. The Scotch Roses are also very interesting; the principal colour amongst these are yellow, white, pink, and crimson. The Cabbage Rose you will, of course, find room for, if it is only for its delightful fragrance. Then there are the striped Roses, such as *York* and *Lancaster*, *Village Maid*, and *Rosa Mundi*, all of which are highly attractive when in flower. Most Roses will be indispensable in such a case as yours, and although there are so many beautiful and newer varieties, the common pink variety and the White Provence must not be excluded. The west aspect you may devote to such of the Hybrid Perpetuals as you may care to grow, and for the north I do not think you can do better than make a varied selection, choosing the hardiest from the different sections. The Bourbons would no doubt thrive in such a position, especially such hardy ones as *Acidalie*, *Sir J. Paxton*, *Queen of Bedders*, and *Souvenir de la Malmaison*. The following Hybrid forms are known to be very hardy: *Brennus*, *Charles Lawson*, *Coupe d'Hebe*, *Paul Verdier*, and *Paul Ricaut*.—J. C. C.

"Dorset" will find the following all suitable for walls: *Cheabunt Hybrid*, *Gloire de Dijon*, *Kaiserin Frederich*, and *Bouquet d'Or* for north walls. *Rève d'Or*, *Henriette de Beauvean*, *Mme. Bérard*, the White and Yellow Banksians, and *Marechal Niel* for north walls. *Gloire de Dijon*, *Reine Marie Henriette*, *Duchesse d'Auerstadt*, and *Mme. de Tartas* for east walls. *And Belle Lyonnaise*, *Marie Van Hontte*, *Tour Bertrand*, *Caroline Kuster*, *Ophir*, and *Fortane's Yellow* for west walls.—P. U.

3821.—**Roses for cut-flowers.**—Decidedly the best time to cut these, or almost any kind of flowers, and especially in such warm and dry weather as we have experienced lately, is the early morning, between 5 and 6 a.m., when they are fresh from the coolness and dews of the night. Always cut them in the bud state, as they will expand considerably after being placed in water. But in any case I do not think this class of Rose ever stands so well when grown in the open air as under glass.—B. C. R.

Yes; it is because "Dorset" gathers his petals too late in the day that causes them to droop and lose colour so quickly. The

earlier in the morning flowers are cut the better they keep. All market growers recognise this, and either cut late at night, inserting them in water at once, or else do the same for a short time very early in the morning and before despatch. If they are cut early the colour will not fade, nor will they droop nearly so quickly, especially if they are placed in water immediately.—P. U.

You are not alone in your trouble this season, as I have had several complaints of the same thing happening to other flowers besides Roses. The long drought and the excessively high temperature that has prevailed is the cause of the flowers fading so quickly. Everything has been brought on with such a rush, owing to the heat, that no kind of flowers appears to possess any staying powers this season. With a decline in the temperature and more moisture in the ground this sort of thing will right itself again. Meanwhile, cut your Roses by 5 a.m., and take a flower from a plant that is dry at the root.—J. C. C.

—Ten o'clock in the morning is rather late for cutting Roses if you want the flowers to last. Cut them about six, or even earlier, and catch the buds in the act of expanding.—E. H.

3819.—**Ants and green fly on Roses.**—I do not believe the ants eat the Roses in any way. What they are after is the "honey-dew," or sweet excrement from the green-fly. They may also be seen sometimes carrying off a large fly, and it has been said they actually keep them in captivity, and allow them to breed for food. But what can the adult fly live on in the ant's nest? When the fly has punctured a Rose-bud, and caused it to exude the sweet, yellow-coloured juice we sometimes notice, I can quite imagine an ant eating into and feeding upon this gummy substance. Get rid of the green-fly, and the ants will cease to trouble you.—P. U.

3808.—**Roses under trees.**—The number of plants that will do well under large trees is very limited, and Roses should not be included. The old-fashioned hardy summer-blooming Roses, together with the different varieties of Provence, York and Lancaster, and others of equal hardiness, will grow wherever the soil is good and they get a reasonable amount of light. But under trees better be satisfied with *Ivois*, *Porwinkles*, *Acubas*, *Hollies*, *bulbs*, and *Primroses*.—E. H.

I do not think any Rose will do well under strong-growing trees. Even if your soil is good the roots of the trees will be certain to appropriate the greater part of the nourishment. Strong-growing Roses, such as *Rève d'Or*, *Dundee Rambler*, &c., would have the best chance, but I cannot advise your planting any Roses in such an unfavourable situation.—P. U.

The hybrid Bourbon and Provence Roses (including the old Cabbage Rose), also the striped Provence or "York and Lancaster" varieties, the Boursault section, and the varieties of *R. rugosa* will be found to thrive in such a position better than any others, and in good soil will do well.—B. C. R.

3830.—**Climbing Roses for a north wall.**—If your wall does not exceed 10 feet in height you may select the following, which will give you a nice variety: *Sir Joseph Paxton* (rose), *Felicite Perpetuee* (white), *Climbing Victoria Verdier* (crimson), and *gracilis* (rosy-red). For the west wall my selection would be *William Allen Richardson*, *Rève d'Or*, *L'Idéal*,

and Waltham Climber No. 1. I do not think the shade of a high wall 20 yards distant will do the Roses any harm. I notice you have another inquiry about the Cloth of Gold Rose. Why not try it on the west wall in place of one of the others?—J. C. C.

— "Dorset" has already asked this query, and has been replied to under the heading of "Dwarf Roses," 3313. The same varieties will do in the position stated in either query.—P. U.

3312.—**Manetti stock for Roses.**—The Manetti is one of the most common and also the most useful stock for dwarf Hybrid Perpetual Roses. It is not suitable for the generality of the Teas and Noisettes, nor for a few of the Hybrid Perpetuals. Any nurseryman advertising Roses in this paper could supply you with a few stocks; but it is too late to plant for this season's budding. You must plant in February or March next, and bud during the following July or August.—P. U.

3310.—**Roses with Ivy.**—It quite depends on the management. If you keep the Ivy cut away so as to allow the Rose growth to have a fair portion of the wall space, the two plants do very well together. Three years ago I planted the gable end of a high building with Roses and Ivy, and the effect is very pleasing, but each plant has a separate space of about 2 feet. During the summer the young growth of the Ivy mingles with that of the Rose, but it is cut away early in this autumn so as to allow the growth of the Rose to get hardensd. For an east aspect Gloire de Dijon and the Red Gloire are the best Roses.—J. C. C.

— The Roses would not stand much chance against the Ivy, and there is not much reason for thus planting them together. Even the Clematis Jackmanii does not do very well when thus planted. You might plant a Rose—say, Gloire de Dijon—against the Ivy, but not for shoots to intermingle, and you would get the contrast in colour of the flowers and deep-green leafage. I have seen the "Gloire" thus placed, and the effect was very good of its flowers against the Ivy, a few of the flower-laden shoots hanging over the Ivy stems. The soil for the Rose must be of a good loamy character, fairly rich, and if the horder is dry give plenty of water during the summer months. The best month to plant Roses is November, and get a good specimen to grow away vigorously from the commencement.—C. T.

— No, I do not advise your planting Roses with Ivy, for the same reason as I have already given against planting them under trees. The Ivy is very rapacious, and would certainly not give your Roses a fair chance.—P. U.

— Gloire de Dijon is the best Rose to plant to grow along with Ivy. Encourage it to make long shoots every year by pruning rather hard back directly the first crop of flowers are over. The Ivy must be kept in close to the wall by removing all superfluous shoots from the face of the leaves of the Ivy.—S. P.

3325.—**Marchal Niel Rose.**—You are to be congratulated on your success with this Rose in a window, as not many succeed with it when grown in that way. You do not say what size pot the plant occupies. If it is in one anything less than 8 inches in diameter, I should say it wants a larger one, and the sooner it has it now the better. You had better not prune it until the end of November. Meantime give water liberally, only not to the extent of keeping the soil constantly wet, and if you can substitute guano-water, or some other stimulating liquid, for clear water, this growth would be stronger.—J. C. C.

— Cut your plant back after it has finished blooming. In fact, cut it back to a healthy break near the base. Mulch with a little good soil, and water freely, adding a little weak liquid-manure at each alternate watering after your plant has commenced to grow again freely.—P. U.

3311.—**Rose Cloth of Gold.**—Yes, this grand old Rose will do better as a dwarf on the seedling or cutting stock than in any other form. Give it a sheltered position and the support of a stout stake, and you will succeed almost as well as if on a south wall.—P. U.

3330.—**Tap water.**—I have never known any injurious effect to ensue from using water from the waterworks. Thousands of the fine plants brought into Covent Garden-market are grown in this way. In some market-gardens the plants—many of them of a tender nature—are almost daily sprinkled with water from the waterworks. I know of places where no other kind is used, and yet growth is all that can be desired.—J. C. B.

GARDEN WORK.

Conservatory.

Cottages of the young shoot *Alyxia oliviflora* (Sweet Verbena) will strike now in a warm, close place. This, though a popular plant on account of its fragrant foliage, does not possess much decorative value indoors. I prefer it against a warm wall in the open air. I once had it planted against the front wall of a forcing-house, where it made very luxuriant growth, which flowered profusely, and was much admired. If there is likely to be any scarcity in useful plants to fill up the conservatory during summer a few of the best things among bedding plants may be shifted on. *Ononis*, *Bignonia*, "Geraniums," of various kinds, *Phlox Drummondii*, &c., when well grown come in useful for stopping a gap. But with good collections of Tuberoses, Begonias and some of the best single and double Zonalas, with a few Lilies and single specimens of such things as *Plumbago capensis*, *Blue and White Kalosantes* in variety, and the large specimens which can be spared from the stove and the fernery, there will be no difficulty in keeping the house attractive. Wood-stem bushes of *Hydrangea* are very useful, and large masses of *Agapanthus umbellatus* are charming when in flower either for the conservatory or to stand out on the lawn. Trees in pots which have ceased to be effective may be placed outside now. If the pots are plunged they will not require so much water, and the plants will do better. The Pelargoniums of the old show and fancy types have not lasted to long this season in consequence of the hot weather. As the plants go out of bloom place them outside to complete the finishing, preparatory to cutting them down. Hard-wooded plants must have free ventilation night and day. In commencing night ventilation the opening moves should always be moderate, just a little air being left on along the top of the house, these openings to be gradually increased till the plants will bear all the ventilation possible night and day. The plants will revel in the cooler air at night, and when freely exposed to it there is less danger to its apprehended from mildew or insect pests. No specimen plant should be watered without its condition being first ascertained by a rap with the knuckle on the side of the pot. There is on other test so reliable. Hasty haphazard watering is accountable for the deaths of a good many plants. There is not likely to be any demand for artificial heat before the autumn, and if the time can be spared the furnaces, boiler, fires, stoves, &c., should be carefully cleared out. The water may be run out of the apparatus, and may be filled in again with fresh water, where it can be obtained. Climbers are growing freely, and the necessary attention to regulate the growth must be given. Young stock coming on for winter blooming must have their water attended to in the pits and frames. It will be better to discontinue syringing, unless the water is quite pure and free from lime. Forced Asclepias which have completed growth may be in cold frames where the ventilation is very free.

Stove.

Seedling Gloxinias and Hybrid Stephanotis may be binned as yearlings if well grown, but they must be pricked off as soon as large enough to handle, and must suffer no check from cold, frost, and moisture. When coming into bloom move to a cooler house. Both these classes of plants may be used in the conservatory in summer, and will prove an important addition to that house if grouped at the warm end where a thin shade can be used. Summer flowers in the stove are usually fairly plentiful. Grand effects are produced by the *Alamandras*, *Dipladenias*, *Bougainvilleas*, *Stephanotis*, and *Clerodendrons*. These are not much grown by indifferent cultivators. To do them well they require more heat than is available in the ordinary cool stove, and unless well managed they get smothered with brown scales and become a nuisance. *Hoya*, including *H. bella*, are charming summer-flowering stove-plants. The last-named is a beautiful basket-plant. It requires good fiery peat, that will not get close and sour. *Russelia Yuca* is a very useful summer-blooming plant; does well in good-sized baskets; style of growth very light and graceful. *Yuccas* are exceedingly useful in summer blooming. When well grown they are useful to the exhibitor, and with care the same specimens may be made available for several successive shows—in fact, these large specimens would hardly pay for their keep unless they could be kept in condition to be trotted out to several shows.

Pits and Frames.

To a large extent the bedding-plants are outside, and the pits and frames will be filled up as quickly as possible in some useful manner. Several pits may be required chiefly for bringing on young stock of *Poinsettias*, *Euphorbias*, *Justicias*, *Begonias*, and other winter-blooming stove-plants. *Huwardias*, again, will require room to grow on steadily. *Cinerarias*, *Cyclamenos*, and *Primulas* near the glass. These various plants can be filled with *Guano*, *Melons*, *Cavercour*, and possibly *Tomatoes*. The larger frames should be used for *Tomatoes*.

Fern-house.

Ferns are amongst the easiest plants to cultivate. A thin shade when the sun shines, abundance of moisture in the atmosphere, and just ventilation enough to keep the atmosphere buoyant—under such conditions the plants grow freely, and the fronds will get hard enough to use for cutting for bouquets and vases. Spores can be sown any time. When fully developed fertile fronds can be obtained, it is a very easy matter to work up a collection of large specimens of the usual kinds grown. Start with healthy, vigorous plants, and shift on as fast as the roots work through the soil. A healthy plant will take two or three shifts in a season.

Orchard-house.

It will be a great drawback if the supply of soil water gives out, and the syringe or engine has to be laid on one side, in consequence. Hard water must be exposed before use. Free ventilation is very important, especially early in the morning, though I always find it advisable to shut at four

In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than in here indicated with equally good results.

o'clock in the afternoon, and damp down or syringe, giving a little air on mild nights to cause circulation about 8 p.m. Do not crowd the pots; better take a tree or two outside to make room. Keep the young growth thin, but do not be in a hurry to stop the growth of *Paschea*.

Mushrooms for summer.

Make the beds now on the north side of a wall or building. It is not unlikely that manure which has been much exposed may be too dry. I would in a season like the present rather have the manure fresh from the stable; only the very longest of the straw to be taken out, and about one fourth of good loamy soil added to the manure, the weeds to be well blended, and the beds made up at once. The soil will absorb the ammonia, and prevent over-heating or spawing. As soon as the heat rises soil it once, as the beds are not likely to get too hot. Cover with long litter to keep the beds from drying too much, and in six or seven weeks there should be plenty of Mushrooms.

Window Gardening.

Get all window-boxes filled now. Do not have things too close and prim. Let the growth have liberty to flow over the fronts of the boxes, and if a few creepers are planted in the ends of the boxes to be trained round the window, the effect will be enhanced. Cobias scandens is a very rapid grower, and if well watered will thrive in a box. Large vases or pots filled with "Geraniums," *Veronica*, &c., and placed about the firecourt will be bright and pleasant furniture. Indoors a few well-grown plants will give more satisfaction than a larger number of untidy specimens. Place *Myrtles* outside to ripen growth. *Orangers* and *Oranges* may stand in a sheltered place in the open air end of the month.

Outdoor Garden.

Where the hardy annuals have come up well thin the smaller growing kinds to 4 inches, and the large, spreading things to 6 inches. Do it after a shower, or else give a good watering, and as soon as the water has settled into the land draw up the surplus plants. Annuals may be sown for late blooming. The chances are that when the change comes in the weather there will be a period of dampness, and the last time may be made up. The land has had a good roasting, and will be frequent showers the grass, &c. Give liquid-manure to *Rose*, *Geraniums*, *Phloxes*, and other strong-rooting plants. *Illydiums* must be well nourished, or the fungus will probably appear on the foliage, and the effectiveness of the plants destroyed. Wash *Roses* frequently; if syringed frequently with clean water *Lycotis* will not give much trouble. But when syringing is neglected and green-fly makes its appearance, something stronger than water must be used. Water used frequently will keep plants nice, but will not kill insects when the plants are badly infested. Place stakes to *Campanulas* and all other hardy plants of good time. Thin out shoots in *Phloxes* where too crowded. The early flowering hardy bulbs have had a good ripening this season. *Hyacinths*, early-flowering *Tulips*, and *Crocus* may be lifted if required to make room for bedding plants. Get on with the bedding out now. It is like to plant just before rain if possible, the ground works so slowly when the surface is dry. Large plants with frequent showers, with a heavy rain, are always successful. There are many ways of using *Salvia* all more or less pretty and effective. I have the *Salvias* planted thickly, and the beds filled in with small plants of the *Golden-leaved Abutilon*. Among *Barlets* "Geraniums" for masses there is nothing superior to *West Brighton Gem*.

Fruit Garden.

Strawberries will bear a good deal of liquid support now. It is a good plan to take the runners for forcing from plants which are not allowed to bear fruit. Those who can grow *British Queen* well will never give it up, but *Joseph Paxton* is so reliable either as a factor or in beds in the open air that all of us ought to try it. Three plants of *Violettrose de Thury* planted out now, and well watered, will bear another crop in the autumn. It is best to use seedling plants, but not to the same extent. If not already done the covers may be taken from the Peach wall. The probabilities are they have not been used very lately, but they will not be required now. It is a mistake, I think, to leave more *Peaches* than are wanted for the crop after this date, and *Apricots* are often permitted to carry their surplus fruit too long. *Melons* where well nourished have had a splendid time, and where the ventilation has been right the leaves are hard and robust, and in a condition to resist the attacks of red-spider. In setting *Melons*, wait till there are four or five young fruits about to expand their blossoms nearly on the same day, so that all can be fertilised nearly together. If one fruit gets a decided lead it frequently robs the others. The young fruits or plants in a hardy and robust condition generally set better than when the plants have been grown in rather light rich soil, and perhaps insufficiently ventilated. *Melons* in pots or tubs must be well nourished. I have seen good fruit on plants in large pots, the latter being either planted or surrounded with old turf mixed with a little soil and bone-meal, both of which are soluble stimulants for *Melons*. *Peaches* under glass which have finished stoning will bear a little more heat for two or three weeks, and also more liquid-manure. *Vine-borders* both inside and outside, if well drained, may require a good deal of water.

Vegetable Garden.

It will be difficult until there comes a change in the weather to keep up a succession of Peas. The early varieties are rushed on into bloom before they reached their full growth, and the later sowings will not germinate without moisture, and the moisture must be a constant quantity, and not by fits and starts. Inexperienced people always fall in watering. They never seem to realise the actual necessities of the case, and even men who have worked in gardens for years, and who ought to know better, will not grasp the situation aright. Watering is heavy work, and this fact may serve to account for any shortcoming. Tender plants such as *Tomatoes*, *Vegetable Marrows*, and *Ridge Cucumbers* which have been well hardened by exposure may be planted out. *Vegetable Marrows* are very tender, but it will be easy to cover them for a night or two by inserting a large flower-pot over them. Good lettuce cannot be grown now without

mulch and moisture. Transplanted Lettuces will soon bolt. It is best to sow to drils thickly, and thin out to from 8 inches to 12 inches. Lettuce seeds are cheap enough even if it is necessary to sacrifice a few young plants. Good Radishes can only be obtained now by sowing in a shady position, and keep the bed well watered from the time the seeds are sown. I have found it an advantage to make the position rich with old loam and potting-soil to fill the ground full of humus to insure quick growth. In a dry sandy spot salad plants will do no good now. In planting out Celery or anything else now shading will pay. Branches out from trees, and either laid over the plants or thrust in the ground will be useful.

E. HOBAY.

Work in the Town Garden.

Should the weather continue as warm and bright as it still remains while I pen these lines, well-hardened bedding plants may be safely put out in fairly sheltered gardens at any time. It is best to begin with the hardier descriptions, such as the little Golden Feather *Pyrethrum* (really a hardy plant), *Verbena*, *Lobelia*, *Petunia* (these, too, are exceedingly hardy, if grown "cool" throughout), sturdy "Geraniums," &c., leaving the more tender *Begonias*, *Heliotropes*, *Dahlias*, &c., until June is well in; and *Coleus*, *Alternanthera*, &c., until late. Shrubby *Calceolarias* ought to have been planted weeks ago, and be now growing freely. The watering is the principal difficulty just now, and newly-planted stuff must be kept moist at least until the plants have rooted out, and become established, but if a mulch of Cocoa-nut-firm, spent hops, or the like, is given immediately after a thorough soaking, no

THE COMING WEEK'S WORK.

Extracts from a garden diary from May 27th to June 3rd.

During this week everything will be subservient to the bedding out in order to get the work done. When the work drags on for weeks it becomes tiresome, and the season is then so much shortened. I do a little carpet bedding which usually follows in the beds now occupied by the Tulips, and if the change in these beds are completed by the middle of June in so average a season it will do early enough for such things as *Coleuses*, and *Alternantheras*, and as these will be planted thick enough to be effective at once the beds will come on altogether. Top-dressed Melons with rather heavy loam, pressing it down firmly and pegging out the shoots in the right direction to fill the frames. Leading shoots will be stopped when within 6 inches of the sides of the frame, and the laterals picked one or two leaves beyond the fruit. I always endeavour to set as many fruits as will form a crop for each plant as near about the same time as possible so that all may start swelling together. If one fruit gets a long lead the other will not follow. Give liquid-manure to early Melons swelling out in a general way I think four or five fruits are enough on each plant, though this, of course, will depend upon how much space the plants are permitted to strike and fill a lesser space, and then a large number of fruits may be left. I certainly think a summer Melon plant should have more room for development. The more growth the more vigour. Draw more earth up to second early Potatoes, such as *Puritan*, *Snowdrop*, and others of similar habit and easiness. Use the fork between rows

INDOOR PLANTS.

STOVE DRACENAS.

AMONG the stove species and varieties of *Dracena* are to be found some of the most beautiful and distinct variegated plants in cultivation, alike remarkable for the charming colouring of their foliage and the elegance of their habit; they are adapted for the warm conservatory or the greenhouse in the summer, or the numerous decorative purposes in rooms for which plants are now so extensively used. The narrow-leaved kinds are the most elegant, but some of those with massive, broad-leaved foliage are very effective when associated with *Ferne* or flowering plants, and in these ways can be employed to the best advantage. All the warmer section will bear a stove temperature and are free growers, but do not progress so fast as to be of a weedy character. They are easily propagated, but not being plants that break out side-shoots, they do not afford material to make stock so quickly as many things do. They yield cuttings from the roots differently from most plants; the feeding fibres proceed from a stout underground stem, thick and blunt at the extremity, which extends downwards, soon reaching the bottoms of the pots. If 2 inches or 3 inches of these stems are cut off, and put point upwards in small pots, they will soon push growth and, forming leaves, make plants similar in every way to such as are the result of striking the tops of the plants. The latter, if taken off with four or five leaves, root in a warm, close atmosphere in a few weeks, but the most expeditious mode of increasing *Dracenas* is to take the stems of any old plants that have attained a considerable height, and in such condition have generally lost their lower leaves; if these are divided at the roots, the soft portion of the top and all the leaves, and are laid down in a propagating-frame where there is a

GOOD BOTTOM-HEAT, on a bed of open, sandy peat, with about half an inch of similar soil over them, most of the eyes will start into growth and push up sucker-like shoots. As soon as these have made three or four leaves each they should be cut clean off from the old stem, with the roots attached that the young growths will have formed; they should be put singly in small pots in sandy peat and kept close and shaded for a week or two, when they will soon get established, and must then be innured to the full air of the house. *Dracenas* are not liable to become drawn or weakly, but their leaves are handeomer and more enduring when they are grown with enough light and have a sufficient amount of air every day during summer. Plants raised in the above way early in spring will, if kept growing in a brick heat, be ready for moving into 4-inch pots by the end of June, after which continue to treat them as before, giving plenty of water so long as the season of growth continues. Syringe freely overhead in the afternoon at the time the house is closed. In the night through the winter a temperature of 60 degs. is sufficient; in the spring increase the warmth day and night, and as soon as growth commences move them into pots 3 inches larger, treating as in the previous summer. Additional root-room as wanted must be given proportionately to the requirements of the different kinds grown; such large growers as *D. Shepherdii* and *Baptistii* need much larger pots than the smaller sorts. The plants may be kept growing to any required height so long as they retain their lower leaves; after the loss of these they possess little beauty, and should have their heads taken off and struck, and the young stock raised from the stems. Three years is generally as long as the plants can be kept fairly furnished with bottom leaves. Comparatively small examples in 6-inch or 8-inch pots are the most useful for ordinary decorative purposes. There are now an immense number of species and varieties, many differing very little from each other. *Trips*, *red-spider*, and *aphides* can be easily kept under by syringing. Should brown scale or mealy-hug attack them, spooning is the best remedy. The following is a selection of the best heat-requiring kinds:—*D. albicans*: A very distinct and handsome sort; leaves bright-green, variegated with white. *South Sea Islands*. *D. amblyoneura*: Handsome in habit, the lower portion of the leaves heavily edged with bright-red. *Amblyna*. *D. angustata*: A handsome,



Dracaena Goldieana. (See page 174.)

more will be required for a long time. It is also worth while to remember that though a little more expensive, plants turned out of small pots become established and begin to make a display much more quickly, as well as requiring much less watering, than the "cheap" bedding plants now so largely grown, and sold in boxes or trays. *Pelargoniums* of all kinds should be planted in poor sandy or loamy soil, as then they do not make too much growth, but bloom very profusely, and the same may be said of *Single Petunias*, and of *Marguerites* also to a certain extent; but *Verbena*, *Fuchsia*, *Begonia*, *Dahlias*, *Asters*, and many more luxuriant to a soil well enriched with plenty of very old hot-bed manure, leaf-mould, or spent hops, decayed turf, and so forth. In a fine season the Ivy-leaved *Pelargonium* make a grand bed if planted moderately close, and the growth pegged down, but not too stilly, to the soil. A bed of a *Salmon* or delicate rose-coloured variety, such as *Mrs. Crocus*, "dotted" over with dwarf purple or lavender *Heliotropes*, the pretty "Blue" *Marguerite*, or even yellow *Begonia* or *Calceolarias* has a very pretty effect. The *China* or *Annual Asters*, *Stocks*, *Zinnias*, *Phlox Drummondii*, *French and African Marigolds*, and all similar plants should be planted out as soon as possible now, and must be kept moist at the root subsequently, though a mulch of fibre, spent manure, or the like, saves a lot of work in this way. Stocks are apt to flag badly after being transplanted, and must be shaded in some way from the scorching sun. Prepare beds for sub-tropical plants, such as *Cannas*, *Kolocas*, *Nicotianas*, *Melise*, &c., by digging them deeply and watering well. Plant out Tomatoes on warm borders, and keep them rather dry at the root at first. Seed of Chinese *Primulas* must be sown at once, also *P. obcordata* to flower next spring; seed of *Carnations* may also be sown, and the plants will flower next summer.

B. C. R.

of Potatoes just up. Stirring up the soil is of the greatest possible benefit at this season. Planted several long rows of the white seeded Runners; these are more useful for late picking than the Scarlet Runner. Peas in a dry time must have much and water if they will be short in haulm, and the pods small. Dressed *Morsillo* *Charities* with soap and Tobacco for black-fly. Where possible the shoots have been dipped in the liquid. There is less waste in dipping, and the insects get the full benefit. Trained cressets on walls. Looked over Peach-trees to still further thin the wood. Nailed in young shoots to prevent breakage from wind. Afterwards thinned off more fruit, and gave a good wash with soap-suds from laundry, with a dash of Tobacco liquor in it, or Tobacco powder will do just as well, and will come cheaper. Rearranged trees in orchard house to give Peaches more room. I always start the season with a few more trees than the house can hold when growth is active, and turn out some of the late Plums. When the weather gets settled early in June the Plums will be plunged in a boiler in a sheltered part of the garden. Looked over climbing conservatory to regulate growth. Moved out a few plants which have done flowering and filled up with *Fuchsias*, the *Double Petunias*, and formed a group of *Gladiolus* the *Bride*, which has been started in a cool pit to flower late. These are beautiful for cutting. I have had the large flowered hybrid *Gladiolus* beautiful in pots in May and June. The bulbs were potted in December, and plunged in a bed of leaves in a pit over the top of the pots till growth commenced. There was not much forcing, just a little genial warmth. Severe forcing will not suit the hybrid. Even the *Bride* if pushed too hard gets out of shape, and the leaves go wrong. Clematis is large and a strong grower, and the leaves very showy things in June, and are quite difficult to grow. Prepared a lot of stakes of different lengths for hardy plants in borders.

URBANA-CHAMPAIGN

small growing kind; leaves 1 inch wide, dark, clouded green, shaded with bronzy-red. South Sea Islands. *D. Baptisti*: One of the finest of all the species. The leaves are large, and the general habit of the plant handsome. Ground colour, a pscular shade of rich, metallic-green, edged with red, suffused with white. South Sea Islands. *D. Bausei*: A distinct and handsome variety of garden origin. It has stout, broad leaves, dark bronze, edged with crimson; the stalks highly coloured. *D. Claudia*: A fine decorative variety of small habit: leaves green, shaded on the edge with rosy-carmine. A most useful kind. *D. Earl of Derby*: Leaves long and broad, ground colour bright-green, broadly edged with crimson; leaf stalks highly coloured. South Sea Islands. *D. Fraseri*: This sort has very stout, broad, short leaves; the ground colour is very dark, with red variegation. A distinct and handsome kind. South Sea Islands. *D. Frederici*: A hybrid variety; dark, bronzy-green leaves, edged and veined with crimson.

D. GOLDIEANA (figured on p. 173) is a most remarkable and distinct species; the leaves are broad and pointed, greyish-green ground colour, banded across with broad irregular markings of whitish-grey alternating with dark-green. Tropical Africa. *D. gracilis*: A small-growing kind with slender narrow leaves. A useful decorative plant. *D. Guilfoylei*: Another very distinct and handsome kind; ground colour light-green, striped with white, pink, and red. South Sea Islands. *D. Mrs. Bland*: A stout short-leaved variety, ground colour deep-green, margined with bright-crimson. *D. Princess Margaret*: Different in appearance from most others, medium in growth, midrib crimson, most of the leaf-blade white, striped with pale-green suffused with pink. South Sea Islands. *D. pulcherrima*: A medium-growing kind, with narrow leaves; very graceful in appearance; colour green, with red and white markings. South Sea Islands. *D. Rex*: A hybrid variety of distinct character; stout in habit; leaves bronzy-green, streaked and edged with carmine-red. *D. Shepherdii*: One of the largest and strongest growers of the family; the leaves are very long and broad, and of different shades of green, tinged with bronzy-red. South Sea Islands. *D. superba*: A small-leaved hybrid variety; leaves 12 inches long by 1 inch broad, bronzy-green, edged with red. *D. terminalis*: One of the oldest, but still one of the very best for general decorative purposes, grown more than all others put together for market, as it will stand much hard usage. Leaves bronzy-green, edged and suffused with pale transparent red. East India. *D. terminalis alba*: A form of the above with a good deal of white in the leaf marking. B.

ANTHURIUM SCHERZERIANUM AND OTHER KINDS.

CURIOUS enough, last week I was asked about *A. crystallinum* for flowerlag, and this week I am asked by "C. H." about the variety maximum of the species named above. This is at once a magnificent and a telling plant, and I was the more struck with this plant a few days ago than I have ever been before, when I saw two plants each having about a dozen spikes upon them. This variety is only a seedling variety of the original plant, which, when it first flowered in this country, produced a spathe about an inch across; but it soon improved in size and in colour, until I should think for a few years it was never out of demand, and I have sold an immense lot of it in every part of the three kingdoms, and I should imagine more money has been made by this plant than by almost any other one now plant; but this is nothing to do with its culture. It is a member of a very large family, some of which are magnificent when grown for ornamental leaves, others for the beauty of their spathes, whilst the great majority of them have nothing about them to attract, and are, therefore, best left to the care of botanic gardens, or some such establishments, where individual beauty is not so much studied and cared for. I have noticed a few kinds which are remarkable for the beauty of their spathes, and I must here call the attention of my readers to the fact that the beauty of Anthuriums does not lie in their flowers, because in all cases these are small and insignificant, but to the vivid colouring of a more or less large fleshy spathe, which in most instances forms a sort of covering to the

spadix, on which the flowers are congregated, and which are always hermaphrodites. This spathe, from its thick fleshy texture and from being entirely free from any functional duties, last a long time in full beauty, and it is for the beauty of these spathes that Anthuriums are grown. They are easily fertilised, and by this means some beautiful hybrid varieties have been obtained, a few of which I mention below—

A. ANDREANUM.—A robust plant, producing fine large cordate, smooth leaves of a leathery texture, and of a rich-green colour. The flower-stalks are thrown up above the leaves, and it produces a large bullate spathe of brilliant scarlet, the spadix being white, eventually changing to a lemon-yellow tint. It is a native of the mountains of South America.

A. FERRIENSIS.—This is a garden variety raised between the last named plant and *A. ornatum*. It produces a large spathe of a bright red, but it is not bullate, and a white spadix.

A. LONDIENSE.—This is another variety from *Andreanum*. It grows in the same way, and produces a very large spathe, bright rosy-carmine in colour.

A. REINE DES BELGES.—This is a very free-flowering variety, with a large spathe of a soft delicate rose.

A. LAINIE.—This, one of the varieties which has run away from the coloured forms, and the spathe is large and of the purest white, produced well above the foliage.

A. ORNATUM.—This is another pure white spathed plant with the spadix of a violet hue, and the flowers upon it are sweet-scented. It is an imported plant from Venezuela.

A. PARADISE.—This is a grand plant, a cross between *A. Andreanum* and *A. ornatum*, bearing a creamy white spathe, which is suffused with flesh colour, and the spadix a reddish salmon.

A. SCHERZERIANUM.—This is a dwarfier plant than any of the above, with long narrow leaves, which are leathery in texture and rich deep-green. This, the typical plant, produces spathes which are thick and fleshy in texture and ovate in shape, crimson-scarlet in colour, and the spadix yellow. It produces a vast number of spathes and is exceedingly ornamental. It was introduced from Costa Rica.

A. SCHERZERIANUM WILLIAMSII, of the same habit of growth, but bearing spathes of a pure white, the spadix being yellow. This plant originated in English gardens, but I cannot tell how. It has been much neglected, but I see lately some forms with larger spathes are cropping up.

A. SCHERZERIANUM ROTHSCHILDIANUM, raised between the two last named plants, and partaking of the character of both having the front of the spathe creamy-white, mottled and freckled with red, and the back part is wholly red.

A. SCHERZERIANUM ATRO-SANGUINEUM is a fine coloured variety, having a spathe of an intense crimson, making it a plant of a distinct and attractive character.

A. SCHERZERIANUM MAXIMUM.—This is a grand form introduced to notice by Mr. Wm. Bull, of Chelsea; it produces enormous spathes measuring some 8 inches or 9 inches in length, and about 4 inches across, of a rich-deep scarlet. Now I think my friend, "C. N.," will find enough kinds enumerated above, but if he makes up his mind to devote all his space entirely to the cultivation of Anthuriums he will soon learn the names of a lot more. They are plants that enjoy a great deal of heat during the growing season, accompanied by a lot of water to the roots and a moist atmosphere, so let the pots be well drained in order to carry the water away quickly. For soil use good fibrous peat and turfy loam made sandy, which should be pressed down firmly. During the winter months the temperature must be considerably lower, but they will do best if the glass is not allowed to fall lower than 60 degs., and, of course, less water must be used in the winter than the summer. J. J.

3223.—*Ferne and Palms for a conservatory*.—There is a good selection of *Ferne* to select from, and you may include the following with every prospect of succeeding well in such a structure: *Pteris serrulata* and any of its many varieties, vigorous plants that will succeed well in small houses; *P. tremula*, not forgetting the very charming variety named *variegata*, which is distinctly marked with silver white

P. roties, a very sturdy *Ferne*, and its variety *albo-lineata*; *P. c. nobilis*, which has its fronds distinctly crested; *Adiantum cuneatum*, some of the finer varieties of the hardy *Ferne*, *Shield Fern* (*Polystichum*), *Male Fern* (*Lastrea*), forms of *Hart's tongue*, *Onychium japonicum*, *Aspleniums*, and I may mention *Pteris Mayi*, a crested form of the variety *albo-lineatum*, and a very distinct kind. All the above-mentioned *Fernes* thrive well under ordinary conditions, and will make a good commencement for your collection. A few good *Palms* are *Rhapis flabelliformis*, *Chamaerops humilis*, *Corypha australis*, *Latania bharbonica*, and *Areca lutescens*, which you may commence with. They are not troublesome to grow, and small plants are not expensive. Give the plants as much shade as possible, as the house is so exposed to the sun, and abundance of water, which may be lessened in the winter, as then the soil requires to be kept drier. Another point of importance is to keep the leaves sponged occasionally to remove dust, as plants, when in houses near the dwelling-house, often get much coated with dust.—C. T.

3337.—*Unhealthy Orange trees*.—Orange-trees, like other fruit-bearing trees, are frequently injured by overcropping, and something of this sort seems to have been done in the present case. Allowing one tree, probably a small one, to bear 100 Oranges is not wise as regards the future. But it may be fairly assumed that when the leaves of an Orange-tree fall off that there has been some irregularity with the roots, either in supplying water or the drainage is stopped up, and the soil has, in consequence, become sour. It will be best to examine the condition of the roots. Something is wrong there.—E. H.

—It is very difficult to answer questions when no information is given as to the treatment of the trees, or where they are growing. They must have received a check in some sort of way, either by exposure to the drying winds, or too much or too little water at the roots. Orange-trees are not at all difficult to manage, either as greenhouse plants or grown in a forcing-house; but the pots or tubs in which the plants are growing should be well drained, and water must be applied with discretion, and it should be as warm as the temperature of the house.—J. D. E.

—Evidently the roots have from some cause, over-watering probably, become unhealthy. Possibly the drainage has become clogged, and the soil has thus been rendered sodden and sour. It is seen to at once, and the plants are very carefully watered and attended to in other ways they may pull round, but in all probability they will succumb. They appear to have been over-cropped also.—B. C. H.

3332.—*A lean to greenhouse*.—Tomatoes will not do much good in a north house. The plants would grow, but the crop must be a poor one, and if the end of the summer happened to be cold the fruit might not ripen. The treatment of Tomatoes is simple enough, and may be summed up in the words—Keep the growth thin; and this would be doubly necessary in a house with a bad aspect. Details of treatment for Tomatoes are frequently given in *GARDENING*, and regular readers may always find solutions to their little difficulties in the back numbers.—E. H.

—I am afraid that you will not achieve much success with the Tomatoes in such a position as that described. A plant-house right in the shade, as described by you, will not grow Tomatoes, which require a large share of sun. If you have a sunny wall it would be better to plant them there. I have got a very good crop of Tomatoes from quite a small garden when the plants have been against a wall with the sun upon it the best part of the day, and the soil fairly good; but sunshine is essential.—C. T.

—I cannot hold out any hope of Tomatoes doing much good in a place like this. They delight in, and, indeed, positively require, plenty of light, air, and sunshine, and in a dark or shady house run almost entirely to growth, and produce little or no fruit. Cucumbers would be much more likely to succeed in such a house, if kept close, warm, and moist. But decidedly the best kind of occupants for a structure situated as this one is would be *Fernes*, *Palms*, *Dracenas*, and other foliage plants, with a *Lagereria* or some *Fuchsias* in the way of plants.—E. H.

3745.—**Greenhouse plants from seed.**—Almost the only winter-flowering subjects that can be raised from seed sown now are Chinese Primroses (*Primula sinensis*) single and double, and Cinerarias. Seed of both should be sown at once in well-drained pans (or boxes) of a light and porous mixture of loam, leaf-mould, Coco-nut-fibre and sand, covering the seed with a very little fibre only. *P. obconica* sown now and grown on briskly will bloom nicely next spring. Mignonette may be sown in pots in August for winter flowering. It is too late now to sow *Cyclamens* to bloom next winter.—B. C. R.

3764.—**Seedling Begonia-tubere.**—I fear the tubers are all "dead as door nails," and past recall. They were probably kept too moist in the early stages—the soil they are planted in ought to be almost dry until growth has fairly commenced. Of course, the tubers may not have been sound when received, though this is very unlikely, unless they got a touch of frost in transit. I lost more tubers last winter than ever before, owing probably to their not having ripened properly in the autumn, and I have also found them to start more irregularly than usual this spring; but there must be something more than this to account for the loss of an entire dozen.—B. C. R.

3766.—**Calceolariae from seed.**—The Calceolaria is an easily grown plant, and seldom goes wrong if its simple requirements are attended to. I had some this year which drooped and showed signs of dying, but I fancied the reason was an overdry atmosphere, caused by too much ventilation during the drying east winds we have lately had. I gave the house air only at the top in the day-time, and was careful to damp up the house frequently. I lost two plants which were too far gone before I noticed them; the others speedily recovered, and the drying winds not being allowed to blow directly upon the plants, they are again in great beauty. Too much cold well water will also cause the plants to lose their lower leaves. Green-fly too is the desperate enemy of the Calceolaria, and must never be allowed to gain a foothold. A low temperature suits the plants better than a high one.—J. D. E.

3767.—**Carnations (Malmaleon, &c.)**—Striped Malmaleon (Lady Middleton) and Mme. A. Wareque can be obtained from any of the large florists. Mrs. Reynolds Hole, Germania, Mrs. Wier, &c., are much better out-of-doors, and if the flower-spikes are drawn up 22 inches already, they are weak. Even now it would be better to place the plants out-of-doors until the flower-buds show colour; but if the flowers are wanted early, place the plants with the flower-buds near the glass roof. Indeed, this may be better, as they might get a serious check if cold weather set in as soon as they were put out.—J. D. E.

3762.—**Tuberous Begoniae.**—The plants will go out from the boxes right enough, especially if a little firm light sandy soil is used round the roots, to give them a start, and they are kept well watered until they become thoroughly established. But if the plants are now growing fast, and may become crowded if left as they are, it would be better to pot them off singly into 3-inch sizes, as it is seldom safe, even in the southern parts of the country, to plant these Begonias out-of-doors before the second week in June. The others also had better be repotted if they are getting at all root-bound in the small pots they now occupy.—B. C. R.

2739.—**Acacia armata and Oyticus in pots.**—As soon as the plants are done blooming cut them back, leaving 2 inches or 3 inches of the wood made the preceding season. This keeps them dwarf and bushy, and induces the formation of strong growths. When the young shoots are about an inch long shift into the next sized pot, using good loam, with a little leaf-mould for the *Oyticus*, adding some peat for the *Acacia*. Attend well to watering, and as soon as growth is completed put them in the open air till the middle of September. A temperature of about 45 degs. in winter is enough.—J. C., *Byfleet*.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruits and vegetables for drawing. The drawings should be engraved in the best manner, and will appear in our course in GARDENING ILLUSTRATED.

OUTDOOR PLANTS,

A USEFUL PLANT.

COREOPSIS ARISTOSA.

THIS is one of the most showy and, at the same time, one of the most graceful of all late-blooming Composites, and, like its congeners, *C. lanceolata*, *C. integrifolia*, and several others, it is a native of Carolina and the humid marshes of Illinois. It succeeds well treated as an annual in our gardens, and, together with its allies, is valuable in a out estate, affording, as it does, a profusion of bright-coloured, slender-stalked blossoms at a time when really elegant and beautiful hardy flowers are scarce. It was, I believe, introduced to our gardens by Mr. W. Thompson, of Ipswich, to whom we are indebted for so many handsome Composite plants. The illustration represents the natural size of the flower; it is a rich golden-yellow in colour, the disc being spotted with crimson-brown. It is difficult to imagine any golden-tinted flowers more beautiful than those of the different species

views with the flower centres of Holland for interest and beauty. It is a veritable farm, about thirty acres covered with bulbs and placed on the outskirts of the picturesque common of Ham, which may be seen from the famous terrace at Richmond. Mr. Walker, who owns this farm, simply grows the bulb for the sake of its flowers, which, through the best conditions of culture being afforded, are twice the size of those in ordinary gardens. They are skilfully farmed, the soil well manured and cultivated, and the bulbs for the most part lifted each year. It is a ewot picture on a sunny spring day to see the waving masses of glaucous leafage glistening in the sunlight, and the flowers dancing in the breeze. The foliage of the Daffodil seems to reflect the sunlight; it is like a shimmering sheen of silver, anouget which the flowers appear in countless numbers. Note the various forms of leaf, some broad and robust, others like Grass, swaying with the least breath of wind, whilst there is a delightful expression in the flower. The Daffodil repays study. Florists have named about five hundred varie-



Coreopsis aristosa.

of *Coreopsis*, especially when their graceful stems are inserted in a crystal vase and their flowers contrasted with the rosy, purple, and lilac tints of autumnal Crocuses and Colchicums. B.

USEFUL DAFFODILS.

THE Daffodil often meets with unpleasant experiences in an English spring, cold, blustering winds, spells of brilliant summer sunshine, and heavy rains trembling the fair flowers; but, in the face of such obstacles, it has made great strides in popularity during recent years. The outcome of this enthusiasm over its many forms is a remarkable increase in the cultivators of the bulb. We have had species imported from the Pyrenees through Mr. Peter Barr, well known to lovers of the flowers as an ardent enthusiast, and many beautiful kinds have been raised by what is known as cross fertilisation; but there is an element of novelty in a Daffodil farm. I have seen the flower farms in the land of the Dutch, the broad acres of Hyacinths and Tulips that follow the ground with brave masses of various tines from white to the richest orange, yet a Daffodil farm a few miles from London

ties, many, of course, differing merely in degree; but yet there is a degree, and often most marked. Sometimes the chalice, cup, or corona, as the centre is variously called, is elongated into a robust, bold trumpet, or so reduced, as in the Poet's Narcissus, that it is almost abortive. The petals exhibit the same difference in form, this variability of expression increasing the pleasure that the Daffodil fancier evinces in the many children of our wilding Lent Lily and the Poet's Narcissus. The bulbs are

PLANTED in long beds, about five lines in each, the number depending upon the constitution of the variety, and the soil is raised a few inches above the level. This is done to protect them as much as possible from the influence of damp, the Daffodil under cultivation showing its dislike to such conditions by making miserably poor growth. It loves to dwell in the open field, in full exposure to every ray of sunlight that may dart upon the leafage and reflect its silvery tone, repaying the grower with flowers of remarkable vigour, reds health written upon the massive segments. Produce of this character is eagerly purchased in Covent-garden-market even in the face of severe competition from

other lands. We hear much of the Scilly Islands, the Mediterranean region, and other spots in which flowers colour the landscape and provide delightful pictures for the artist, but few know of this English Daffodil farm, where acres of bulbs toss their flowers in the breeze, and the grassy growth bends gracefully as the tall Grass of rich meadow land. The land is very flat, and the whole prospect as one enters the gateway comes before the eye at once. It is strange that, although there are hundreds of kinds, about twelve only are considered of value for the market, and for one of the finest of this select number, named *Horsfieldi*, we are indebted to a Lancashire weaver named *Horsfield*, and this fine flower, with a similar kind named *Empress*, that expands its flowers a few days later, are two of the most largely grown types at the present day. Many an earnest mind is at work amongst the flowers in the suburbs of great cities, and in the North of England the most ardent amateur Soriate are the mechanics who find recreation in their spare time by raising

NEW FORMS of their special favourites. *Empress* is, perhaps, the most popular Daffodil, and is called a trumpet kind, through the shape of the calice or corona, this being like a trumpet, a rich contrast to the pale yellow perianth or segments. It is very hardy, the flowers last long, and make a brave show, as may be seen from their effect in the large bunches at our markets and on the street barrows. In the month of May the grounds at Ham are white in places with the Poet's *Narcissus*, the flowers of the purest white, and deliciously perfumed. The double variety is like a *Gaidenia* in form, and one of the most popular hardy bulbs in England. The Daffodil at Ham are treated in a thorough market way. Men and boys may be seen picking the most forward flowers to expand in their full freshness and beauty under glass, and when on the point of full expansion, they are transferred to a large flower shed, where rows of women work at benches, bunching the fragrant blossoms into "twelves" for the market. The stems are cut of one length, and the peculiar disposition of the Daffodil, the flower being placed at right angles to the stem, permits of ready bunching up. England is an excellent bulb country, but with peculiar persistency we go to the Low Countries for supply, although our native soil will yield, if properly worked, splendid produce.

C. T.

3724.—Moving a Christmas Rose.—Are you obliged to transplant? If not, I should say let the plant remain undisturbed, as removing old-established Christmas Roses is fraught with some danger. In moving old plants the best way is to divide them into two or three pieces, so that the roots come into contact with fresh ground. The roots are very brittle, so that lifting must be carefully done, and as much of the old earth as possible must be worked away from the roots. I have found the best way to effect this is to work away a good portion with a pointed stick, and then wash away the remainder by pouring water on the roots.—J. C. B.

3771.—Flowers for a sandy soil.—It is a matter of some difficulty to grow hardy flowers successfully in such porous soils, but much may be done with deep culture and mulching in the summer-time. The ground should be trenched 18 inches deep, so that the root can go down for moisture. Planting should be done in the autumn, or early in winter, and at the beginning of April. I should mulch with two or three inches of the Peat-Moss-litter which you say can be easily obtained in the neighbourhood. Even the hardier kind of Roses may be fairly grown in this way in the most porous soils. A little clay would be of immense value.—J. C. B.

3758.—Plants for a Birmingham garden.—If Lettuce "luxurians," the soil must be fairly rich and good, and probably all it requires is a dressing of lime to sweeten it and enable other things to be grown. Of vegetables, Rhubarb, Celery, Cabbages, Seakale, Scarlet Runners, Dwarf Beans, Onions, and Jerusalem Artichokes, will be more likely to succeed than most others. Of flowering plants you may have *Chrysanthemums*, *Melancholomas*, *Daisies*, *Torch Lilies* (*Tritomas*), as well as

the old White Garden Lily (*L. candidum*), *L. tigrinum*, *L. aurantiacum*, and others, *Veroniceae*, *Evening Primroses*, *Lupins*, *Campanulas* of several kinds, *Doronicums*, *Spiraeas*, *Primroses* (single, coloured, and Hybrid), but no double ones), *Everlasting Peas*, perennial *Phloxes* and *Sunflowers* (*Helianthus*), *Pyrethrums* (if reseau, var. *P. parthenium* fl. pl. and *P. uliginosum*), *Auriculas*, *Thrift*, and some others. You may also sow seeds of *Mignonette*, *Cornflowers*, *Annual Chrysanthemums*, *Helichrysums*, *Asters*, *Stocks*, *Sunflowers*, *Tropaeolums*, *French and African Marigolds*, *Godetias*, &c., and *Petunias*, *Verbenas* (seedlings of both best), *Calceolarias*, *Lobelias*, and *Golden Feather*, some "Germanias," &c., may be tried. The old-fashioned *Marvel* of Peru is a capital town plant, and so is the pretty little "Creeping Jenny" (*Lysimachia Nummularia*).—B. C. K.

3743.—Auriculas in the open air.—The only *Auriculas* that succeed in the open air are the alpine varieties, as they are formed, for in truth they are all alpine plants, and are perfectly hardy; but the great beauty of many of the show *Auriculas* consists in the dense coating of farina (a fine white powder) on the leaves, and also upon the flowers, for although the green-edged have no powder upon the edge of the corolla, the centre part of every one of them has it densely laid on, and a shower of rain—a drop of water even—will scatter the powder over the ground colour and the green edge. The plants can easily be raised from seed, which should be sown in flower-pots or seed-pans early in the spring (February). Seed sown at that time will, with good management, produce flowering plants for next year. By good management I mean pricking the plants out in small seed-pans or shallow boxes, and when they are large enough planting them out carefully where they are to flower, about 9 inches asunder. The plants may remain in the same position for three or four years; but they require to be kept moist at the roots during the summer, and dead or decaying leaves should be removed in the winter. Seeds may be sown now, but the plants will scarcely flower next year. Plants may be had from any good Soriat. Plant them now.—J. D. E.

— "Rus" enquires about growing *Auriculas* in the open air. I should advise our correspondent that alpine alone should be grown. Living near the sea, or otherwise, they should never be placed under the drip of trees. "Rus" can please himself whether he sets seeds or not, or procures plants. If plants are suitable, set in the autumn, say beginning of September, as for some years the weather has been too dry for spring planting. If "Rus" is enthusiastic about the *Auricula*, by all means let him sow seeds under a frame or hand-glass in February, as soon as possible if mild weather. If "Mr. Rus" has read Darwin's work on forms of flowers, he will perceive that the terms "thrum-eyed" and "pin-eyed" are mentioned, which forms when mutually crossed in the *Auricula*, *Polyanthus*, and other members of the *Primrose* family, are sure to be productive of seed. Green, grey, and white, colts included (not alpine), not to be grown outside. These are especial pets of the Soriat. The least shower of rain washes the meal off the plants, and their beauty, although they possess thickness of petal, is destroyed for the season.—F. M. KENDERLINE.

3740.—Lily of the Valley and Carnations.—It is easy to have Lily of the Valley before Christmas by potting up the crowns as soon as they can be obtained. Start them into growth at once in a forcing-house, and if there is a gentle bottom-heat the plants will do all the better, for the bright-green leaves will be produced with the flowers; the flowers will come without the leaves if there is no bottom-heat. The Carnations usually grown for profit are the *Malmalones*, the pink and bluish variety. *Mme. Arthur Waroquet* is a crimson form, and *Lady Middleton*, a striped form, are in cultivation, but not often grown for market. *Germania* (yellow) is a good market variety.—J. D. E.

3818.—Phlox Drummondii.—I always peg down the shoots of this *Phlox* once, when they have grown 8 inches or so long. If the plants showed any sign of not covering the soil properly I should not hesitate to peg them down even a second time. If they are not pegged

down at all the plants must be put out closer together to enable the bed to be filled; there is then a risk of the shoots growing too tall towards the autumn; if this should be wet the leaves are apt to rot, and thus render the bed unsightly before the flowering season is past. It is not necessary to plant anything as an edging to a bed filled entirely with this *Phlox*; it makes a very good edging in itself.—S. P.

— It may be grown with or without an edging to the beds of a different kind of plant. Large beds, I think, look best with an edging of some contrasting plant round them. The *Phloxes* will make the best mass pegged down, as the habit without pegs is straggling and rough.—L. H.

3872.—Seedling Violets.—Far better to get a few roots of the *Czar*, if you require single Violets for flowering in the open, or a few plants of a double sown sort, if you have a cold frame in which they can be put in September. These will give you blooms all the winter. Most likely these seedlings will be useless when they come into bloom. Violet culture is simple. Well dig a piece of ground in the open, or if at the foot of an east wall all the better. Do not make it too rich or the plants will run all to leaf. Plant the runners singly in rows 10 inches wide. Every bit with a root attached will grow, although it is not wise to make them too small. Keep the plants shaded and watered for a week or so after planting if the weather is hot and dry.—S. P.

— Certainly not a day should be lost in transplanting the seedlings, which if fairly strong now will make good plants by next spring. The ground should be well dug over and rather liberally manured, and the seedlings must be kept regularly moist throughout the summer. Most, if not all, of them will flower next spring. Be sure to make the soil quite firm around the roots.—B. C. K.

— The seedlings may be transplanted and well watered any time when large enough. The strongest will bloom next spring, but not so well as plants obtained from runners, or even by dividing old roots.—L. H.

3827.—Wallflowers, &c., from seed.—It is really not advisable to waste time over your own seed now that seed can be had so cheaply, and from such good strains of each. If "Amaturias" however, is desirous of saving his own, fertilisation is not necessary. All that is required is to keep each kind distinct, by growing the plants clean away from any other plants of the same family, or the seed is certain to be mixed; the pollen is carried from one to the other by insects. When the plants are in flower, any that exhibit traces of a want of distinctness or inferiority in habit of growth should be destroyed. This weeding-out of undesirable plants tends to keep a good strain of any kind of flower in perfect condition.—S. P.

— It is not necessary to fertilise these or Sweet Williams artificially for seed purposes. But to improve the stock pull up all plants bearing inferior flowers as soon as their character can be seen.—L. H.

3820.—Tropaeolum speciosum and Tussilago fragrans.—Both are perfectly hardy in any country in England. The former is not easily established in any situation, except in a northern exposure; indeed, it seems quite useless to attempt it anywhere else. It seems to require a cool base for its roots, and then should have protection from cutting winds until it is 1 foot high. A few slates set on edge will effect this around the tender shoots. It is not partial to any kind of soil, but should have abundance of moisture about the roots during dry weather. The *Tussilago* will grow anywhere, but the flower-stems are not hardy. They need protection; otherwise the plant is hardy enough at the roots.—S. P.

— The *Tropaeolum* is perfectly hardy in any well-drained soil, not only in Surrey, but in quite the north of England as well. In the south the great thing is to keep the plants cool, hence they thrive best on the north side of a wall or building of some kind; they seem to thrive best in a rich moist soil, composed largely of leaf-mould, etc., with some sand. *Tussilago fragrans* is a perfectly hardy native plant, and will not only grow but increase rapidly as well in any kind of soil of a fairly free and good description.—B. C. R.

— *Tropaeolum speciosum* is an easily grown plant if the climate suits it, but it cannot thrive in a dry soil and an atmosphere well on the dry side. It is a Chilean plant, but is quite hardy. It is seen at its best in the moist climate of the south-west of Scotland, where a traveller had seen three of four times and always found it riping. He enquired of a native "if it always rained here?" "Na" was the laconic answer,

"It somotimoo snaws." In County Wicklow, in the garden of Phineas Rial, Esq., I saw it clambering over the garden walls and smothering the trees with great masses of its scarlet flowers. Mr. Paul grows it and flowers it in his nursery at High Beech, Essex, but it does not succeed with me in another part of the same county. The plant makes long underground rhizomes, and if planted in a soil that is almost constantly moist will succeed very well. A peaty soil suits it. *Tusilago fragrans*, or, more correctly, *Petasites fragrans*, is an easily-grown plant. It produces its flowers in February amid frost and snow sometimes. These are white and very sweetly scented. I find it succeeds admirably under a wall, where the flowers have a better chance to come to perfection. They flower best under a south wall, but the plant itself will grow quite as freely with a north aspect. They will both stand the winter in Surrey.—J. D. E.

— This is a delightful creeping plant, and produces a profusion of bright vermilion-coloured flowers, and is hardy. It would thrive in your Surrey garden perfectly well, if the surroundings are suitable, preferring a moist position, and good deep soil, yet light, whilst in summer a mulch of manure will be beneficial. I have seen this creeper very heartful with its shoots over shrubs, the gay flowers in bold relief. Spring is the time to plant, and when in full beauty this *Flame Nasturtium* is very striking. Coolness and moisture are the two chief things to consider. The familiar *Winter Heliotrope* (*Tusilago fragrans*) is a very easy plant to grow, and, in fact, is almost a weed. If you have a spot in the garden where it is difficult to get anything to grow satisfactorily there you can establish the *Coltsfoot*, thriving even in the shade, therefore useful for the shrubbery. I know an old garden where against the rockery in the shade there is a large mass of this flower, and it is perfectly at home in the poor soil. The flowers are of a pale-purple colour, and very fragrant. They may be gathered in winter, and a few in a vase will scent a large room.—C. T.

giving a moderate shift if they are to be grown on to larger sizes; still keep close, and water cautiously for a time, and when a fair amount of growth has been made, gradually accustom them to plenty of air and sun, and remove to a sunny spot out-of-doors for a few weeks in August. Plenty of water and some weak liquid-manure must be given when the plants are in full growth, and the pots full of growth. *Libonias* require much the same treatment, but should not, as a rule, be pruned quite so much as the others.—B. C. R.

— *Deutzias*, being hardy shrubs, should be plunged outside as soon as the growth gets firm, but not forgotten. *Libonias*, being tender, should be kept under glass till July, and then placed outside to ripen growth.—E. H.

SUMMER-HOUSES IN THE GARDEN.

MUCH may be done by simple means to make the garden a pleasant place, and few structures are more effective and agreeable to use in hot weather than summer-houses, a very good form of which is here shown. These buildings

in the ground. In putting out the young plants I always give them 1 foot each way, taking the plants up very carefully and planting them with the trowel, and if the weather is at all dry I give them a good watering. As the summer advances the plants will throw out a lot of suckers, which should be taken off as soon as they appear, for if left on for any time they take the strength out of the plants and thereby loosen the amount of flowers. The Dutch hoe run between them will also help them by keeping the ground clean and free from weeds, as well as preventing the soil becoming baked. In preparing the frames in which they are to bloom, I find that a hot-bed which had been made up late in the summer, and from which all the heat is not spent, is as good as any. It must face south, so as to get all the sun possible. If such a bed is not to hand, make up a hot-bed and let it stand till all the rank heat has passed out, then put the frame on, taking care to allow 1 foot all round, so as to be able to give a lining as the sharp weather comes in. Fill the frame half full of leaf-soil and that from a Cucumber or Melon bed, half of each, taking care to fill the frame so that the plants will not be more than 8 inches from the glass. In putting the plants into the frames take care not to crowd them. The best sorts, I find, are *Marie Louise Comte de Brazza*, and the *Czar*. I also grow a small single one. It is not much larger than our common blue *Violet*, but very free-flowering, very early, and not quite so dark in colour as *The Czar*. I grow the single varieties like the double, only instead of lifting them in the autumn I put a frame over them and let them stop in their summer quarters. By leaving what runners come after September, they will start to flower and keep on till late in the spring; in fact, a few *Violet* blooms can be had all the winter with very little trouble, only just keeping very sharp frost from them. This can be done by covering the frame with litter or Bracken.



OUR READERS' ILLUSTRATIONS: A SINGLE SUMMER-HOUSE. RECEIVED FOR GARDENING ILLUSTRATED from a photograph sent by Mr. Alfred Burgess, Stewart House, Uxbridge.

can either be thatched or covered with living climbers.

VIOLETS FOR WINTER FLOWERING.

Now that the time has come for preparing the stock of *Violets* to bloom next autumn and winter, a few notes on their cultivation may be of use to some of your readers. Many cultivators of *Violets* advocate raising the stock from cuttings, but I have not found cuttings half so satisfactory (besides taking more time) as pegging each runner into some good light soil, as in the case of *Strawberry* runners. I mostly use some finely-sifted leaf-soil, into which the runners quickly root, and in about a fortnight or three weeks they are ready to go out into their summer quarters, which should have a southern aspect, and if slightly shaded from the midday sun, so much the better. Give the ground a good dressing of well-rotted manure from an old hot-bed, and dig it well in to the depth of 1 foot or more, as in raising some clumps last autumn I found roots quite 1 1/2 feet

PLANTING OUT GREENHOUSE PLANTS.

At this period of the year a great many plants that have either finished their blooming for the season, or that do not flower until quite late in the autumn, are transferred to the open air, and the question arises as to whether it is preferable to keep them in pots, or plant them in the open ground, and with many the question of which system will be the best, as regards economy of labour; for with the number of plants usually grown in pots, and daily requiring attention as regards water, there is a great inducement to get a portion of the stock in the open ground, where they will at least be less liable to injury from drought, and the following subjects may safely be planted out at this date, and lifted in autumn, thereby saving a good deal of work, and mostly producing far better plants than by continuous pot cultivation.

CALLAS are now so largely grown for indoor decoration, or cut blooms in winter and spring, that it takes a good deal of space and labour to daily attend to the stock in hot summer weather, but if planted out now, and one good soaking of water will last them for a long time, as the old foliage will then die down, and they will soon start into a sturdy vigorous growth, and make splendid plants for lifting in September.

CHRYSANTHEMUMS: To grow a collection of these in pots means a considerable amount of work, as the waterpot is needed both morning, noon, and night; but very useful plants for decoration and supplying ordinary cut bloom can be grown with far less labour by planting out healthy young plants about 2 feet apart, and

3815. — Treatment of *Deutzias* and *Libonias*.

If the plants require more rooting space now is the best time to repot, giving at least a couple of inches more space. If the pots in which the plants have flowered are anything over 8 inches in diameter they will not require more room. A top-dressing of loam and horse-manure in equal quantities will suffice. In potting do not interfere with the roots any more than is absolutely necessary. A compost of three parts loam to one of peat and leaf-soil will suffice. Pot firm and stand the plants in the warmest end of the greenhouse until new growth is made, afterwards a sunny position out-of-doors, plunging the pots in ashes or Cocoa-nut-fibre refuse, will suit them best. When the newly-potted plants are well established in the new soil copious supplies of liquid-manure twice weekly will be an advantage. Syringe the foliage overhead daily in bright weather.—S. P.

— Cut the plants of the former back at once, more or less, according to whether you want large or small plants next season. If they are desired to increase in size to any extent all that will be necessary is to thin out some of the smaller spray, and shorten the strong branches slightly, but if not they may be cut back quite hard. After pruning keep the plants moderately warm and close, sprinkling them overhead once or twice daily, but giving water rather sparingly at the root. As soon as they have fairly broken into growth again repot,

lifting, and potting just as the bloom-buds are expanding.

DEUTZIA GRACILIS, one of the most useful of all white flowers for forcing in winter and spring, if cut hard back, and planted out now in good soil, it will perfect splendid growth by the autumn. Or a better plan is to let the plants rest for one season, and by having enough stock to force the plants in alternate seasons.

LILY OF THE VALLEY is in such great demand that one can hardly get overstocked with it. Directly my plants cease flowering in pots they are gradually hardened off and planted out in beds between dwarf fruit-trees, where they remain a couple of years, when splendid plump flowering crowns are again in readiness for forcing. Some say imported crowns are the best, but if they treated home-grown ones well they would have no cause to complain, either of the quantity or quality of the bloom.

SIBYRICA JAPONICA, a most valuable plant, as not only the bloom but the foliage is highly ornamental. It succeeds remarkably well on the planting-out system, but needs a moist situation or copious supplies of water at all times. A partially shaded place suits it well, and in the open air it is valuable for out flowers.

SOLANUM CAPSICATRUM (Christmas Cherry) is a valuable decorative plant, and succeeds admirably planted out. I cut the plants down quite close in March, and place them near the glass to break into fresh growth, the young shoots being pinched to ensure plenty of shoots. They are planted out in May, on good soil, in an open, sunny spot. They develop fine heads, loaded with berries, and may be lifted in September.

J. GREEN, Gosport.

HOUSE & WINDOW GARDENING.

FIBROUS-ROOTED BEGONIAS AS WINDOW-PLANTS.

THE Begonia tribe, whether tuberous or fibrous-rooted, are specially suitable for room-culture, for they have a power of adapting themselves to circumstances which few other plants possess so strongly. The great improvement in type which has been effected in both classes of late years, by careful hybridisation and cultivation, is astonishing, and the fact that some of the Fibrous-rooted Begonias have been fertilised with the pollen from fine large-flowered Tuberous Begonias, has opened out a prospect of endless new varieties, combining both the wonderfully rich colouring of Tuberous Begonias with the perpetual flowering habits of those with fibrous roots. One of the finest of these is "John Heal," with bright-carmine blooms about 2 inches in diameter, borne in racemes containing eight or nine blooms each, which stand well above the foliage, making a very handsome table-plant, which will flower several times in the year, according to the amount of warmth they receive and other care. None of them are difficult to grow; they only need careful repotting without much disturbance of the soil. Whenever the pot becomes full of roots, with a little cutting back into shape, if necessary, when they will burst again into full bloom in a sunny window or a warm greenhouse. Leaf-mould and turfy-loam, with a little soot and sand, suit them better than too much manure, which should be very old, if used at all; but they like a top-dressing of rich soil when in bloom, and a plentiful supply of water. Begonia Carrieri, a most floriferous variety with pure white flowers, can be had in bloom all the year round by means of cultivating two or three plants, which can alternately bloom and rest, but for this, of course, fire-heat is necessary in winter. One of the best varieties for early spring is B. Knowsleyana, with pink blooms of a delicate shade. B. Gloire de Leaux, too, is excellent for spring work, and has the additional beauty of rich-bronze foliage, with bright rose-tinted flowers, which are most useful in January, when the first bloom for the year opens. B. semperflorens gigantea, with enormous heads of rich-carmine bloom, is a splendid plant, constantly flowering throughout the year, and B. Weltonensis is perhaps the best Begonia of a pink shade for late autumn and winter work. Every one of these make excellent decorative plants for the table, and do not appear to object to the atmosphere of a room so much as many other flowering plants. But they will not stand gas, which

makes them drop their pretty blossoms immediately, and it is well to protect them from sharp draughts, which sometimes have the same effect. Soot-water given once or twice a week in a clear, weak state will suit them well whenever they are growing fast and making fresh bloom; but they do not need it when they have been lately repotted.

L. R.

Dwarf Arum Lily (Richardia nana) for a room.—The great popularity of the ordinary Arum Lilies (Calla Richardsoniana) is equalled but by few other flowers; but from their large size they are unsuitable for table decoration, and are, therefore, but little grown in rooms, as they otherwise might be. This defect (so far as table decoration is concerned) is quite removed by the introduction of the Little Gem, a Calla or Arum Lily, exactly corresponding with the larger variety in every particular except its size, which is about half that of the ordinary Arum, the flowers being pure-white, of which it throws up four or five blooms from one crown, the whole plant being usually about 18 inches in height. Nothing can be more perfect than a well-grown "Little Gem" Arum Lily for the drawing-room, or centre of the dinner-table, the pure white blossoms and handsome shining foliage being singularly attractive. The "Little Gem" can be cultivated exactly like the older variety—i.e., turned out of its pot, as soon as it has done flowering, into good rich garden ground, a trench, made as for Celery, being an excellent place for this plant. Here it will gradually ripen its leaves during the summer, and become very strong, so that when the roots are raised early in September (before frosts begin) they can be divided into several separate single roots or crowns, each of which should be placed in a 5-inch pot, with rich soil and good drainage. After standing for a week or so out-of-doors in the shade (the pots resting on a bed of ashes), they should be removed to a sunny window, where they will bloom about January, if the temperature be kept up by a dolly fire. Green-fly must be sponged off directly it appears, and the foliage kept clean; a plentiful supply of water is necessary to all Arums, as they are semi-aquatic plants, and they must not be neglected in this particular, even during their time of rest in summer.—I. L. R.

THE KITCHEN GARDEN.

CUTTING ASPARAGUS.

STRANGE as it may appear, there is a great difference of opinion on what may seem to some people such a simple operation as cutting Asparagus. Cutting off the tops of any plant will exhaust it more or less, and, as is well known, it is the continual cutting off of the heads of any perennial weed or plant which will kill it in time, and which is adopted in many cases to destroy obnoxious weeds. This illustration holds good in the case of Asparagus. Judging by the extent to which outlog is indulged in by many people, one would think that this homely vegetable was endowed with everlasting life. In scores or even hundreds of instances the languishing state of the beds is entirely due to overcutting. In some instances employers are to blame for this, for they will keep on having Asparagus as long as possible. Often have I been called upon for extra dishes of Asparagus after cutting had been given up, but I have always been able to show how very unadvisable it is to cut late in the season, and that if cutting is indulged in late the plants will be weakened accordingly and possibly fail to give good heads the following season. Another reason for late cutting is that Cauliflowers and Peas are often late. If

LATE ASPARAGUS is looked for, the beds will have to be provided for the purpose, and to be done away with when worn out or rejuvenated by foregoing cutting in alternate seasons. This latter is a capital way of imparting strength to weak beds. Unfortunately, it is only where there are few Asparagus beds that weak produce predominates. I leave young beds alone for two or three years after planting, so as to enable the plants to gain strength, and the principle holds good with other beds. Upon looking over beds when cutting has not long commenced, it is no frequent occurrence to see young and weakly

shoots growing ahead, the reason given by those who are responsible for the cutting being that they are left to give strength to the roots, as, being weak, they are not fit for cutting, and are left accordingly. This is certainly a very erroneous opinion. Leaving the smaller growths prevents others from pushing up, and instead of the weak stems gaining strength they do not add to this in the least. The best course is to cut all as they appear until the time arrives to cease cutting, and then to allow all to grow ahead. Certainly, if there are any weak crowns, then these should have been marked and left uncut until they are in a sufficiently strong state to bear the strain. Whether the principal part of the stems is required

BLANCHED OR NOT is a matter of taste, but as a rule the non-blanching stems find the most favour. But whether the stems are needed blanching or not, some people when cutting appear to think that it is part of the routine to cut low down into the bed so as to procure the desired length of blanching growth, with the result that if they are not adepts at the work, with the constant wriggling of the knife they damage two or three incipient heads in the process. I dare say it will have been noticed that even if a good length of blanching stem is sent to the kitchen the greater portion is cut off and thrown away. The best way is to move a little of the soil with the knife at the base of the stem, when the length required may be easily removed. Earthing over the crowns above the surface with leaf-soil and sand is certainly the best method for procuring blanching stems. All that is necessary is to place small hillocks of the material over the crowns, and as soon as the tips rise above the surface, the soil can be quickly moved from the base, and the stems cut off level with the surface. The stems also thicken more under the influence of the blanching material. A.

3800.—**Cutting Asparagus.**—No, decidedly not. Do not cut off the small growth; allow it to grow as freely as possible. After the last pieces are cut from the bed early in June, give the bed copious supplies of liquid manure to induce as free a growth as possible being made. Failing liquid manure, sprinkle dissolved bones over the soil, and water the beds with clear water. Just a covering with manure will be sufficient. It is a good plan to support the Grass on the beds when it has become developed in some way or other to prevent injury from wind. Thrust a few short Pea-stakes in amongst the plants; this prevents their awaying about, and saves the roots from being broken.—S. P.

—Cut off all the small growth so long as cutting continues. If the small shoots are allowed to grow they will, of course, get stronger, but it will be at the expense of the stronger crowns. When everything is cut till the end of June, and the whole then allowed to come away together, the strong growths will keep down the small spray, which is really of no use.—E. H.

3834.—**Japanese! "Cucumber."**—The statement that this Cucumber is very hardy and that it can be grown like Scarlet Runners must be received with caution, as I do not know anyone who grows it in this country. I am doing so for the first time, and although the plants thrive rapidly under glass, they have a tender look about them, which does not impress one of their capacity to adapt themselves for open-air culture in England. I shall, however, turn some plants out-of-doors shortly to give them a fair trial.—J. C. C.

CHRYSANTHEMUMS.

3744.—**Bone-meal for Chrysanthemums.**—This is excellent for mixing with the potting-soil for Chrysanthemum, but it must be of powdered bones, not the shavings from "vegetable ivory," a material sometimes sold for horticultural purposes instead of bones, but it is always useless, and may often be injurious. Good bone-dust, which can be obtained at 9s. or 10s. per cwt., is the cheapest and best manure for Vines, Chrysanthemums, and many other garden crops. I use it with decayed stable-manure as follows: Three parts good loam, one part leaf-mould, one part decayed manure, and a 7-inch portion of the powdered bones to each barrow-load of the mixture.—J. D. E.

3833.—**Early Chrysanthemums.**—I have placed the varieties in their order of

flowering as near as possible. The treatment the plants receive may make a difference to some sorts. Fernand Feral, Stenstead Surprise, Jeanne d'Arc, Lord Wolseley, Novelty, Lady Churchill (single), Acquisition, Puritan, Comtesse de Beuregard, Mons. J. M. Pigmy, Lord Alcester, Cloth of Gold, the Three Christines, Jardin des Plantes, Violet Tomlin, Etelle de Lyon, and Thunberg. For cutting down those numbered thus—1, 3, 4, 8, 9, 14, 15, and 16, are the most suitable varieties.—E. M.

ORCHIDS.

LADY'S SLIPPERS.

Of all the Lady's Slippers, *Cypripedium Manleyi* is, I think, one of the best. It is simply a form of the old greenhouse kind, *C. Insigne* (here figured), but then it is the best form, and far more beautiful in leafage and blossom than that well-known kind. The white upper sepal, with its exquisite mauve-purple blotches, is very attractive, and in a cool, airy house each individual flower endures quite fresh for a month or even six weeks. Anent *C. Insigne* and its forms, named and otherwise, it is interesting to know that they grow and bloom better in a cool, airy atmosphere during the summer and autumn months than when grown in a close, high, and moist temperature. Some slight shading from the direct glare of sunshine, and a skiff with the syringe morning and evening, keep them clean, and encourage the flowering growths. Some use peat, but charcoal and living Sphagnum is a safe and satisfactory compost for this and many other kinds. B.

DENDROBIUM DENSI-FLORUM.

I AM asked by "C. H." to give him the full particulars of the management of this old species? Now this plant has been introduced upwards of sixty years. It is found in various places in India, mostly in the Northern part, growing at about 2,000 to 3,000 feet elevation, and a good variety of it well deserves the warmest encomium. *Dendrobium densiflorum* belongs to the section called *Calostachya*. These plants mostly produce their flowers in long racemes, and it is a very good type of the section, which includes, amongst others, *D. thyrsoiflorum*, *D. Farneri*, *D. suavissimum*, *D. ohyrantoxum*, and *D. Palpebræ*, and all have about the same character—i.e., that, beautiful as are the flowers, they are somewhat short lived, and do not remain long in beauty. It is an evergreen plant, retaining its leathery leaves for several years. The bulbs grow to a foot or more in height, and it is from the top of this growth between the leaves that the dense spikes appear, and it is a species which sometimes would put the annual pruner of bulbs to the right-about, for depend upon it, the grower that has the greatest number of old bulbs left upon his plants which have not flowered will always stand the best chance of having the greatest show of flowers upon his plants. Sometimes these bulbs continue to develop flower-buds long after the leaves have been shed; they usually bloom about this time of the year, or a little earlier, and they last about five days or a week in their prime, but care must be exercised with them when in flower to make them last as long as possible, as the very dense spikes, with its deep-rich orange-coloured flowers, are very conspicuous and showy, and they may be kept upon the plant as long as presentable without any harm to it. There is a very curious thing about the lasting of *Dendrobium* flowers, for the blooms of *D. Deari* will last for as many months as *D. densiflorum* will days, and this is a fact which I cannot find a solution for, but I should like to be able to

explain it. This plant should be potted in well-drained pots, using for soil good peat-fibre and chopped Sphagnum Moss in about equal parts, using in the soil an occasional lump of sharp sand. Pot the plants a little above the soil, and during the summer time the plants should stand in a nice genial East Indian temperature, but in the winter they should be kept in a house in which the temperature seldom or never falls below about 60 degs. during this time; although they should be kept very much drier, they should not be allowed to suffer from want of water. MATT. BRAMBLE.

ODONTOLOSSUM REICHENHEIMI.

THIS species I have received from "A. L.," and I am very sorry to hear the complaint of neglect in not answering the previous communication; indeed, I do not remember ever having seen it, but I will do all in my power to meet the wishes expressed in this last. The name of the flower is given above. This species, like many others, is very variable in its characters—indeed, so



Cypripedium Insigne.

much so that the name is swamped by some authors in the name of *O. levei*; but "A. L." sends the flower which is fairly represented to be this plant, whilst the plant known as *O. levei* is smaller, and much less distinctly marked. *Odontoglossum Reichenheimi* is a strong-growing plant, producing a fine spike of bloom, which lasts long in perfection. In the case of my correspondent, he says the plant had eleven flowers on the spike, and it has been in flower two months. Now the number of flowers mentioned is small, as I have seen some two dozen and thirty blooms open on the same spikes together, and "A. L." may look forward to seeing his producing as many when the plant becomes stronger, and this can only be gained by proper treatment. The plant is a native of Mexico, where it grows upon the Oak-trees, which are very abundant on the mountains about Michoacan. It is a plant which has a somewhat wide distribution in that country, always being found at an elevation between 7,000 (Seven) and 8,000 feet, so that it requires a cool house to be successful in its cultivation, but care must be taken not to let the plant get

dry at any time in the year. Many people used to dry this plant in the winter, and its large and stout growths and-bulbs gave them a plea for so doing; but I have come to regard this as a wrong standard by which to measure plants, and I have found that many of the plants which have the largest bulbs require the most water and watching through the dry season, and it has been my experience with the plant now in question, and if the plant is allowed to shrivel there is sure to be a weakening of the growth the following season. Therefore, let the pot for its reception be thoroughly drained, and using for soil the fibre from good brown nland peat, with about an equal part of good Irish Sphagnum Moss, chopped up moderately small, so that it may mix with the soil the better. When growing during the summer months, the plants should be well supplied with water, and a good moist atmosphere should be maintained, and the same, but in a less degree, during the winter, keeping the temperature at about 48 degs.

MATT. BRAMBLE.

A SELECTION OF ANNUALS.

MANY owners of gardens do not grow annuals from the impression that they are weedy looking, and very brief in their duration of flowering, but this is entirely owing to making a poor selection from the long lists published. The following annuals are all reliable, and under good cultivation cannot fail to please—viz.,

ANTERS (Chias), in great variety, of which the best known types are the Victoria, Quilled, Globe-flowered, Peony-flowered, and Bouquet; these should be sown in boxes or pots in March, and grown on in a cold-house or frame, pricking them out as soon as large enough into other boxes, and gradually hardening them off, until by the middle of May they will be fine, sturdy plants, which make a fine display in beds or borders, and either for effect in the beds, or as cut flowers, there are few plants to equal them.

CANDYTUFTS, white, purple, and crimson, are very effective in large clumps in the mixed borders, sown where they are to flower; the colours are decided and striking.

CHRYSANTHEMUM CORONARIUM is one of the most continuous flowering plants we have, and makes an excellent background plant for mixed borders, or for beds for either effect or for cut flowers.

CAILLARDIAS, in several varieties, of which *G. plecta*, *G. Loreoziana*, and *G. grandiflora* are the best, are very beautiful and continuous flowering plants; the colours are very rich and varied, and totally distinct from any other flower in cultivation. I sow in heat in February, and grow the seedlings on in a cold frame until May, when they are planted out with other bedding plants, and flower continuously until late in autumn.

LINUM GRANDIFLORUM (the Flax-flower) is one of the best to sow where it is to flower, being quite hardy, and very little trouble. Sown in beds, clumps, or as edgings, it makes a fine display of brilliant colours.

LOBELIA SPECIOSA is probably the best of all dwarf edging plants that can be raised from seed. Sown under glass in February, and prick out in boxes as soon as large enough, and pinch out the points to ensure a dwarf, bushy growth that will flower profusely when planted out in May.

MARGOLDS are very useful plants, especially in dry soils, as they withstand drought, and flower most continuously the whole season. The dwarf French is excellent for edgings, and the taller African variety for backgrounds.

MIGNONETTE is indispensable in oven the smallest garden. Orew it well by thoroughly preparing the site, and sow seed thinly in March where it is to flower. "Machet," "Crimson Giant," and Golden Queen are very superior sorts.

NASTURTIUMS, especially the dwarf kinds, are very effective "bedders," if the seed-pods are kept picked closely.

STOCKS, Ten-week especially, are splendid plants, if only you get a good strain, and grow them well. Sow the seed in boxes under glass, and when large enough harden off and plant out in May. They make perfect pyramids of bloom.

SWEET SULFAN has lately become very popular as a cut flower, its beautiful feathery bloom being very effective. It may be had in several distinct colours, and can be sown either where it is to flower, or else sow it in boxes and transplant as soon as the plants are large enough to handle. J. GROOM, Gosport.

FRUIT.

FORCED FIGS FOR MARKET.

If one fruit is more a luxury than another, it is the Fig in a forced state, and few that come into Covent-garden are so liable to sudden fluctuations as regards marketable value. Unlike the Grapes and some other fruits, there can scarcely be said to be any steady demand for early Figs, so that comparatively few growers make a feature of them. Sometimes, when the season happens to be more than usually brisk, Figs fetch long prices; at other times they are a drug, scarcely to be got rid of. Happening to be one day in a fruiterer's establishment in the centre row when a box of Figs came in, the proprietor remarked: "What a pity that these did not come in yesterday! They were wanted, and I could have allowed a good price for them; to-day there is no demand for Figs." Later on

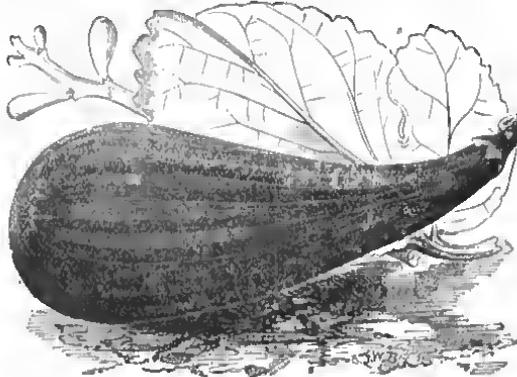


Fig "Black Bordeaux."

in the day I was informed that they were sold for just half of what they would have realised the day before. This is a fair illustration of how wonderfully the price obtainable for this fruit may vary, even in the course of a few hours. I should not advise that Figs be grown in pots for profit; the labour involved would be, I think, too great; but, planted out, they no doubt pay very well, taking one season with another. A successful grower of early Figs for market has them planted out in a open-roofed house, the roots having the choice of an inside and outside border. The trees are trained to the roof, or, rather, to a trellis some 12 inches from it, and the fruit thus grown is good and handsome. In France, more especially in the neighbourhood of Paris, Figs are forced to a considerable extent, for this fruit appears to be more popular the other side of the Channel than with us. The method there followed is much the same as above detailed, but the roof is generally formed of lights, which are removed during a portion of the summer in order to thoroughly harden the wood. The Black Bordeaux Fig (here figured) is a popular early market fruit. B.

STRAWBERRIES FOR EARLY FORCING.

DURING the last few years we have had several new kinds that when put on the market were to eclipse all others, but so far they have not made much progress in ousting well-known kinds. Noble I gave up after two trials, as fully one-half of the fruit did not set and the other was abortive, only a small percentage finishing, these being deficient in colour. For later use it is excellent when brought on slowly in cold frames. This treatment improves the flavour, and the colour is also good. La Grosse Noirée is an excellent variety in every way, but one that I cannot advise for fruiting in February or March. With me it will not throw its trusses sufficiently high enough, and the flowers will not part with the calyx, though brought on slowly and grown in a slight bottom-heat. My reason for mentioning this circumstance is that in some nurserymen's fruit catalogues I have found La Grosse Noirée described as the best for earliest forcing. For later work to come in in April, it is one of the best varieties we have. I gave John Buckle a trial last season, but it failed to produce fruit

up to the advertised quality or in quantity. King of the Earlies is a miserable small fruit not worth attention if grown by the side of Vicomtesse Hérolet de Thury, this in my estimation being the best Strawberry for early forcing. I have given Pauline a trial; it certainly is early, but its shape condemns it, and I cannot advise it for pot-work. I have a hotter opinion of Competitor, but would prefer to give it another trial. I am pleased with its colour and flavour if it sets freely when hard forced. I do not think we have yet found a Strawberry to equal Vicomtesse for early forcing, and my note refers to fruits ripened in February or March. To follow this, Keens' Seedling will not be easily beaten. It is an easy matter to get fine fruit of forced Strawberries in May, as when the difficulty of setting is taken into consideration, there is not so much merit as when a fair dish of Vicomtesse or any other is shown two or three months earlier. Another point is that many gardeners

cannot devote much room to the plants, so that Strawberry forcing is carried on under great difficulties. One great advantage in growing Vicomtesse for early work is the way it finishes in small pots. It will also do in a moist house, and is less subject to insect pests than some kinds. It would be interesting to know if large growers succeed well with these new kinds. So far as I have seen, very few of them appear in the market till April comes in, some even later, so that I see little merit in them, as we have plenty of good kinds that come in at that period with ordinary forcing. G.

SUMMER PRUNING OF FRUIT-TREES.

THE exceptionally brilliant weather we have had all through March and April has had a very marked effect on vegetation generally, and on fruit-trees and bushes in particular, the growth being already quite a month in advance of last year. Under these conditions it would be unwise to stick too closely to dates for any given operations, as exceptional seasons call for exceptional means to cope with them, and what is called summer pruning will need attention in advance of what we ordinarily call summer dates. I am aware that great differences of opinion prevail as to pruning, but so long as fruit-trees are grown as artificially-trained trees so long will the necessity for pruning remain. Taking wall-trees as the most favourably situated for early growth, we find the following needing attention:—

APRICOTS, of which the crop is generally good, need hand-picking of all curled leaves, and pinching of the shoots not needed to be trained in for another year. Hard pruning is decidedly injurious, but allowing the shoots to grow entirely unchecked is far worse loss of force needed to swell the crop.

PEACHES AND NECTARINES need great care in the early stages of growth. Once get them evenly covered with clean, healthy foliage and little difficulty is experienced the rest of the year; but when entering into growth they need looking over at least twice a week, picking off all shoots that are not needed, and blighted and blighted leaves, dusting with sulphur if mildew appears, or syringing with Tobacco-water if black-fly gets into the leaves.

PLUMS AND CHERRIES are not usually so difficult to manage as the preceding, but they grow very rapidly at this time of year, and the fore-right shoots need shortening, and all that are needed as leaders or for filling bare spaces should be lightly fastened to the walls or trellises. Syringe heavily to wash off all old blights and keep down red-spider.

PEARS on walls and trellises are growing very fast, although heavily cropped. Shoots not needed for extension should be pinched to about half-a-dozen leaves. I usually thin out fruits and shoots at the same time, as it can best be done by degrees, taking off the worst placed fruits and shoots until both crop and shoots are reduced to what are needed to remain.

APPLES, being late in starting into growth, do not need early attention in the matter of pruning; but in common with other trees they are exceptionally forward for the period of the year, and pinching of the points of shoots that crowd or shade the fruit should be done at once. Seldom has such a crop been seen as there is set this year, and more attention should be given to all the details of culture to help the trees to perfect the crop.

VINES on open walls are more frequently rendered barren for want of timely attention to summer pruning than any other cause. Directly the shoots are long enough to discern which are the ones to retain, thin them out at once, and pinch the points of those left on joints beyond the bunch. If half the attention lavished on Vines under glass were bestowed on open-air ones, very decent crops would be the rule, instead of the exception.

BUSH-FRUIT, especially Currants, are greatly benefited by having the points of the shoots pinched out as soon as they have made half-a-dozen leaves. Try it this year, and you will make it an annual custom afterwards. The fruit will be finer, and next year's wood fuller of fruit-buds than if left unpruned.

J. O., Gosport.

3826.—Barren Strawberries.—Probably the soil is "sick" of this particular crop. You should make a new bed in a fresh place, planting runners obtained from a fruitful bed elsewhere. It will be worse than useless to propagate the barren plants. A good dressing of burnt earth and a little lime might enable the old bed to grow fruitful plants; but the safest and best way will be to give a change of ground.—B. C. R.

Occasionally a few Strawberry plants in a bed will become barren, and these, owing to their not having to bear the weight of fruit, produce the earliest and best runners; inexperienced cultivators take the runners from the barren plants, and all such runners are likely to produce barren plants again. Whenever a barren plant is found in a bed of Strawberries it is much better to dig it out. It is no good as a fruit-bearer, and deceptive as a breeder of runners. If this is constantly practised barren Strawberry plants will soon disappear from the garden. The treatment of the plants was such as should have produced good results.—J. D. F.

Strawberries should have a change of land for every fresh set of plants. Planting one crop after another on the same land may not be the cause of barrenness, but it is bad culture, and might lead to it.—E. H.

3822.—Treatment of a Pear-tree.—From the information contained in this query I am led to believe that the roots require pruning to check green growth, although at the present time it is nothing unusual for the new shoots to be 15 inches long. Some Pear-trees do not give annual crops of fruit, neither do they blossom freely every year. The young shoots ought to be shortened back, as they grow to about 4 inches of the base, to admit of the spurs receiving light and air, with a view to maturing the wood in the autumn. At the end of September a trench should be cut around the tree 3 feet away from the stem if it is under ten years old, severing all roots that are met with. If the tree is older, 1 foot more will be necessary.—S. P.

This is a case where root-pruning may have done good. The tree is evidently over-vigorous, and forms strong young wood instead of blossom buds. If the shoots are cut off now a more numerous family of them will be produced in the place of those that have been

removed. It is not stated whether the tree is a standard or a dwarf, or it may be an espalier, and perhaps a wall tree. If it is an espalier or a wall tree it must be cut in well annually, but if it is a standard or dwarf the best way to throw it into blossom is to allow the young wood to develop considerably, merely thin it out where too thickly placed and cut the points out of the young shoots. If the tree is an espalier or a wall tree it ought to be root-pruned in November.—J. D. E.

— The tree is getting a little out of hand, but there is nothing you can do now. Early in October root prune half round the tree, and watch the result. Perhaps the other half may not require to be pruned for two or three years.—E. H.

3833.—**Vines bleeding.**—I cannot tell you how to stop this. I have known many attempt to do so, but always failed. You need not get anxious about your Vines, as they are not likely to be any the worse for it—at the same time it is not desirable that they should behave in this way. Another year prune a month earlier, and keep the Vines cool. No Vines ought to be subjected to a higher temperature than 45 degs. directly after they are pruned. The bleeding will probably continue—only in a lesser degree—for several weeks longer.—J. G. C.

— It is very rare for a Vine to bleed after the leaves expand, and therefore I conclude the bleeding is now stopped. In future apply the styptic at the time of pruning before the sap rises.—E. H.

3753.—**Vinery.**—Forty feet is rather wide even for a large and lofty vinery, and perhaps it would be better to erect a double span-roofed house, covering the whole of the ground. Each house, or span, would thus be 20 feet in width, and the side walls should be 3 feet high, with (preferably) 3 feet of glass above that, which will bring the upper plate, or eaves, 6 feet from the ground, and the height from floor to ridge should be 14 feet or 15 feet. Provide plenty of ventilators along the ridge (on both sides), and every alternate light, at least along the sides, should also be made to open. Unless you want one house to come in after the other the cheapest plan will be to build the two outside walls only (of good 9-inch work, of course), and support the central ridge plank (which must be at least 18 inches wide, and proportionately thick, with a piece of 5-inch by 3-inch quartering bolted along each edge of the upper side, so as to form a gutter), on substantial brick pillars, 5 feet or 8 feet apart. But if a different temperature has to be maintained in each house there must be a divisional wall, of course. Artificial heat is not actually necessary, at least if Black Hamburghs, &c., stons are to be grown, but a couple of rows of 4-inch piping on each side will be found a great advantage, and some heat is absolutely necessary for Muscats, &c., or if the Vines are to be forced. Plant the Vines in February or March, when starting, at 2½ feet apart, if to be grown on the single-rod system.—B. C. R.

3830.—**Strawberries for market.**—I have known the plants die away as described, but I believe it is a very uncommon occurrence. Some very light soils do not suit Strawberries, and if your soil is of this description you will find Black Prince, President, Garibaldi, Eleanor, or John Powell succeed better than Paxton's, "Queens," &c. I should also recommend you to try the effect of a dressing of burnt earth, soot, and a little lime on the parts of the ground where the disease appears. In my experience the best substitutes for stable-manure for this crop is Thomson's Vine and Plant manure.—B. C. R.

3824.—**Stopping Melons.**—As a rule, the fruit forms on the young shoots at the second joint from the base where they push from. In some instances, though, they form at the first. It is not advisable to stop the shoots until the fruit has been fertilised a day or two, except it can be done before the fertilisation takes place, for fear of the lateral getting too long and overcrowding its neighbour.—S. P.

— These in all good gardens are now trained to a trellis, so that the operator when attending to the plants works underneath them. The best way to treat them is to allow the leading shoot of each plant to run half way up the trellis. Stop the leading growth there, and laterals will be abundantly produced. Stopping a shoot immediately the blossom is fertilised might cause the fruit to drop off. When it is

seen the pollen has taken, stop the shoot at once two leaves beyond the fruit. In setting Melons, it is very desirable to wait until as many female blossoms are open as it is intended the plant should carry fruit, and set them all as nearly as possible together.—J. D. E.

— I usually stop the laterals of Melons, when a couple of leaves have been made. The object of stopping is concentration. But when a leaf or two is left, there is always a force at work beyond the fruit to carry on the circulation, and this, I think, is what is required. A Melon may have been operated upon without being fertilised. As cultivation has a good deal to do with Melons setting, or otherwise, Melons growing in a firm bed of good loam will usually set their fruit better than if grown in lighter, looser soil.—E. H.

— No, it is not advisable to stop the lateral growth of Melons directly the flowers have been fertilised, for the simple reason that unless the plants are grown in a house on the extension system the laterals do not extend after the fruit once begins to swell. If the growth is stopped at, say, the third joint beyond the fruit, it is not unusual for the leaves to die away gradually. The fruit, it appears, monopolises all the strength of the shoots, and as a consequence the leaves diminish in size, and when this is the case indifferent flavoured fruit is the result. It is an interesting question, as "Brightspade" remarks, but it is one of those matters that can only be dealt with by the condition of the plants to be operated upon. If they are weak, depend upon it, it is a mistake to stop the laterals intended to produce fruit. It must be remembered that the flavour of Melons depends entirely on the quantity and health of the foliage. If there are but few healthy leaves the flavour is only second rate, and by preventing the laterals from forming fresh leaves we run the risk of injuring the flavour of the fruit.—J. C. C.

3836.—**Strawberries and Clover.**—This is not the first time that this subject has been mentioned, and I remember seeing it definitely stated that the decaying roots of Clover act as a fertiliser to some crops while of no benefit to others. I have had no personal experience of this matter, but I hope those who are possessed of chemical knowledge will enlighten us on this matter.—J. C. C.

3835.—**Grapes, &c., for very early forcing.**—The best of all Grapes for very early forcing is undoubtedly Black Hamburgh. If you wish to have Grapes ripe in May or June, you could not do better than plant the whole house with that variety. White Grapes are not nearly so profitable early in the year as black. Foster's Seedling is the best white for early forcing. Muscat of Alexandria, of course, is the finest white Grape in cultivation, but, of course, not to grow with Black Hamburgh nor to be ripe before July. In an early house it is a mis-

might grow early (Potatoes in 10-inch pots, or you might force Mint in boxes. There is always a demand for this Herb early in the year. Strawberries can be grown along with the Vines if you have shalvee put up close to the glass so that the plants will have sufficient light at all times. Great care in watering, however, is necessary to prevent the leaves being attacked with red-spider.—S. P.

— Two of the best Grapes for very early forcing are Black Hamburgh and Foster's Seedling; Madresfield Court and Buckland Sweet-water also force well. It is not impossible to grow Cucumbers between Grape-Vines when the latter are young and do not require all the space; but Tomatoes would do better, as Cucumbers require more shade and moisture than would be good for the Vines. Still, an early fruit or two may be had from Cucumber-plants in large pots or tubs in a vinery. French Beans also will do very well for a time if there is heat enough; but French Beans will not do much good in a lower temperature than 60 degs. The produce of a small house 20 feet long should be disposed of locally, as it would not pay to send long distances.—E. H.

THE ANDROSACES.

THESE are, perhaps, the most alpine of alpine plants. Other families send down representatives to the bill pastures or the sea rocks, or sunny becks, as the Primroses and Hairballs do, but not so these. They are more alpine even than the Gentians; for, as we have seen, the Gentians are as handsome in a hill meadow as on the highest slopes, and as Androsaces are, among flowering plants, those most confined to the snowy region, so, as might be expected, they are the dwarfest of this class. They belong to the Primrose family, and resemble it in its flowers, but even dwarf alpine Primroses are giants to these, which, from their extreme dwarfness and compactness, might be called, for an English name, lowering Mosses. Growing at such great elevations, where the snow falls very early in autumn, they flower as soon as the snow melts. Sometimes, like some other alpine flowers, they frequent high cliffs with a vertical face, or with portions of the face receding here and there into shallow recesses. Here they must endure intense cold—cold which would probably destroy all shrub or tree-life exposed to it. And here in spring they flower. Thus, in crossing some passes on foot in spring or early summer, while all the hills around are a waste of snow, the traveller has the pleasure of seeing these charming fairies in full bloom. Generally, however, they have to wait till the snow disappears, and then, in every high spot, one sees the ground silvered with their cushions and gay with their modest little flowers of white, or rose, or yellow. As yet far from common in our gardens, it is, nevertheless, the aim of every



Androsaco lanuginosa. (See page 182.)

take to plant many varieties—in fact, it is in any house; the more the sorts are kept together the better is the prospect of success. French Beans in pots may be grown very well under the Vines. The best variety is Sutton's New Forcing. Sow five Beans in a 3½-inch pot. When they show the first rough leaf shift them on into 8-inch pots without disturbing the roots. Any light rich soil will suffice. They must never be allowed to become dry at the roots or red-spider will attack the leaves and this is sure to travel from there to the Vines. You

lover of alpine flowers to possess them in good health. This is not difficult where there is a properly formed rock garden in a pure air. They are among the plants that are almost sure to perish in a smoky atmosphere. Their small evergreen leaves, often downy, retain much more heat and soot than smoother and larger-leaved evergreen alpine plants do. The Androsaces enjoy in cultivation small fissures between rocks or stones, firmly packed with pure sandy peat, or very sandy or gritty loam, not less than 1½ inches deep. They should be so placed that

no wet can gather or lie about them, and they should be so planted in between rocks or stones that, once well-rooted into the deep earth—all the better if mingled with pieces of broken sandstone—they could never suffer from drought. It is easy to arrange rocks and soil so that, once the mass below is thoroughly moistened, an ordinary drought can have little effect in drying it. A *Laegioea* (illustrated on page 181) is distinguished by its spreading and sometimes, when in a vigorous condition, long trailing shoots, and bearing umbels of flowers of a delicate rose, the leaves being covered with silky hairs. In very cold districts it should be preserved during winter in a dry pit. V.

HALF-HARDY ANNUALS IN POTS.

THESE supply us with a lot of most useful material for conservatory and greenhouse decoration, particularly during the summer and autumn months. Being in most instances of comparatively easy culture, they may be relied upon as a good source of supply when there is insufficient room to grow plants of a more permanent character. Prominent amongst these annuals are the *Rhodanthes*, which for flowering in 6-inch pots from May onwards are most desirable, lasting such a long time in good condition. It is now too late to sow for early flowering, but seed now sown will provide a stock of plants to flower early in July. The soil for *Rhodanthes* should be made firm, as in the case of *Mignonette*, no further potting being required. It should be raised in a slight heat, not by any means too warm, so as to produce a weakly growth. A shelf in ainery just started would do well, shading the pots until the seed is seen to be germinating. When a good start has been made a cooler house will be better, the vinery meanwhile rising too rapidly. Water carefully until the pots are tolerably well filled with roots. When the plants are showing flower a cold pit or frame will suit them very well if room in the greenhouse is short. Another annual of this class that gives a good return, flowering continuously for many weeks, is *Alouosa Warscewiczii* compacta; its bright scarlet flowers are not at all unlike those of a *Chorezema* when seen at a distance. This *Alouosa* will thrive well under the same treatment as advised for *Rhodanthes*. The *Amaranthuses*, as represented by *A. bicolor*, *A. tricolor*, and *A. melancholicus ruber*, supply a class of plants that are not so often seen in pots as they deserve to be. Their value lies, of course, in the foliage effect produced. They require rather more warmth than either of the foregoing, with more moisture until well established; by that time a cool house or pit will suit them well if guarded against any excessive draught. *Balsama* hardly require more than an allusion; they are not, however, seen in nearly so good form as their merit justify. It is a mistake to sow the seed too soon. This is often done; hence the plants become too large before there is room to accommodate them after the bedding plants are disposed of. When sown in April or May a cooler course of treatment will be safe, resulting in more sturdy plants that will do a good turn in July and August.

BROWALLIA ELATA GRANDIFLORA is a very useful annual for the summer and autumn, lasting a long time in flower, at the same time supplying a colour none too plentiful. The plants do best in a gentle warmth until well established in their flowering-pots. By sowing in pans, pricking off into 3-inch or 4-inch pots, three or five plants in a pot, and then shifting into 6-inch or 8-inch pots, and pinching once or twice, nice bushy plants will result. When a large stock and variety of plants are essential in August and September, it is well to grow some of the best strains of *Heliochrysum* in pots. These, if raised in the usual manner as for planting out-of-doors later on, will, if retained in pots, make very useful material for a large conservatory. Until well established, it is best to keep them in a cold frame; then they can be plunged in an ash bed to receive one more shift later on when in need of it. Being gross feeders, these plants will take a liberal supply of manure-water when the pots are well filled with roots. *Lobelia gracilis* should have a place in the most limited collections, either for hanging baskets or to arrange along the margin of

stages, over the sides of which the drooping branches will hang in a most graceful manner. For hedging this kind is not of so much use, except it be as a carpeting to tall plants or for rustic vases or baskets, but when applied to porpoese suitable to its habit of growth, it is a most beautiful plant. *Nicotiana affinis* should not on any account be omitted; it is not necessary to grow a quantity of plants, it is true, for a few even will emit a delicious perfume during the latter part of the day and in the evening. It is easily grown, and until in flower, may be kept out-of-doors after being well rooted and fairly started into a robust growth. The compact growing types of *Petuisias*, both single and double, should have due consideration treated as for bedding out, but retained in pots they will be found useful after a few pinchings to increase the number of shoots. These will come into flower after the *Pelargoniums* have ceased to be effective towards the end of June or beginning of July. The

SALICOLISSIS, particularly the dwarf strains, will prove of considerable service for autumn flowering in conjunction with the *Heliochrysums*, and may be grown under the same treatment. *Schizanthus retusus* and the *var. albus* and *Grahami* make fine plants for the conservatory in the spring if sown later in the year, whilst if sown now they will flower in the autumn, lasting until the *Chrysanthemum* turn in. This is a half-hardy annual that should be more grown than it is where much flower has to be provided, or where easily cultivated plants are more essential. Ten-week Stocks are almost indispensable; they may be had during a prolonged season by sowing at intervals. The earliest sown seed will soon be making flowering plants, but a sowing now made will provide a supply for the summer, and one or more later on will form a good succession in the autumn. For extra early flowering in pots the intermediates are the best, these being kept through the winter in a cold frame. The common mistake made with Stocks in pots is that of supplying them with too much water in the earlier stages of growth. No anxiety need be entertained as to their recovering their freshness after having been potted off; this they will quickly do without the aid of frequent dampings overhead. This attention in many cases would be beneficial; with Stocks it is otherwise. With half-hardy annuals it is most essential—as in the case of all annuals, in fact—not to overcrowd the plants in their earlier stages of growth in the seed-pans. A good start made with dwarf stocky plants will go a long way towards ensuring success. Such plants have every advantage compared with those of a weakly and spindly growth, the result of either sowing the seed too thickly or through deferring the first pricking off or thinning out, as the case may be, until it is almost too late to perform it. Too much warmth in the earliest stages is equally injurious, and eventually fatal if persisted in. Light is an all-important factor in developing a substantial growth; so also is free ventilation when the plants are fairly well started on their course. As soon as the plants cease to be of any use they can be thrown away to make room for those of a permanent character before frost sets in. II.

TREES AND SHRUBS.

PLANTING CLIMBERS IN MIXTURE.

THE utility and interest of planting climbers in mixture are not as often taken advantage of as might be the case. The gable ends of my cottage are fully garnished with *Virginian Creeper*, *Aristolochias*, *Jessamines*, *Clematis*, *Honey-suckles*, *Ivies*, *Tea Roses*, notably *Reine d'Or* and *Gloire du Dijon*, grown and trained in delightful mixture: while a massive chimney, clothed with broad green *Ivy* (*Ragneriana*) as a groundwork, *Aristolochia Siphon*, the chaste *Clematis Standishi*, white *Jessamine*, *Lonicera aureo-reticulata*, *Virginian Creeper*, and *Rose Reine d'Or* have thoroughly covered to the very top, and compete with each other as to which can produce the greatest charm, while the lower part of the cottage wall all around is furnished with still greater and additional variety. *Barberis Barvini* has attained the height of 15 feet of late, and I hope to see it yet gain the top. *Scilla macrantha*, *Clematis* of the Jack-

mani type, semi-climbing *Roses* of the *La France* type, *Jasminum nudiflorum*, *Chimonanthus fragrans*, *Clinanthus panicula*, *Aloysia citrodora* (*Lemon-plant*), together with broad vigorous patches of *Tropaeolum speciosum*, and the rarer, *T. polyphyllum*, *Calyptegia pubescens* fl. pl. *Hops*, &c., are also planted on the wall. A prominent part in this miniature wall decoration is taken by that fine old nearly evergreen *Rose Ophir*, which occupies considerable space on the east wall, and has grown right up to the eaves. By the way, this is a *Rose* deserving far more notice and extended cultivation for this purpose than are now accorded it. The benefit of this mode of planting is apparent in the increased and prolonged effectiveness and additional interest given to a wall thus treated, especially where wall room is limited, and as far as I can observe, with a common sense and timely thinning of shoots, &c., none of the subjects employed are much the worse for their associates. Of course, to keep up the vigour of such a medley crowd, their order must on no account be overlooked, but be kept freely and often supplied with substantial and invigorating fare. One more word as bearing on this double planting, or whatever it may be termed, as applied to shrubs as well as climbers. A pleasing little feature attached to this same cottage is a small shrubby thinly planted chiefly with spring-flowering shrubs to hide the back premises. This is overrun with pink *Convolvulus* and *Hops*, which make a splendid autumn display, long flowering shoots, twining and festooning over and from shrub to shrub, covering the whole with a mantle of beauty. J.

3816.—**Thuja Lobbi**.—The first week in April is the best month to plant this shrub, especially if a little attention can be given to them during the summer in the way of watering occasionally and mulching the surface with 2 inches of partly-decayed manure. The ground ought to be trampled deeply in the autumn, adding a little manure to the soil just under the surface. If possible, cover the roots when planting with a little decayed vegetable refuse or old potting soil. This may seem unnecessary, but any little attention like this is time well spent, the trees make so much better progress afterwards. This *Thuja* is not at all particular as to position. £5 per 100 would be a fair price to pay for trees 18 inches high, a good size for hedge planting.—S. P.

This *Conifer* is not expensive, and you could plant it in early autumn with every prospect of the shrub succeeding well; and the soil must be moderately light. *T. Lobbi* is one of the most popular of its class, and makes good progress in ordinary gardens, but, like the majority of *Conifers*, does not like the neighbourhood of large towns. The miserable aspect of the shrubs in town gardens does not impress one with their usefulness for such positions—in truth, in small gardens especially, the planting of *Conifers* has been quite overdone.—C. T.

The cost varies according to the work done in transplanting. In the nurseries where the plants are permitted to grow without root disturbance they can be bought much cheaper than where regularly lifted, but the untransplanted trees would certainly die in a season like the present, and some of them would die under any circumstances; therefore price is no criterion of quality. *Thuja Lobbi* is sometimes confounded with *Thuja gigantea*, and the last-named is more valuable than the trees sometimes sold as *T. Lobbi*. *T. gigantea* is comparatively scarce and dear, but good plants can be purchased for about 2s. 6d. each and upwards, according to size. They will move very well in early autumn. It is a very hardy tree and will grow anywhere.—E. H.

3741.—**Clethra arborea**.—This is an evergreen, with white flowers in September. It should be potted in the spring, when the new growth is commencing, using good sandy peat and draining the pots well, and making the soil quite firm. During the season of growth rather liberal supplies of water are necessary, and even in the winter the soil ought never to become really dry. The plant should have a light and airy position at all times.—B. C. R.

3814.—**Fruits of Chimonanthus fragrans**.—There is nothing unusual in this tree setting some of its flowers and producing seed.

Two years ago when thinning out an old specimen on a wall I discovered several pods that had been hanging a year. The seed was sown and grew in a few weeks. At the present time there are a quantity of fruits upon some young plants, and a quantity of seed will doubtless be ripened by next winter.—A. H.

— The recent hot and dry weather, coupled with the favourable site the plant enjoys, will account for the fruiting of this shrub, which is unusual. This is one of the most charming of flowering deciduous shrubs to be met with, but seldom is it seen.—S. P.

— The fruiting of this plant against a main wall is not a rare occurrence—at least, I have often seen the fruit on old trees.—E. H.

— The fruiting of this plant is certainly not a common occurrence, although seeds are occasionally seen on old trees.—J. O. C.

3734.—**Hollies.**—Syringe them well two or three times every day, getting the water well on to the stems and old wood. At the same time keep them nicely moist at the roots. I should say the soil has been too dry. I transplanted some in March, kept them well watered, and they have not lost a leaf. If you can shade from hot sun it will help to keep the wood from shrivelling.—J. C. B.

by the path? They should not be set too near it; if there is space for spare 6 feet or 8 feet will be a good distance for the larger growing ones, putting dwarfier kinds near the path so as to avoid a continuous line. You can fill up vacant spaces with perennial plants and bulbs. Of evergreen shrubs, Hollies, Yews, Boxes, and Aucubas are good reliable kinds. Some people are very fond of Cypress and Thuja, but I do not care for many of these alien looking trees; one or two from their pyramidal shape make a pleasant variety. Of flowering shrubs and trees there is an almost endless choice. I may just mention Pink Hawthorns, Lilacs, Guelder Roses, flowering Currants, and strong growing Roses as suitable. You will not require many in a length of 30 feet, as each tree should have a chance of developing its characteristic beauty. It is very important that the soil should be well prepared by being dug up and enriched if it is poor and exhausted. If the ground at the end of the steps is stoned and not laid with turf, you should try to get it covered with rock plants or such things as the smaller growing Periwinkles and St. John's Wort. If you have rock plants, they will need a few good-sized

soil; this will soon draw out more roots and considerably strengthen the plants. Any stems that may be observed to be too dry should be kept syringed every day, or water may be poured down them from the crown of the fronds. Moss could also be bound round the stems from the soil to the top; if this is done at this time of the year, it will in most cases soon be found out by the roots, as the keeping of it moist is not now so difficult as in very hot weather. This, in the case of some kinds, greatly assists the plants and adds to the vigour of the fronds, as well as to their numbers. It is not, I think, advisable to adopt it in every instance. I would not do so when the growth is already as much as one could desire; in other cases, however, it is a decided help. If pursued from year to year, in the case of young plants the stems increase in height more rapidly. Those which are known to be troubled with scale or thrips should receive every attention now. When the case is a bad one, I would remove the fronds, if they can be conveniently spared, one or two at a time. Syringing or fumigation will destroy the thrips to a great extent, but the scale wants more getting rid of. In doing this, care should be taken that the insects do not fall upon other plants. In a few weeks' time another examination should be made, which will go a long way towards getting clear of them. Cibotium princeps and C. regale should not be kept in too cool a house; they will not bear so cool a temperature as Dicksonia antarctica (here figured) or Cyathea dealbata. C. regale is of the two the hardier. IL.



A fine Tree-Fern (Dicksonia antarctica).

3744.—**Shrub seeds from New Zealand.**—Sow the seeds at once in well-drained pots or pans of very sandy peat, with a little loam and leaf-mould. Keep them in the heated house, with shade from sun, and the soil always moderately moist. When up and well in growth, transfer the seedlings singly to small pots, using the same soil. Keep in the house for a time, then remove to the frame, so as to harden them before the winter sets in, and house again the end of September.—B. C. R.

stones to keep up the earth and make little flat beds for them to be set in. Should the space at the end of the steps be left vacant, by all means plant a tree or creeper there. Attention to these little details make a great difference to the appearance of a place.—S. E.

FERNS

TREE-FERNS.

THESE, when in small pots or tubs, as compared with the size of the plants, will generally require a good supply of water. On no account should they be allowed to suffer. This may possibly occur at this season of the year sooner than one is aware of. When there is a difficulty in getting sufficient water to penetrate the ball of earth, and the pots are crammed with roots, I have made holes into the soil some 6 inches or more in depth; these will direct the water more towards the central part of the ball if the holes are made in that direction. Young thriving plants will need careful looking after, particularly those which are beginning to make a stem. Some Sphagnum Moss should be tied around these stems close to the

CHOICE FERNS.

CHEILANTHER RADIATA AND OTHERS.

A SMALL frond of this plant comes to hand from a lady, "Miss Jen," asking its name and for some hints as to its cultivation? The name is here given, but it is a plant not well known amongst Fern growers, although it has been in cultivation since 1827. It belongs to the Adiantopsis, established by Fee, but which is now reduced to a section of the above genus by Hooker and Smith. The frond consists rather a small one, having only four radiating pinnae, beside the main and terminal one, but I have grown it with six and eight, and measuring 8 inches across; but then the plants were evidently much stronger than the one in question. This is a beautiful Fern, which is widely spread over the West Indian Islands and also in Mexico, Caraccas, and Brazil. Consequently it requires to be grown in the stove, and the pots to be well drained, using as soil two parts peat, nicely chopped up with the spade, and one part good light turfy loam well mixed and made sandy. Water freely, and maintain a nice warm, moist atmosphere, and you will, "Miss Jen," succeed in growing this Fern well. The following are some of the plants belonging to the section Adiantopsis besides the one just mentioned—

C. CAPENSIS: This pretty plant, as its name implies, comes from the Cape of Good Hope, and is somewhat rare in cultivation with us, although it succeeds under a warm greenhouse treatment. When at its best the fronds are nearly a foot in height, and the pinnae or bipinnate of twice divided, with the edges of the segments toothed, the colour being rich bright-yellow. C. H. PADATA: This is a rare species which comes from the West Indian Islands, having the stems of an ebony hue. The lower part of the frond at once reminds one of C. radiata, but it grows out of character in the upper part and becomes bipinnate, with the segments quite resembling C. radiata, and for which it might be taken, but in that kind the central pinnae, although the largest is always simply pinnate, it requires stove heat. All these species are peculiarly choice kinds, adapted for the culture of a lady Fern fancier, and I should be pleased if the lady signing "Miss Jen" would add them to her collection, and then ask me to see it, for I, like herself, live in the London district. J. J.

3747.—**Maiden-hair Ferns.**—The best and only safe way to obtain good fresh spores is either to save them yourself (from the well-matured fronds of any old plants) or to get them direct from a good grower of Ferns. They

must be sown on a rather rough surface of fine, silt loam, in extra well-drained pans. Do not sift the soil, or attempt to render the surface very level, but simply crumble the loam in the hand, and moisten it by soaking the pans halfway up in water for about half an hour. Keep them in a shady and "quiet" corner of a rather warm house or pit, with a moist atmosphere, and when necessary dip the pans halfway up in water as before. As soon as the young seedlings (which look like Moss) are well up prick them out into other pans or boxes in little clumps, and when sufficiently advanced divide again, and transplant them singly, finally transferring them to "thumbs." *Adiantum cuneatum* is the best for all ordinary purposes. The winter or early spring is the best time to sow, as at this season Moss is apt to grow and smother the young Fern.—B. C. R.

HARDY CYCLAMENS.

CYCLAMENS *COUM* and *IBERICUM*, as well as the charming little hybrid *Atkinsii*, have bloomed freely in the open air. I had a bed of the latter, containing about a hundred plants, covered with the dainty little blooms, varying in colour from the purest white to rosy-red. I know of nothing more delightful in the early spring days than these hardy Cyclamens, so charming in form and colour. The rich-green of the foliage, which in sheltered situations does not suffer from hard frosts, shows up the flowers to great advantage. *C. vernum* is not so showy as the above mentioned, and rather more delicate of constitution, but very pretty and worthy of careful culture. One of the most fragrant flowers I know is *C. europæum*. This blooms in summer, and does best where it gets shelter from hot sun. The fragrance of this Cyclamen is so powerful that a plant carrying half-a-dozen blooms will perfume a moderate-sized greenhouse. For this reason it is well worth growing in pots. These hardy Cyclamens grow freely in a light compost, consisting mainly of leaf-soil with a little loam and a liberal addition of brick rubble or mortar rubbish. The corms should be buried 3 inches or 4 inches deep, and a cosy neck sheltered from east and north winds should be chosen for them. The autumn-blooming *C. hederacifolium* is a very hardy vigorous growing species. These will thrive in almost any soil or situation. The white form of this is certainly one of the daintiest little flowers we have. This does very well in the Grass where the herbage is not very rank of growth, and it succeeds under deciduous trees. The large handsomely marked leaves remain in good condition through the hardest frosts, and thus form a carpet of the freshest verdure at a season when it is so welcome. J. C. B.

SOLANUM JASMINOIDES.

THOUGH hardy in a few of the more favoured districts of this country, the *Solanum* in question must be, generally speaking, regarded as a greenhouse plant, for it is when treated as such that it is most effective. One thing in its favour is a soft or rafter plant is that the foliage is not in any way dense, so that even a large specimen of it will not obstruct a great amount of light, which is in a general way a desirable feature in a climbing plant. At the same time the young shoots are rather liable to be attacked by aphides, and if the atmosphere is too dry, red spider will quickly make its appearance and work havoc with the foliage. With a little care, however, both these can be kept in check, and then this *Solanum* will, under suitable conditions, flower for months together. I have had under my observation for some time a by no means large plant, which has not been without flowers since last November. Under glass especially, where slightly shaded, the blooms are pure white, but out-of-doors they are often tinged with bluish-mauve. It strikes root readily, and is altogether of very easy culture. *S. jasminoides* is, however, by no means the only climbing *Solanum* that ranks high as a flowering plant, for two or three species of great merit have been very attractive at Kew for the last few years. One of them, *S. Wendlandi*, is a bold, strong-growing climber, with clusters of purplish-blue blossoms, while a second species, *S. Searforthianum*, has clusters of flowers a good deal like those of *S. jasminoides*, except that they are of a pleasing shade of pale-lilac.

S. pensile, the third to mention, has lanceolate leaves of a very deep-green tint, and clusters of deep purple blossoms. All of the above, except *S. jasminoides*, require stove treatment. Another species is *S. orisipum*, which is hardy in the especially favoured districts of this country, and may be treated as a wall plant in others. It forms a large bush, while the flowers, which are freely borne, are of an attractive shade of pale-blue. This is an old plant in gardens, and though but little known, it is where hardy a very showy shrub. P.

THE CHOROZEMAS.

THE *Chorozemas*, so well represented by *C. Lowi*, a variety or species with larger flowers than are usually found upon other species in this genus, are amongst the most useful of greenhouse plants, especially to amateurs who have no convenience to force plants or shrubs into flower. Although the *Chorozemas* may be grown into specimens large enough for exhibition, so large that they can with difficulty be moved by two men, this is not the kind of thing the general public want, and even frequenters of exhibitions have become satiated with such unwieldy specimens. One can appreciate the skill of the cultivator who has worked well and patiently to bring his plants up to the highest standard of excellence; but the primary object of cultivating these specimens being to win prizes at flower shows, they serve their purpose when the exhibitor has won the coveted award, whatever it may be, for as decorative plants for the greenhouse they are not to be compared to the smaller specimens naturally trained. One can safely recommend *Chorozemas* to amateurs because of their easy culture and the cheap rate at which the plants can be purchased. The leading dealers in these plants say that there is but little demand for them; and therefore there is but little encouragement to propagate a stock of plants. No one can complain of the attention now given to *Orobanchids*; they must ever command admiration; but we cannot nor ought we to compare one class of plants with the other. *Orchids* will do in a comparatively cool house in winter, but there must be a heated house for even the coolest of the *Odontoglossums*; whereas the *New Holland* plants succeed well in a house that need not be heated except on sharp, frosty nights, and the dry atmosphere in which the plants delight in the winter season is pleasant for invalids, who must have air and exercise without being exposed to cold east winds.

THE CULTURE OF *CHOROZEMAS* is very simple. Seeding plants are the best. They grow more freely than those propagated from cuttings, and make a better growth. They also grow rapidly when they have reached the flowering stage. The two main points to be attended to in their culture are careful attention to planting in the right kind of soil and placing them in a light, airy position in the house, but avoiding a continuous draught of air. The potting-soil ought to be yellow loam, such as is found on moorland pastures in the vicinity of peat, and in which Bracken or the Brake Fern grows freely. I use two-thirds of light fibrous peat with this yellow loam, and add a good sprinkling of coarse sand if it is needed. The plants grew freely and make a mass of fibrous roots, and if repotting is delayed they form a compact hard mass, and when this has taken place it is necessary to take a pointed stick or, what is better, an iron skewer and ease out the roots a little. Good drainage is necessary, and over the drainage put some of the fibre from the turf from which most of the soil particles have been shaken out. In removing the plants from one flower-pot to another, an inch all round the ball of roots should be allowed for the new compost. As a rule, all these hard-wooded plants require to be potted firmly, and the *Chorozemas* are no exception. In a few words I will point out the reason for this firm potting. The ball of roots being a compact, very solid mass, if the soil was put in loosely the water applied after repotting would pass rapidly away in the new soil and scarcely penetrate the part containing the roots, so that a plant might be suffering from want of water, while to all intents and purposes it had been freely supplied. It is to obviate this evil that the plants are picked out a little with the forked skewer, so that they may the more readily

lay held of the new soil, and if the soil is packed in firmly with a wooden rammer the water applied will pass through very much more slowly and the roots will be supplied with it. Before one of these plants is repotted the roots should be well on the moist side to avoid giving any water for two or three days after repotting, and when it is seen that water is really needed, give a good supply. Most of the *Chorozemas* have

LONG SLENDER STEMS, which make them useful to train against a wall or trellis-work; but they ought also to be trained to neat sticks to form even a moderate-sized plant. Avoid the formality of balloon-shaped or any fantastic form other than that of a bush, which should be well furnished from base to apex with healthy flowering growths. There is no need to starve these plants into flower. They flower profusely with liberal treatment, and when the plants are kept too long in one pot the leaves assume a greenish-yellow tinge, instead of a deep full green. When well established a good supply of water is required at the roots, but some discretion is needed: the points of the fine fibrous roots may be injured with too much or too little water. The plants may be placed out-of-doors during the summer and autumn months, but if the pots are fully exposed to the sun it is well to lean a slate against them to prevent injury; the pots would absorb the heat to such an extent that the roots in contact with the inner surface would be positively burned. When out-of-doors they should also be sheltered from violent winds, which would overturn even a moderate-sized specimen; a stout stick should be driven into the ground at the side of each pot, so that plant and flower-pot may be both made secure. They must not be left out so late in the autumn as to become saturated with cold rains. J. C. B.

FLOWER GARDEN NOTES.

To advise as to the best materials to employ for the most effective, and at the same time the most tasteful display in the flower garden is by no means an easy task, as so much depends on the tastes to be gratified, natural surroundings, style and formation of bed or border, and many other things. There are certain flower gardens, scores of little beds perhaps enclosed by Box edgings, and with tiny gravel walks running between them, with which it is almost impossible to deal satisfactorily. The demand is generally that each bed shall be independent of its neighbour, and under such circumstances it is a very difficult matter to blend and harmonise colours. Neither can satisfactory results be gained by filling such gardens with herbaceous plants; the latter never look at home in small formal beds, whether these form part of a running border or of some intricate design. In offering a few suggestions as to summer planting, I may say at the outset that they are applicable to what is now the favourite type of flower garden, the herbaceous border, and beds on turf. It should be the aim to fill any vacant spaces in the herbaceous borders for the summer with those things that seem most in touch with the permanent inmates. A few

TALL THINGS for the book are free-flowering *Pompon Dahlias*, the useful bright yellow single *Helianthus*, a few clumps of *Prince's Feather* and of summer-flowering *Chrysanthemums*, or if there is already an abundance of flowering plants in the background, the summer introductions may consist of such fine-foliated plants as *Solanum gigantourm*, *Wigandia*, *Ferula*, *Cannabis gigantea*, *Ferdinandia emiensis*, and a few *Cannas*. Bare spots in the front of such borders may be filled, in addition to some *Carnations* and *Violas* as there may be to spare, with *Cuphea platycentra*, *Gazania splendens*, *Diplacis glutinosa*, a clump or two of *Heliotropis*, pegging the latter once to keep it dwarf, and also a few blocks of the best of the ascotid *Pelargoniums*. In the arrangements in the flower-garden for beds on turf, the gardener has, as a rule, to adapt his planting to the tastes and requirements of his employer; in one place plenty of bright colour must be the predominating feature; in another, subtropical work; in another, plenty of large bold plants, as big specimen *Fuchsias*, Ivy-leaved *Pelargoniums*, and the like; in another, carpet bedding either by the employment of the dwarfest of plants or by the judicious blending of bright colours in foliage as would be repre-

sented, for instance, by the hrenze and tricolor Pelargonium and Coleus Verschaffelti. Of many

NEW IDEAS that have come in of late years to improve our floral arrangements, one of the best was the introduction of a minimum of tall, graceful, or large, well-flowered plants on a dwarfier carpet of flower or foliage. Instances of such planting will be found in Abutilon marmoratum with purple Petunias, Fuchsia Abundance with silvery Centaureas, Rosa of Castile, or one of the Cornelieus type of Fuchsia with purple Violas, Nicotiana affinis with scarlet Pelargoniums or Verbena, and white Marguerites with pink Pelargonium. In all the above arrangements the dot plants are given first, and may be planted with a sparing or more lavish hand in proportion to the size of bed or border. The brilliant or glowing Begonias in scarlet, crimson, or pink shades are all the better, especially if the flowers are heavy and have a tendency to droop, for the introduction amongst them of a few lighter, taller, and more graceful plants. The striped Japanese Maize is sometimes used, but this is a trifle stiff and formal, and I certainly prefer the variegated Ribbon Grass, the Sweet Tobacco, or even a few well-grown plants of Eucalyptus globulus or citrifera. Beds of Verbenas can be relieved in a similar manner.

MIXED BEDS, in which two given plants are used in about equal proportions, are also still in favour, and very pretty and effective if the colours are nicely blended and the arrangement is not too stiff and formal. Pelargonium Flower of Spring and West Brighton Gem, with respectively Lobelia cardinalis and the silver variegated Fuchsia, the silvery Centaureas and Verbenas with Heliotropes or Verbena venosa, two lines of bedding Beet or Begonia Worthiana running irregularly through a carpet of dwarf Ageratum, are a few instances of such planting, the size of plants again to be regulated in proportion to size of bed. A few large specimen Fuchsias, Ivy and other Pelargoniums, and Heliotropes are not out of place even in small flower gardens; they may be plunged on turf or in small beds, and in the latter case could have a dwarf carpet of flower or foliage to show to advantage against the several colours. There are very few, if any, of the foregoing plants that are not to be had easily either from seed or cuttings, and are therefore within the reach of all who have a little glass. Of many other things that enter sometimes largely into the flower-garden arrangements, such, for instance, as the half-hardy Dracenas, Pelms, and Aralias, it is not necessary to write; they are not everybody's plants, and as such do not come within the scope of the present notes. E.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the EDITOR of GARDENING, 37, Southampton-street, Covent-garden, London. Letters on business should be sent to the PUBLISHER. The name and address of the sender are required in addition to my designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appeared.

3878.—Candytuft.—Is perennial Candytuft best raised from seed or from cuttings? Will cuttings root to the open air?—C. N. P.

3877.—American Bellbird.—Will any of your readers kindly inform me if this is the same plant as our Blue-weed or Wild Convolvulus?—J. K.

3878.—Calceolaria rugosa.—Is Calceolaria rugosa the same as Calceolaria pedunculata? It is offered in a catalogue, and should like to propagate it.—C. N. P.

3879.—Lawn-tennis-court.—Will anyone kindly tell me how to make a clader or gravel lawn-tennis-court? How much clader or gravel required, and probable cost?—G. GRASSON.

3880.—Campanula pyramidalis, &c.—Should be glad to know best treatment of Campanula pyramidalis and Lophospermum scandens; also if both are hardy perennials?—STANTON.

3881.—Cape "Geraniums"—Will someone kindly give directions for culture of Cape "Geraniums"? I am just starting with some cuttings? Will they live in so unheated house through the winter?—D. K. W.

3882.—Crasper for a wall.—Will someone kindly recommend a very quick-growing Crasper that fastens itself to a wall without needing to grow up a house-wall facing south-west, to cover up the brick-work?—STANTON.

3883.—Doronicum.—In our park there is a lovely plant, Doronicum austrinum. Is this anything like Doronicum Harpur-Clewsi? I am going to grow Doronicums and should like a few hints thereon.—C. N. P.

3884.—Double Petunias.—Will someone kindly tell me how to grow Double Petunias? I have half-a-dozen plants in 4-inch pots. I want to have them ready for showing to August, and would like to know of a few named ones?—HALL.

3885.—Treatment of young Vines.—I have a few young Vines which I have raised from eyes put in last January; they are about 18 inches high, and have shoots at every joint from an inch to 2 1/2 inches long. Should these side-shoots be stopped?—F. H.

3886.—Substitute for rotten manure.—I have no means of procuring rotten manure. I shall be glad to know if I can use fresh horse droppings instead? I can use manure-water thus made for Palms, Lilies, and plants in a conservatory generally.—STANTON.

3887.—Clematis, &c.—I shall be glad to know if Clematis, Azalea, Genietas, and Myrtles, can be put out now into open ground; also if the pots should be buried or plants should be removed from them? Should plants generally be buried in their pots?—STANTON.

3888.—Asparagus culture.—Will someone kindly inform me how to grow good Asparagus? I have old beds and young ones which are given plenty of manure, salt, &c., and contain the largest kinds of the plants, but the result is the same every year—viz., long thin stalks.—SCOTIA.

3889.—Lilies of the Valley not flowering.—Will someone kindly inform me why my Lilies of the Valley have not flowered this year? They are too healthy plants, but in rather a sunny position. They have plenty of leaves, but no flowers. They have flowered in previous years.—PERRYSBURGH.

3890.—Scented Pelargonium.—I find in a seed catalogue Pelargonium odoratissimum also Pelargonium roseo-scented. Which of these two is the common scented leaf "Geranium"? I want to raise from seed, as I cannot buy cuttings at anything like a low price, and I want a considerable quantity.—C. N. P.

3891.—Madonna Lilies.—Will someone kindly tell me why the leaves of the White Madonna Lilies, after growing in a flower-pot for six or seven weeks, suddenly seem to take a blight of which some of the leaves are a sample? The bulbs were planted last August twelve months in a little sand, 2 inches deep.—L. D. E.

3892.—Treatment of Smilaxes.—Will someone kindly tell me what treatment they require? I have several seedlings about 2 inches high, and should be glad to know what soil and size pots to put them in. Do they require heat, or would they do in a conservatory without heat, and that is shaded during the day?—MALVINA.

3893.—Mildew on Vines.—I shall be glad to know how to treat Vines (Black Hamburg and Buckhead's Sweetwater) which are much mildewed? Being in a greenhouse, they are only now blooming. May sulphur be applied to leaves and stems in this stage, or will it be productive of rust later on? Full instructions will much oblige.—BANKSIA.

3894.—A leaky pond.—I have puddled a pond by putting 7 inches of clay in it well worked up, but I find the water gets through. I may say the clay was put in all at once by throwing in as hard as possible, after which it was smoothed over, and the water let in at once. Will someone kindly tell me where I was wrong? The bottom of the pond was rammed very hard.—AVALA.

3895.—Ivy and Grass.—Is it too late to cut back the Ivy on my house? It is cutting badly, and the ladders are there now. If I have to pull it off I must go to the expense and trouble of hiring long ladders. Can I do anything to make the Grass grow close round the trunk of a large Oak tree on my lawn? At present the ground is bare within 4 or 5 feet of the trunk?—J. B. P.

3896.—Young Myrtles.—I have some young Myrtles raised from cuttings four years ago, which disappoint me in showing no bloom. They are healthy-looking, and full of growth, kept in a greenhouse, except during the warmest part of summer, when they stand out-of-doors to assist in ripening wood for blossoms, which, however, do not come. Can any reader kindly help?—DOWN EAST.

3897.—Roofs for a wall.—Will someone kindly advise me, through GARDENING, what kind of Roofs to plant out now against a wall with a south aspect? I have a Gloire Dijon on the same wall doing splendidly. Will someone also tell me what kind of Rose would do well on my greenhouse, south-east aspect? I want to put one against the wall and others in pots (not heated).—BOURNEMOUTH.

3898.—Seedling Pelargoniums.—Nearly two years ago I sowed some seeds of Pelargoniums, from which I have now several healthy plants of each, named varieties Zonal and Regal, in 5-inch pots. I thought that possibly some of them may have bloomed last season, but they did not, and so they seem likely to flower this time; yet the plants seem healthy, but some are stronger than others. I should be glad to know how to get them to flower?—F. M. J.

3899.—Arrangement of a greenhouse.—I have a 12-foot greenhouse, 14 feet by 12 feet long, divided into two sections, one of these, 12 feet long, is divided into two, and the other, 20 feet long, is used as an ordinary

greenhouse. I propose now to add a three-quarter span house, 15 feet long by 10 feet 6 inches wide, and shall be glad of any suggestions as to the best mode of utilising it, and as to internal arrangement. I thought it would do best for a cool-house.—SOUTH LONDON.

3900.—Mushrooms.—Will someone kindly give me some advice under the following: Some few weeks ago I made a Mushroom bed, to the usual way of fresh horse-droppings, after the usual preparation of manure. I have spawned the bed six weeks now, and there is no sign of Mushrooms at all, but there is some kind of stuff coming up all over the beds which I cannot understand. I should be glad if someone could tell me the cause? The soil was sifted, and perfectly clean, and the spawn was from one of the largest seed firms in England.—GASTNER.

3901.—An enemy to the Auricula.—For some years past I have been much pestered with a leaf-roller, a species of Tortrix which on every opportunity attacks and destroys the heart of the Auricula here. This is the month when it first appears, and continues its ravages for some time into the month of June. Will some experienced and extensive growers of this plant kindly say if they are so troubled? The larvae is blackish in colour, sometimes it is of a reddish tint, and when full grown about half an inch, or may be a little more in length. Even when the plants are protected the pest finds its way through the ventilators of the frame or holes in which the plants are kept.—P. RENOVATOR.

3902.—Chrysanthemums cutting down.—I have this year sown about 100 plants of Chrysanthemums into 12-inch pots, not having a smaller size at command. They were stopped when they were about 5 inches high; some of them I have not stopped, and these have one or two single stems 1 foot high; those I stopped have three or four stems on each plant—viz., Soleil Levant, Etolle de Lyon, Condor, &c. Those that I have left to one single stem are Avalanche, Puritan, Mine de Seville, &c. I see an article in GARDENING, April 15th, on the culture of Dwarf Chrysanthemums by "K. M.," who speaks of a system of cutting down them, and says their second sized pots, 6 inches. I am wishing to know if I can cut my plants down now with safety, or shall I allow them to grow with three or four shoots to a stem, with a certainty of their being dwarf and producing large blooms?—ANXIOUS.

3903.—Building a conservatory.—I am erecting a villa, at the end of which I purpose putting up a lean-to conservatory. The bath-room is over the hall. I am thinking of getting sufficient heat for the conservatory by carrying the hot-water pipe through the place the conservatory is on its way to the bath-room, with a duplicate pipe, which would not go into the conservatory, for use in summer, when the place would not require any artificial heat. Can anyone kindly inform me if this is, in his opinion, practicable? Or does any one know of any place or places where it acts? Personally, I have confidence that it will not, as the hot-water would always be circulating through the pipes, and, in addition, there would be warmth from the two fires at that end of the house. I could have an extra fire for twenty-eight. The aspect is south-east. I shall be glad of an opinion in the next issue.—J. ROBINSON.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

3904.—Imported Odontoglossums (L.).—Well, it is rather late to think of starting Odontoglossums just brought home from their native country. However, if you have some in this state, although late, they may be potted in the same mould that I have before advised you to use for these plants. Keep them cool and shaded, and the atmosphere in a nice moist condition.—M. B.

3905.—Cattleya aurea (L.).—This plant flowers at once from the sheath made, and before the growth is made up, and this kind should not be heated before flowering, but immediately after flowering it must be kept cool and dry, in order to prevent its growing again before spring.—M. B.

3906.—Cattleya Victoria Regina (L.).—I do not know how this species does tend in its flowers, but if you have a plant with a sheath in the autumn I should treat it kindly. Keep the plant in a fair temperature and nice and moist, but do not let it get too wet, and its bloom will push up all in good time. C. Alexandrina, &c., in the same manner.—M. B.

3907.—The Meadow Rue.—John says what is the name of this plant, and how grown? Well, there is a host of species and varieties of the Thalictrum, which is the generic name of these plants; but many of the kinds are grown in our gardens, and the foliage is cut and used in a great deal of Meadew-hair Fern, which very much resembles, and for this I should recommend you to T. minus. This may be grown in the open air in any good garden soil, chiefly loamy.—J. J.

NAMES OF PLANTS AND FRUITS.

Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C.

Naming Fruit.—Readers who desire our help in naming fruit must bear in mind that several species of different stages of colour and size of the same kind require assist in its determination. We can only undertake to name four varieties at a time, and these only when the above directions are observed. Unpaid parcels will be returned. Any communication respecting plants or fruits should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C.

Names of plants.—Chionodoxa.—Yellow form of Chionodoxa canadensis.—Highwood.—Not recognised.—Olive Convolvulus.—1, Saxifraga cernuifolia. 2 and 3, Not recognised. 4, Fatima Imbricata. 5, Not recognised. 6, Chionodoxa. 7, Erythraea. 8, Davallia decora. 9, Aspidium lucidum. 3, Aspidium Hookeri. 4, Erythraea. 5, Erythraea. 6, Erythraea. 7, Drummondia. 8, Lelia cinabarina. 9, Cattleya

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CHRYSANTHEMUMS.

CHRYSANTHEMUM BLOOMS FOR SHOW.

HOWEVER well the blooms of Chrysanthemums, incurred in particular, may be cultivated, if they be placed upon the exhibition stands as grown there will be but little chance of their owners gaining premier positions in the leading contests. The world-be prize-winner, then, should become the possessor of a pair of strong steel forceps with a good grip to pull out ill-formed and unperfected florets, also bene tweezers for placing the latter in an even manner. These, with a supply of cups and tubes, can be purchased from any specialist in this popular autumn flower. A good time to make a start is when the bloom is about a quarter open, for even at this stage a floret may decay or come in form like a quill; others may reflex instead of incurve. Promptly remove all such, and it may be necessary to just look over all of the show flowers every second or third day until fully out. The largest kinds—Queen of England being a good example—require the most work. These sometimes form a far greater number of petals that can possibly develop. Thin them out as the bloom is expanding on the plant. When about three parts open, the centre may be a confused mass of embryo florets. It is well here to quite clear these out (also the yellow disc which forms in some) carefully, but leaving a hollow part half an inch or so in diameter. Room is thus given for the rest to fully extend, and the centre of the bloom is knit up with petals large and of fine texture. Finish in this part of a bloom is important, the top or point being the first to arrest the eye. The variety Princess of Wales is a capital type of another class. The defect most noticed here is a tendency to produce petals shorter than the bulk; remove these with the forceps as the flower opens.

THE JAPANESE sorts need very little of this pulling-out process, but the opening of many of them is improved by an occasional tap, which is generally enough to loosen the entwined florets and make room for others that may be pushing forward. Tie the blooms in an upright position if inclined to be top-heavy, and do not cut a flower thinking it will open and keep better in water, but, instead, when fully out, remove plant and all to a semi-dark and dry room until a day or two previous to the show. Begin the final operation of arranging the petals in good time, so that it may be done if possible by daylight, and also that it may not be hurried. I am quite satisfied of this (provided, of course, the flowers have been well grown, for a bad specimen cannot be manipulated into a good one), that the more time one spends on the incurred blooms the looser will the judges, as well as the public, linger around them. I am told that a very skilful exhibitor of the incurred Chrysanthemum occasionally gives from three to four hours to a single bloom. If a stand of twenty-four were each to require this amount of time, simple arithmetic will show how many days before a show we are to commence. I think, however, the above is a little wide of

the mark. There are well-known cups and tubes, such as Beckett's, Jameson's, Walker's, and so on. But the fault of these—at least, for incurred blooms—is that the hole where the stem goes through is so large that it is very difficult to fasten the blooms in tightly. For this reason I prefer the old wooden cup, similar in shape to an egg-cup. It is vexing after a journey to find the blooms loosened, and the work of placing the petals obliged to be done again. Whichever appliance is used, cut the flower with a long stem, so that it may be conveniently handled, and after passing it through the hole of the cup, fix the same, but not too tightly at first. Then holding the bloom as near as possible upside down in one hand, place each petal, starting at the centre, in a position renning to this latter point. Steel or bone instruments can be used, and what is very desirable is a light touch, damage to the tender petals being easily accomplished. If the egg-shaped cup be used, other appendages are the tube to hold water and a piece of zinc, called a telescope, to take the cup at one end and the tube at the other, so that the bloom may be raised or lowered at will. The Japanese varieties with long drooping flowers require very little preparation, and in nearly all cases look best shown as grown. Do not use wires, cards, or the like to make all the blooms appear larger, thus getting diameter at the expense of depth, the last being an important point in a good flower.

FRESHNESS and brightness of the colours are often lost sight of by those who start exhibiting. They too often choose only these blooms which possess extra size, and wonder why smaller ones have gained the prize. Stands well painted of a deep-green colour and nicely varnished tend to give a rich appearance to the blooms. The present standard size is 24 inches by 18 inches, 6 inches high at the back and 3 inches in front, to hold a dozen blooms. The same size is need for all classes. This season, however, will see the last of such small boards in the case of the Japanese flowers, it being settled, I think, by all the more important societies that the new size for these giants shall be 23 inches in length, 21 inches wide, 8 inches high at back, and 3 inches in front. The change will give 1 inch more between each bloom, and the extra height at the back of the stand will throw the flowers forward and make it easier to see those in the back lines. Whatever kind of box is employed to convey these stands of blooms to the exhibitions, a detail worth remembering is the necessity of fixing everything—tubes, stands, and so on—as firmly as possible; then a little shaking will not do the blooms any harm. Blooms of incurred, Anemone-flowered, or true reflexed all look well, arranged about 2 inches clear of the stands. This position assists the judges, who can thus see every part of a bloom. The blending of colours will be done according to individual taste, but in this, as in other details, not a point should be lost.

Early-flowering Chrysanthemums.

The growing section is known as the early-flowering Chrysanthemums, whose time of

blooming is about mid-September, and must not be confounded with annual Chrysanthemums, raised each year from seed for the enrichment of the border. One fault against these herbaceous kinds is a want of variety in the colour of the flowers, but with the acquisition of new kinds, this blemish is gradually disappearing. The best is Mme. Desvraege, that beautiful Japanese variety, producing wreaths of bloom in the late September days, and very easy to grow, whilst its sports, C. Wermig, and such forms as Mrs. Hawkins may also be made note of. If only one kind can be grown choose Mme. Desvraege, cultivating it in pots and planting it freely in the border or bed. Gustave Grunerwald (silvery-white, tinted with rose), La Vierge (white), Lyon (purple), Flora (yellow), Vice-President Hardy (golden, edged with rosy crimson), Alfred Fleuret (lilac-rose, which passes to white), Mme. Jolivaert (white), Mons. Pynaert van Gseret, (yellow, with reddish stripes on the florets), Nanum (white), Anatisia (magenta), Frederick Marronet (bronze), Mme. Piccol (rose-purple), and Mme. Charvin (rozy-violet) are all of great beauty. A very simple way of growing these early-flowering kinds is to strike the cuttings in the month of February. Keep them sturdy by stopping the shoots about twice. Pot on the cuttings into 5 inch pots, and when all fear of frosts is over plant them out into the positions they are to occupy, where they may remain for years if so desired, with just a little covering of coal-ashes or Cocoa-nut-hire refuse in the event of very severe weather. During the summer give water if the weather is very dry. Tie the shoots to stakes to prevent injury from winds, and do not stop them, but simply aim at getting a profusion of flowers. A few good roots put in now even will flower in the autumn.—T.

3902.—Cutting down Chrysanthemums.—"Anxious" has made a mistake in placing the plants singly in 12-inch pots, which size is much too large. Two plants in each pot would have been much more advisable in every respect. If extra large blooms are required the plants not topped should be allowed to grow with one single stem until they make their first natural break, which will be shortly, and which is the result of the formation of a flower-bud in the point of growth checking the letter for a time. Remove at once the flower-bud and select three of the strongest shoots near the point of the plant, pinching out all others. These selected should be tied to a stake in the centre loosely, yet firmly. In time a flower-bud will form in the point of each shoot; if the stake placed at the right time from that had the flower on each will develop. The varieties named, as at present untopped, are naturally of a dwarf habit. Marie de Serin is not a large-flowering kind, as flowers go nowadays, but it makes an excellent bush, therefore I should advise it to be treated as one. Those that were stopped and have now three or four shoots to each I should advise they be stopped again twice, when five inches of new growth is made after each topping. Afterwards allow the shoots to grow away at will; the result of such plants will be abundance of flowers for cutting; the plants under this method of treatment ought not to be cut shorter than 10 to 12 inches in bloom.—E. M.

GARDEN WORK.

Conservatory.

Luouilla gratusima is a very handsome water-flowing shrub. It is not often seen in a good condition in a pot; but it is very easy to manage if planted out in a good bed of peat and loam, either as a spreading bush or trained over a wall. If treated as a bush in the border the knife should be used freely in spring, and if the position is a fairly light one every young shoot that breaks away if encouraged to grow freely will carry a large cluster of rose-coloured fragrant flowers in November or later. Weak soil-water may be given once a week when the plants are making growth, and again when the flowers buds have formed. The Fimelcar are a handsome race of New Holland plants, very useful to the exhibitor at this season; but one does not often meet now with the grand specimens that used to be in the collections of Mr. Thos. Bates and the Messrs. Cole, of Manchester. Henderson and spectabilis roses are two of the best; should be potted in good peat and sand, and watered carefully. No one would water a hard-wooded plant at this or any other season without first rapping the pot with the knuckles to test its condition. Good companions for the Fimelcars are: Pheonix proflera Barnesii, Tetraena verticillata, Polygala Dalmaniana, Leobachiaula biloba major, Mitrasia coccinea, Tovea Celsii (rather difficult to do well), Gonythia tulipifera, Boronia rumoides, and Aphelaea macrauba purpurea. Such things do not mix well with soft-wooded plants. They may be moved to the conservatory when in flower, but at other seasons will be better in a light house of moderate temperature by themselves in company with other hard-wooded plants of similar habit and requirements. Gather seeds of choice Primulas just before the pods ripen, and lay in paper in an airy room. The seeds may be sown as soon as ripe, as new seeds are better than old ones. Night air is beneficial to hard-wooded plants when the nights are mild. Some discretion is necessary in giving night air to keep out cold winds. By adhering to the weather will become settled a bit, and then more night air can be given. Cuttings of the young shoots of Daphnes will root new under a half-glass in a shady position, or will also cuttings of Azaleas with the young wood from which the cuttings are taken, just getting a little firm. The pots must be well drained and then filled up to within half an inch of the top with sandy peat, pressed firmly down, and watering, leaving the pots an hour or two to settle. Named Chinerias just out of blossom move to a cold pit, and give water enough to keep the soil moist to encourage the efforts to break away from the bottom. These latter should when fairly started be taken off with a sharp knife with some roots attached, and be potted singly in small pots kept close and shaded for a time in cold frames, and be potted on as required. It is a named sort might be grown again with advantage, as the quality of seedlings if the seed is purchased is so inferior. It is better to grow a few, all of which are flowers of good quality, than to buy a lot of rubbish. Keep Kalosanthus in a light position.

Stove.

Variiegated or ornamental-leaved Begonias are useful subjects to the small stove. Half-a-dozen good varieties will be found in the following: Arthur Melet, Marahella, Greig, Sourenir d'un Ami, palmata, and alba picta. They are not difficult to grow if not overpotted or overwatered. A compost of two-thirds peat and one-third loam with some sand will suit them. Everybody should grow a few Amaryllis. Some of the varieties are rather expensive to buy, though seedlings are cheaper, and if we start with small collection of named varieties seedlings may be obtained from them. The following half-dozen may be obtained at a reasonable price: Johnsoni, Prince of Orange, Aulica grandiflora, Brillant, Dr. Meester, reticulata. These may be grown in good loam and leaf-mould. They are not much trouble, as they will rest in a dry state for several months in the year, and will not require repotting every year, and seedlings are not difficult to raise. Give liquid-manure to flowering stove plants for the most part when the flower buds appear; there are exceptions to this rule. The Eucharis Lily, for instance, may have weak stimulants whenever we wish to hasten the production of the flower-spikes, even though they are not visible. By the use of stimulants with alternate restings I have been able to take three crops of blossoms a year. As a rule, stimulants need not be given anything till the pots are filled with roots, and seedlings are not difficult to raise. The disadvantages of permanent shade will be felt, no clouds appear again in the sky. If dull, cold weather returns, a little fire occasionally will be necessary. Nip off the ends of the growing shoots of young plants making free growth.

Plants for the Unheated Greenhouse.

This is a good season for buying in young plants for growing on. The plants we have had with us during the summer are more likely to be available during winter than if we buy in late in the season. Aralia Sieboldi, A. S. variegata, both of these are of easy culture, and are hardy in sheltered places outside. Arundo donax variegata, Bambusa Fortunei variegata, Eulalia japonica variegata, Phorolium tenax variegatum, Sedum carneum striatum, best for draping baskets, Farugium grande, Badum Sieboldi variegatum, Vinca elegantissima, pretty in pots and baskets, Anthericum variegatum, Ceronilla glauca variegata, Yucca filamentosa variegata, Dracena indivisa, this is fairly hardy, and if the winter very severe the leaves might be tied together and some coarse wrappings round the plant. The Fan Palms (Champrope Fortinoel and humilis) are quite hardy under a glass roof. In many places they pass through severe winters outside uninjured.

Ferns under Glass.

Where there is only a small house for the Ferns the Tree-Ferns are inadmissible; but in a large house half-a-dozen Tree-Ferns give one an idea of the tropics at once. Of these Adiantum acrostichum, Lyonia dealbata, Dinkonia lantanae, D. squarrosa, Lomaria glabra, Didymochloa lunulata, will make good selections. Lomaria glabra may be grown in a small house, as it is of dwarf habit. Shade

should be used judiciously where fronds are required for cutting; if exposed too much they lose their dark-green colour, and if heavily shaded the growth is too tender, and drops; the moment the plants are taken out of the house or the fronds used in a vase. There are a plenty of ripe ferns for many of the plants which may be gathered and sown. The soil should be treated with boiling water to kill the vegetable organisms contained in the soil. Fern-spores when good will grow in any damp, moist situation, kept close and shaded. Ferns established in pots will require a good deal of water now, and the atmosphere must also be generally moist.

Frames.

Fill up all vacant frames with something profitable. Where many flowering plants are required in winter some empty pits or frames must be reserved for such things as Begonias, Polkaettias, Justicia, and other winter-flowering stove-plants, which will do better in July and August and the first half in September in a pit than in the dry atmosphere of a house. Frames also will be required for Cystopteris, Primulas, and Cinerarias; but when these wants have been provided for all spare frames may be filled with Cucumbers and Melons or Tomatoes.

Window Gardening.

It is as well, I think, where many window-boxes are required, to plant them in as many different ways as possible, or perhaps to have them in sets, each set to be planted differently. In the course of my rambles I see a good many window-boxes, and these are planted in the same way with the same kinds of plants. Why not introduce more variety and get out of the well-worn track? Tuberos Begonias are coming on now, and will take the place of the Peiragoniums, which are going off. One of the best Begonias for a window is the old Weltoniana. I almost wonder the hybridist has not done more with this. One of the best Ferns for a room is Pteris tremula; if a second is required Pteris orealis comes in, and Madragalm with care may be kept in condition for a long time, but will not last long where gas is burnt unless covered with a globe.

Outdoor Garden.

We have now a welcome change in the weather. It is quite a great relief, and about the time it does not contain much rain, and up to the time of writing the rainfall has been very light. Still, now the change has come, we hope the dripping June, which the old proverb says puts all things in time, will help to repair the damages caused by the long drought. There is yet time to sow a few hardy annuals for late blooming, but they never do so well as those sown in March and April. There has not been much lawn-mowing lately, or rather there has not been much reason to cut, though the mower mows the turf, and stops the Daisies from seeding, so I think it is better to run it over the lawn occasionally for that purpose. During the time the bedding-out is in progress minor matters sometimes get in arrears; but now the bedding is finished everything must be fetched up to date. Hardy flowers in crowded borders where it was impossible to water effectually have been not so interesting and effective. I am afraid too many act upon the notion that the borders surrounding the garden are the best places for growing. Many of the finest bed plants are strong-rooting things, and will not thrive long in a crowded border, which is never or but rarely manured. What a job the watering has been! How often during the long drought I have wished for something like the overflowing of the Nile had put in an appearance here. Men are slow to learn lessons, especially when they involve expenditure. Many plants in the borders are now requiring stakes and ties, and must have prompt attention. Carnations are running up fast, and the ties must be so arranged that the stem can ascend without risk of being splintered off.

Fruit Garden.

There has been a fierce battle with insects in poor, hungry gardens, and the battle is not yet won. Very probably in some instances will be little better than a drawn battle. The trees and other fruit-bearing plants have not profited so much from the sunshine as they might have done, because the trees have not been made to meet the wants of the trees in a season like the present. Plums in some gardens have been bit hard, though the trees on walls are looking well. I expect the cold east winds are in many cases responsible for the paucity of fawns on the Plum-trees. Where the trees have been well cared for Peaches and Apricots are a full crop, too full in some instances which have come under my notice. It is difficult to find any determined enough to do justice to the tree when the fruit has been so plentiful, for overloading must be paid, through these migrating circuitous stances of which all may take advantage, which may be summed up in one short sentence, "Give more nourishment." Pines should be overhauled during June. The plants which are showing fruit may be topdressed and receive stimulants in the water, which should never be used cold, either for watering or syringing. Succession Pines shift into larger pots. Suckers may be taken off the tree when the fruit has been so plentiful, and be potted in suitable sized pots and be plunged in a warm bed in a close pit. It is customary to remove the beds during the time the pottling is sowing, and the old plunging soil, whether fan or leaves, should be turned over, some of that which is much decayed take out and a certain proportion of new man and fresh leaves brought in to put out a little new file into the beds. Do not daily over the work, as Pines suffer from exposure.

Vegetable Garden.

Cardoons are not much grown, but a row or two comes in useful where good cookery is appreciated. The plants for the earliest crop are generally raised in pots and planted out in the trenches about the end of May. The later rows may be sown in patches 15 inches apart in the bottom of the trenches and all removed, except one, if they all grow in each batch. The trenches should not be less than 5 feet apart and should be a foot deep, and 15 inches wide, and manured some as for Celery. Main crop of Celery may be put out now as for Celery. There are several ways of growing Celery. Where really fine heads are required the slope row system is the best for sowing or cooking. Useful Celery may be grown in double rows or in beds for summer use. For cooking the blanching may be done by lying several thicknesses round the plants with or without earthing up. The rows require

the air from the plants and branches more speedily than earth. Do not forget to plant a bed of the Turnip-rooted Celery or Celeriac. It is very good for kitchen use, and a greater weight can be grown on the land than in the case of the ordinary celery. It is a good border of Turnips for summer and autumn use. If the fly or beetle appears on plants just up dust with lime and stir the soil freely. Veitch's Red Globe is a good variety to sow from this onwards. Plant out Brussels Sprouts and new Walcheren Cauliflower for autumn. Much Tomatoes in houses with old manure as soon as the frosts are setting freely. They require a good deal of enrichment when heavily laden, and I find this topdressing of manure comes cheaper than artificial. Place a thick mulch round the hills of Vegetable Marrows, Ridge Cucumbers, and Peas. K. HODDY.

Work in the Town Garden.

Carrots are an unusually early this year. In a very exposed garden I have some already showing colour, and in sheltered places in the south they are in some cases already expanded. The flower stems should be supported with the stems of other plants, but do not draw the flutes high, or the stems will bend and perhaps snap; especially when firmly planted (as they always ought to be) in a bed of deep and moderately good soil. These plants suffer less from drought than almost anything else, yet, at the same time, they should have a good watering occasionally, when no rain falls for weeks together, particularly if the soil is naturally light and porous. Anything like fresh or rank manure must be avoided for these plants. A little thoroughly decayed and sweet material from an old hot, or a manure bed, or some good leaf-soil, being quite sufficient. They enjoy also burnt earth and old mortar rubbish, and unless these were added when preparing the beds, a top-dressing, consisting of one part each of the foregoing, with an equal part of fresh or maiden loam and a dash of bone-manure or some well-rotted fertilizer, applied now, just as the plants are advancing into bloom, will be found highly beneficial. If large blossoms are wanted the plants should be well thinned. Campanula persicifolia alba plena is a lovely thing in the hardy town garden, or, indeed, in any other just now. There are both single and double blues, as well as white, of this plant; but the one mentioned is a real gem, either for cutting or ornament, and nothing can be more easily cultivated. All the Campanians, or nearly so, are good town plants, and there are a number of them, varying in height from 3 inches up to twice as many feet. C. pyramidalis and its white variety are beginning to push up their stately spikes of bloom also, and plants in pots should be assisted with liquid manure. The white variety is a splendid thing for conservatory decoration. Seed of all these may still be sown, and with good culture the plants will flower freely next season. Redding-out is progressing rapidly, and the showers we are getting will give the plants a better start than any amount of watering. Single Petunias of a good strain make a lovely bed in a fine sunny sward; but, like the Petunians, they are bad weather flowers. Both these are best in flower in a cool soil, made firm. On the other hand, the Tuberos Begonias reveal in a "dripping time," soil some of the beds are planted with such we are sure of some flowers, whatever the weather may be. There is time enough yet, however, to plant out Begonias and other tender things; as a rule, the second week in June is early enough. H. O. R.

THE COMING WEEK'S WORK.

Extracts from a garden diary from June 3rd to June 10th.

Just finished bedding out. It is well to one's mind to get this work over, as everything else has to give way to it. Fortunately there is not so much of it as there was a few years ago. Several of the ribbon borders have been planted with good selections of hardy flowers, and I find them so useful for cutting, and when one looks back over the week's weather, it is a relief to find that the rows suitable for cutting, the wonder is the husband in his entirety lasted so long. Busy in the Tomato house, tying, stopping, untying, and watering. The fruit ripening fast now I find a thick mulch of manure over the borders very useful, nourishes the plants, and serves so much watering. Planted main crop of Celery; the bulk of the crop is in single rows. There will be a few trenches with two rows in each, and a bed will be planted on the level that will be blanching with stakes for late use. This bed will consist of a number of rows planted a foot apart, and be planted with the late sown plants, which will not be till late in spring. If severe weather sets in the bed will be sheltered with horrids thatched with straw to form a sort of open-roof over the bed. I have never lost any plants from frost when sheltered in this way; the thatch keeps off heavy rains as well as severe frost. Looked over Vineries to remove laterals. Fortunately I have now been enabled to clear out the Vineries and keep all the plants in the open air. Plants in fruit houses so much in winter and spring, but early in June every house should be cleared, except it may be a stray plant or two of something special. Nailed on young shoots of Peaches and Apricots now walls. I have, as usual, a good crop, and this I attribute to the sheltered condition of the site of the garden, which enables me to secure a crop without using heavy coverings. These are very likely to be kept on too long and the growth weakened by so doing. Potted on Chrysanthemums, Zonal Pelargoniums, and other plants for winter blooming. Chrysanthemums after potting are fixed in their summer quarters, the tops of the stems being secured to wires. The plants will stand in single rows so that sun and air can circulate freely among them. This is a necessity. When the plants stand thickly in beds there is sometimes a difficulty in getting the growth ripened. Planted several rows of late Peas in trenches. The trenches were prepared several weeks ago and are now in good condition. Sutton's Sulham Prize is planted larger. It is a good variety, strong and vigorous, and other plants of the same variety are planted in Aralia, Grevillea, Cyperus, &c. Filled several baskets with Achimenes. Cucumbers in houses are topdressed every week now; not heavily, but enough new compost is placed over the roots to cover them. Sowed Fern spores in pans in shady part of propagating-house. Pans are covered with squares of glass. Moved a batch of Tuberoses

* In cold or northern districts the operation is to be done to the Garden. Work may be done in the open air, but a fortnight later than is here indicated with equally good results.

to the forcing-house to open flowers. Rubbed off a lot of the useless shoots from standard Briars in anticipation of budding when the season comes round. Cut Box edgings, sowed Turnips, planted out Brussels Sprouts, thinned and pegged down Cucumbers and Melons in frames. Early Melons are now ripening and have been watered for the last time. Ripening fruits suffers in flavour if watered after the colour changes. Of course, the plants never get so dry as to lofure the foliage or to check the growth of later fruit on the same plant. Hoed everywhere to loosen up the surface; the benefits from surface stirring are very great. Used weed killer on gravel walks, it saves breaking up the walks and keeps them perfectly clean. Must be used in dry weather to do the most good.

OUTDOOR PLANTS.

ROCK CRESS (AUBRIETIA).

THE Purple Rock Cress in its numerous varieties forms a very charming and valuable group of trailing rock plants. It is a native of the high mountains of Southern Europe, and perfectly hardy even in the most severe winters. A plant so accommodating and yet so beautiful is naturally popular, and few rockeries are without their selection of the varieties of *Aubrietia deltoidea*. These varieties were of different shades of purple until the advent of *A. d. Leichtlini*, named in honour of Herr Max Leichtlin, who has done so much for plants in general and *Aubrietias* in particular. The indomitable courage and perseverance of Max Leichtlin will be apparent when our readers learn that he has set himself the task of produc-

ing a Red *Aubrietia*, and between that and *A. Hendersoni*, his starting point, *A. Leichtlini* is certainly more than half way. It has taken twenty years hybridising and selection to produce *A. Leichtlini*, and it is well worth the time and trouble, as no prettier or more elegant trailing rock plant has yet been seen in English gardens. *A. Hendersoni* or *Campbelli* was the best variety until Max Leichtlin introduced *violacea*, a handsome variety of a varying purple-violet shade. The next step was *Leichtlini rosea*, and finally *Leichtlini*. We are anxiously awaiting further developments, and hope soon to see a real red. One of the earliest to bloom is *A. græca*, with pale purple flowers and a dense, close habit, followed closely by *A. tanica* and *A. Pinardi*, a form with glaucous leaves and lilac-purple flowers. *A. Baugainvillea*, with light violet-purple flowers and a dense habit of growth, is a very useful rock plant, and one that is often found on rockeries. *A. Eyrei*, *A. purpurea*, *A. columnea*, *A. hesperidifolia*, *Mooreana*, and a host of other forms all present some feature of interest to the lover of these charming alpine. They are amongst the first flowers to greet us in early spring in the rock garden, and they are prominent even now.

Purple Rock Cress (*Aubrietia purpurea*).



The Poppies are a charming race of flowers. The forms of the Corn Poppy, Iceland Poppies, and the beautiful French types, whilst they are amongst the most easily cultivated of garden flowers; *P. orientale*, is, however, the most striking in habit and bloom.—C. T.

Achilleas.—The Achilleas are many in number, but the finest are the varieties *The Pearl* and *A. mongolica*, which are not yet well known, but charming flowers both in the border or for cutting. *A. The Pearl* is not unlike the familiar Double Sneezewort. *A. ptarmica* fl. pl., the flowers each like a little rosette, pure-white, and produced with great freedom. They are larger and of a better white than those of the old Double Sneezewort. It grows well in ordinary garden soil, which should be rather light than otherwise, and will give plenty of bloom for cutting. *A. mongolica* is single, the flowers comparatively large, and very pleasing. It is a delightful hardy plant, grows well in ordinary soil, and bears its flowers in large clusters, which may be cut with advantage for the house. Both these varieties are worth growing in all gardens, as we are not ever rich in beautiful white-flowered hardy plants that will thrive in ordinary gardens.—T.

Saxifraga Camposi.—In the long list of Rockfolks there is more useful generally than *Saxifraga Camposi*, also known as *S. Wallacei*, and it is fairly common. It grows freely in ordinary gardens, and is one of the best hardy plants an

amateur can have, either in the border or in pits for the greenhouse. The plant makes a dense green growth, characteristic of the *Saxifraga*, and the flowers are of the purest white, individually large, and continuing in beauty over a fairly long season. It is so free and vigorous that one always feels sure of a good display of its white flowers. A good clump on the rockery is full of charm, and moderately light well-thinned soil is necessary for the production of sturdily growth and a full display of flowers. A few potsful of it in the greenhouse in the late spring give much pleasure; the flowers so profusely produced are pure-white.—T.

3891.—Madonna Lilies.—This year the drought has had a bad effect upon these Lilies, but chiefly in attuning the growth, so that the flowers are likely to be small. You were, however, wrong in planting the bulbs so near the surface; the holes should have been trowelled out quite 6 inches in depth, and a little silver sand put under the bulbs, the holes being then filled with a compost of loam, well decayed manure, and sand.—A. G. BUTLER.

The Lilies are evidently afflicted with the fungus, which has destroyed this beautiful flower in some localities, and nothing seems to be able to stamp out the plague thoroughly. The fungus seems to affect the stems, and they get in the condition described by you. It is sometimes recommended to wash the bulbs in paraffin and bury them in dry soil, replanting again in a fresh position. *L. candidum* is the chief species that the fungus attacks. An apparently remarkably healthy group of Lilies will become affected with the fungus and collapse in a week. It does not follow that the bulbs will be affected, as sometimes they lift well, in perfectly sound condition, and then it is wise to place them in the sun for a considerable time to dry well, selecting in the future a fresh site. *L. chalciconicum* also suffers much from the disease. One often finds the best clumps in cottage gardens, and I remember, not long ago, a splendid mass of the *White Lily* in bloom in a Bath garden on a slope, the situation very warm and sunny, the soil light. One notices how fine is the growth in such situations. The bulbs, when in pots, are afflicted in much the same way, and when affected with disease it is best to shake them out of the pots, wash away the old soil, and then dry the bulbs well in the sun. Use then clean pots and fresh soil entirely, not tea rich. The more naturally the bulbs are grown the better. Many readers of *GARDENING* can doubtless offer advice upon the question raised by "L. D. E.," and can assist him.—C. T.

3876 — Candytuft.—Cuttings of half-ripened shoots, 3 inches long, taken off at the end of June and dibbled firmly into sandy soil on a north border, strike fairly well. If, however, they could have a temporary glass covering, by placing around them boards or freshly-cut turf, lodging on this squares of glass, success would be doubly assured. In this position the plants should remain until the following April, when they can be planted where required.—S. P.

A very good way to propagate Candytufts (the perennials kinds) is by seeds, but they may be also increased by cuttings of the shoots. In raising the plants from seed you will find, perhaps, some tufts in the garden ripening seed, which should be sown as soon as ripe. The usual way is to keep it in packets, and sow in the spring, but this is not the best way. Some advise sowing in the open, others in pots, but the safer way is to sow the seed in pots, which may be placed in a cold frame or a corner in the unheated greenhouse. You will, if the garden be small, have them under better control. Prepare as many pots as required, having them quite clean, put a large clean crock in the bottom, over this some smaller ones, and then on the top a little of the rougher soil, or, better still, leaf-mould. Then fill up to within about half an inch of the top of the pot with the fine soil; make the surface quite level, then thinly. Just sprinkle on the surface a little fine soil, and before sowing make the compost nicely moist. When required give water, but on no account make the compost too moist. Do not be in too great a hurry as regards germination, as some of the seeds will take longer than others to appear. When the seedlings are large enough to handle comfortably, pick them out in the spring

The Eastern Poppy.—A few clumps of the Eastern Poppy make a great show of colour in the border in June, and broad colonies in the pleasure grounds are splendid for colour, but it

they may be planted out in the positions they are intended for. You will by this treatment lose fewer than if they were left in the open. Nice shoots will strike, and may be put in pots, or if a little bed of light soil can be made up in a shady border insert the cuttings there, placing a handlight over them. I have struck many in this way. As regards raising from seed, it is important to get the stock true, as some kinds especially vary from seed, whilst some do not produce much seed here, as *I. gibraltarica*, which,

a moist, shady spot, and the soil should be rich, yet not heavy. Half the poor results seen in gardens in the culture of this flower are due to bad management, or rather no management at all, as the plants are simply neglected, and left year after year in the same position without any thought of their requiring fresh soil and situation. You had best, in forming a new bed of them, put the crowns about 3 inches apart, and, to get the best results, give a good dressing of well-decayed manure, and this may be repeated each year.



Hardy Ferns in a London garden. (See page 191.)

however, is not difficult to get from cuttings. The best *Candytufts* are: *I. Garreuxiana*, *I. Princi*, *I. correaeolia*, *I. gibraltarica*, and *I. semperflorens*.—C. T.

—The perennial *Candytufts* may be raised from seeds, but are more readily propagated by division and cuttings. If there are no hand-lights or frames to place the cuttings in, it will be better to propagate by division. They are well known and useful garden plants, easily grown if planted in good soil and well exposed to sun and air. One of the best is *Iberis semper-virens*, producing long racemes of pure white flowers in spring and summer. This is a truly handsome perennial. *I. semperflorens* will flower in the autumn, and its rather large white flowers are sweet scented. The *I. gibraltarica* with pinkish flowers is very pretty in the early spring.—J. D. E.

—The perennial *Candytufts* may be propagated by division, by cuttings and from seeds, but some of the varieties produce seed sparingly. Cuttings should be placed under glass. I have generally been most successful from July to October. It is best to make a special bed and place a thin layer of sand on the top. Keep close and shade. They are rather slow in rooting.—E. H.

3889.—Lilies of the Valley not flowering.—They do not like a very sunny position; in fact, I once found the Lily of the Valley in a wild state, and it grew in a shady wood and flowered well; but as they have flowered in previous years and have not done so this year, it is possible that they require to be replanted in fresh soil by digging up and parting out the plants. A dressing of shert manure over the plants is also beneficial when they start into growth. The plants should not be disturbed until the leaves die down, and they may be lifted and replanted any time between that and the time for starting to grow again.—J. D. E.

—Lily of the Valley in many places, where growing in sunny spots, have not flowered this season. The flowers died off with the heat and drought. Abundance of water and a little shade might have saved them. Lily of the Valley does best under a thin shade of foliage in the woods. If grown in the sunshine they must have plenty of water in a dry time.—E. H.

—The plants are doubtless behaving thus, because they are too crowded, and want lifting. The best season of the year to lift Lilies of the Valley is the early autumn, as then the leaves have decayed, and the clumps may be separated in single crowns. The Lily of the Valley requires

We should much prefer lifting and replanting than to merely thinning out the crowns, as the plants evidently need a fresh site. This is such a sweet flower that it is worth a little care to produce fine spikes.—C. T.

—A sunny position is not the best for these plants, but the probable cause of the want of flowers this year was insufficient moisture when the buds were swelling. I watered mine with a large can with the rose off as soon as the buds appeared and had a grand show of bloom as usual.—A. G. BURTON.

3879.—Lawn tennis court.—It is not possible to tell you what it will cost to make a tennis court of either of the materials you mention. In some places a suitable gravel would be very expensive, and cinders are not always readily obtainable. Preference should, however, be given to gravel, because of its making a firmer and clearer surface. If your ground is naturally well drained a depth of 7 inches of gravel will be enough. The bottom layer may be 4 inches in thickness, and the material may be much coarser; on the surface there should be 1 inch in thickness of fine sifted gravel. If your ground is level it will be comparatively a light job, but if you have to excavate, or to raise any part, the labour will be considerable, especially in the latter case, when the new moved earth will require well ramming as the work proceeds. As the comfort of the court depends mainly on the surface drying quickly in the winter, you must first put in a drain through the centre, if the sand is of a retentive character. You must also make provision for the surface-water to readily pass away by providing gratings and drains to conduct it to the drain first laid. Correct players, I find, do not like the ground to fall very much, with the object of quickly getting rid of the surface water; when that is the case I allow a 2-inch fall from the centre to each end. If the fall is to extend the whole length of the court it need not be more than 3 inches, which is ample if the surface is kept in good order.—J. C. C.

3878.—Calceolaria rugosa.—This is one of the *Calceolarias* used for bedding. It is a shrubby species, and has also been grown under the name of *C. integrifolia*, under which name it is figured in the "Botanical Register," 744. It is usually propagated by cuttings, but if seed can be obtained it is easy to get up a stock in that way. There are other species used as bedding plants with herbaceous stems. The pretty *C. amplexicaulis* is a beautiful, pure yellow species, well adapted for this purpose,

but there are other bedders, mostly hybrids, of *C. rugosa* and *C. amplexicaulis*. There is also *C. oorymbosa*, which will continue to flower all through the summer and autumn months.—J. D. E.

3883.—Doronicums.—Yes; *D. austriacum* is the species, *D. Harpur-Crewe* being an improved variety of the same. It is one of the very best spring-flowering plants we have, and the flowers last a long time, both on the plant and in a cut state. *Doronicums* are hardy herbaceous perennials, and are easily cultivated in any ordinary garden soil; therefore, few hints are needed. It is well to transplant in the autumn; you will then have a fine show of bloom the following spring. If a few are moved early in June, after the flowers are well over, you will secure a second crop of considerable quantity; but this weakens them somewhat for next spring's flowering.—P. U.

—The variety *D. Harpur-Crewe* is different from *D. austriacum*; but it can be obtained at any nursery where florists' flowers and herbaceous plants are sold. *Doronicum Harpur-Crewe* is the same thing as *D. plantagineum excelsum*. *D. Pardalianche*, *D. Columae*, and *D. alticum* should also be grown. No plants are easier to cultivate in ordinary garden soil, and they increase at a very rapid rate. The plants should be dug up every second year, and be propagated by division.—J. D. E.

—*D. austriacum* is a neater and dwarfier plant than *D. Harpur-Crewe* (*plantagineum excelsum*), but otherwise very similar—I mean as regards the colour, &c., of the flowers. The latter often grows 3 feet in height, while *D. austriacum* seldom exceeds 18 inches, and is of a more tufted and spreading habit of growth. Most of the *Doronicums* grow freely in any fairly good garden soil. *D. Harpur-Crewe* and others luxuriate here in very stiff clayey loam, and flower profusely, but I daresay that in a more free and mellow material they would become finer still.—B. C. R.

—There is much similarity between them, but the *Harpur-Crewe* variety is later in blooming, if anything, and is a first-class plant. It is also, to me, a more robust kind, the flowers being large, well chaped, and produced with great freedom, whilst as regards increase, it may be soon made to double itself. The *Doronicum* produces good clumps, and it is a very easy matter to divide the stools, the best season being the early autumn. All of this class make vigorous growth, and in ordinary gardens, even where the soil and position are not very good, the plant will thrive well, making gay masses of colour in spring and early summer. I have seen this spring some splendid beds of *D. Clusi*, the flowers a perfect and welcome mass of colour thus early in the season. They may also be naturalised with good effect, as they are of a thoroughly hardy nature. *D. austriacum* is one of the best of the family, a good garden plant, free and vigorous; and *D. caucasicum* may also be mentioned; whilst a bold, showy form is *D. plantagineum excelsum*. It may be mentioned also that plants lifted and potted make a gay show in the greenhouse earlier than those in the open, and large quantities are grown in this way also for cutting, as the flowers are much like those of the Yellow Marguerite. The variety *Harpur-Crewe* is very useful for decoration, and should be lifted for greenhouse decoration and grown also in the border.—C. T.

—The variety *Harpur-Crewe* has simply larger flowers than *austriacum*, the latter being the type. Why not grow both? The variety *Pardalianche* is later in opening its flowers, which are also smaller, but the colour, old-gold, is very pleasing.—B. P.

3880.—Campanula pyramidalis, &c.—The Chimney Bell flower, as this *Campanula* is often called, is perfectly hardy and useful for flowering in the herbaceous border, and also in pots in the greenhouse. Seed should be sown in the open ground at the end of May, putting out the plants where to flower when large enough. Not during the current year will they flower, but the next. For pot culture select the strongest plants from the same sown seeds, placing them in 8-inch pots in a compost of three parts loam to one part of horse-manure, standing them in a cold frame for a few days until they have recovered from the check of removal. A sunny position out-of-doors will suit them best, afterwards removing them to the frame during the winter. When the pots are full of roots shift the plants into larger, the

strongest into those 11 inches in diameter, the smaller size less. Copious supplies of liquid manure will be an advantage when the pots are full of roots in which they are to flower. A light, airy greenhouse is the best site for them when the blossoms are expanding. Although the flowers open very well out-of-doors, yet they are liable to be injured by rain and wind; still, those persons without the luxury of a greenhouse can successfully cultivate this Campanula. In the place of the cold frame for sheltering the plants during the winter, plunge the pots in ashes or Cocoa-nut-fibre refuse. Although this is a perennial, it is a good plan to sow a pinch of seed every other year; the roots lose their vitality after two seasons' flowering. *Lophospermum scandens* should be treated as a half-hardy annual—that is, sown in small pots in March and shifted on into large when well rooted, using sandy soil, in a gentle hot-bed, gradually hardening off and planting outside in a warm, sunny position when all danger from frost has passed. Without the aid of glass this is a delicate subject to cultivate.—S. P.

— This is a good border plant. It is strong in growth, and the flowers are produced thickly on the tall, handsome stems. A good specimen in the border is a fine picture in the summer months. It likes a shady position, and is best treated as a perennial. It is a very fine plant also for the conservatory, and if you have young exemplars, give them careful attention, keeping the soil moderately moist. If the seed of your plants was raised in the spring, they will be making headway, and when properly established may be shifted into 4-inch pots for the winter. Old plants will need as they come into flower a little liquid-manure, which is very helpful as the flower-spikes make progress. Those plants raised last year, if the pots are full of roots, should be sifted, and a fine display may be looked for next season. Seed sown in the spring will produce good plants the following year if they are well looked after; but often the finest results come from the plants the next season. During the winter they may be kept in a cold frame, and it is important not to induce a gross growth by an unduly rich soil or over-feeding. A group of this Bell-flower is very beautiful, the flowers either blue or white, and they are produced on tall stems. A good display is kept up over a long season, as they open up the stem, and thus continue long in beauty. Good pot specimens may be placed out on terraces, corridors, halls, besides the conservatory, with excellent result. There is a variety named *compacta*, which, whilst preserving all the good qualities of the type, is much more compact in growth. It is well suited for pot culture. *Lophospermum scandens* is a climber, and will succeed well in the open in the summer months, giving variety to the garden. It is charming when rambling over a tree-stump, but likes a warm, sunny spot. You may raise seeds in spring in heat, like other tender things, and if the situation is at all cold, it is better not to trust it in the open in the winter, but give protection of a greenhouse.—C. T.

— This might, I suppose, be classed as a hardy perennial, but it is generally grown in pots in a cold frame till large enough to plant out or pot on for the conservatory. *Lophospermum scandens* is a greenhouse climber, or it may be raised from seeds annually and treated as an annual, but it is better to grow a plant or two in the greenhouse and strike a few cuttings early in spring for outdoor plants. The plants I raised are earlier and usually flower very freely. I have used this largely for filling round the edges of large baskets on the lawn, for which purpose it is very effective.—E. H.

— This Campanula is quite hardy, but as the seed is very fine the best way to treat it is to sow in well-drained boxes of sandy loam in a frame, from April to June, to flower the next season. Where the soil of the garden is light and well drained the seedlings may be pricked out into a nursery-bed when large enough, and finally be planted out where they are to bloom in the autumn; but if it is hoary, damp, or cold it is better to pot the plants singly, winter them under glass, and plant out in March. They also succeed capitally under pot culture, and flower beautifully in 7-inch to 9-inch pots. *Lophospermum scandens* is a half-hardy climber, with tuberous roots. The seed should be sown in March or April in a hot-bed, or in May in the

greenhouse, and the seedlings be pricked off and potted as they come large enough. Winter them in a frost-proof place, and plant out in May in rich, mellow soil and a sunny position. Plants from seed sown in February in heat frequently bloom the same season, but, of course, they do not grow very large the first year. The tubers may be safely left for the winter in the ground at the foot of a warm wall, where the soil is moderately light; but it is as well to cover them with a foot of ashes or Cocoa-nut-fibre before frost sets in.—B. C. R.

3877.—**American Bellbine or Bind-weed.**—This is by no means the same as our Wild *Convolvulus* as regards colour. It is semi-double, of rosette shape, and of a soft rose colour. But it is a species of our common and troublesome weed; *Calylegia spinnincarnata* is its full and correct name. It is a native of North America, and when once established in our gardens is almost as troublesome as our common species. I cannot recommend "J. K." to plant it unless he can keep it confined to one spot. This is difficult, because it spreads so freely and persistently.—P. U.

3829.—**French Cannas.**—These varieties usually grow between 2 feet and 3 feet in height—at least, those mentioned—but you must remember that the older type of *Canna* attained much greater height. The dwarf varieties—especially when young—are very charming in pots, as one may judge from the plants at exhibitions. If they are grown in a cool greenhouse during the summer, like such things as the *Fuchsia*, they will flower well in July, and if more heat can be given than that of an ordinary greenhouse flowers will be produced during the winter. They are splendid things to bloom in the greenhouse in late summer, and may be planted out with every prospect of success. The great point to bear in mind when growing the plants in pots is to feed them well and use for soil loam mixed with well-decayed manure, whilst when the pots are becoming full of roots liquid-manure occasionally will go much to promote strong growth and a free display of flowers. The tall plants that we used to use in sub-tropical beds were taken up when the frost had cut the leaves down and stored away like Dahlias. They were divided in spring and started in gentle warmth. No doubt the varieties named will be sufficient for you, and they have flowers that vary greatly in colour. The more effective are the deep self kinds. If your plants are in the greenhouse now give them plenty of air to keep the growth stocky, and when the flowering time approaches feed with liquid-manure giving

early spring divide them singly and then pot them, putting them where they may get a genial warmth to start them. When they made sufficient progress repot them, and before planting out in the open keep them in a cold frame, then exposing them altogether; they are then well hardened. The dwarf kinds are very fine for beds.—C. T.

FERNS.

HARDY FERNERIES.

A HARDY fernery is one of the most delightful features one can have in a garden, but we do not always find a garden provided with one, even though there is a shady nook on the spot which one could turn into a Fern paradise with very little trouble or expense. It is useless attempting a hardy fernery in an unsuitable spot. Ferns are essentially shade lovers, and shade they must have if they are to be grown successfully. But if one has not a shady wood, a snug corner where partial or complete shade is afforded by wall, building, or tree, will be suitable for the cultivation of Ferns. A well-stocked fernery reveals at a glance what abundant variety exists in hardy Ferns alone. Not only can we grow British Ferns out-of-doors, but, also, all the European sorts, North America—which is peculiarly rich in Ferns—Japan, and China, have likewise contributed to our outdoor Ferneries, and even from New Zealand we have some of the most beautiful hardy Ferns that can be grown, an instance of which is afforded by the elegant *Hypolepis millefolium*, which is only just becoming well known as a hardy Fern. The fronds are finely divided, and grow from a foot to 18 inches high. I have seen a mass of it quite 6 feet in diameter, and its creeping roots spreading in all directions. The illustration on page 190 shows what capital plants hardy Ferns make for a town garden. Indeed, nothing is superior to the Male Fern (*Lastrea Filix-mas*) for smoky localities. G.

ROSES.

ROSE LAMARQUE IN MADEIRA.

PROBABLY every beautiful Rose has some place where it is best. Rose lovers, no doubt, see charming instances of where their favourites do well. Of all the Roses I have ever seen the one that has struck me as the most wonderful in its graceful luxuriance is *Lamarque*, in Madeira. Other Roses do well in the same favoured island, particularly *Cloth of Gold*, of which I



Rose "Lamarque" in Madeira. Engraved from a photograph sent by Mrs. Bridson.

remember a wonderful covered way in an English lady's garden, with the *Bleu Kennedy* running up through it, and such flowers as I have never seen in England. But *Lamarque*, which I think the Rose of all White Roses, was everywhere in the island, running over cottage walls and hedges. Greatly to be regretted, some of its flowers were brought to the markets. Some bushes

remember a wonderful covered way in an English lady's garden, with the *Bleu Kennedy* running up through it, and such flowers as I have never seen in England. But *Lamarque*, which I think the Rose of all White Roses, was everywhere in the island, running over cottage walls and hedges. Greatly to be regretted, some of its flowers were brought to the markets. Some bushes

were pruned hard, while others were in full bearing. One might see a fountain of lovely blooms coming out of a Pepper tree, and in some neighbouring trees a lot of black stems pruned hard, looking like Vines, which on enquiry were found to be *Lamarque* pruned and at rest, while other bushes were in full luxuriance of growth. Of course, that could only happen in Madeira and like countries. But it is strange how seldom one sees this fine Rose well done in England. Our country—at least, a large area of it—is quite good enough for it. On south walls of houses, on heavy soils at least, its great heads of lovely flowers are delightful. R.

SEASONABLE WORK AMONG ROSES.

DURING the past two weeks we have been favoured with a few welcome showers. This has brought Roses on space, and they need a considerable amount of attention from now onwards. Stocks must be placed to dwarf maiden plants, and their growths secured as soon as possible. A little thought should be had in sticking Roses. For instance, a 2 feet stick will do very well for such short varieties as *Baroness Rothschild*, *Etienna Levet*, and *Captain Christy*; also for the short Teas, like *Souvenir d'Elise Yarden*, *Catherine Mermet*, and *Niphetos*. But it would be folly to use as short a size for *Gabrielle Lulzet* and *Ulrich Brunner* among the H. Perpetuals, or for the climbers among Teas and Noisettes. In the majority of cases, my readers who have worked stocks of their own will be aware of the strength of growth their varieties attain. If not, let them refer to any Rose catalogue, and they will almost always see the habit of growth specified. With maiden standards it is much best to use a stake of sufficient length to answer the double purpose of supporting the stem and young Rose growth at the same time. Roses, especially these open walls, are very early this year, and in southern localities our walls and fences are covered with bloom almost as much as is generally the case by the end of June. I have already cut *General Jacqueminot* from maiden plants; but the bulk of my H. Perpetuals in the open are much less forward in proportion to the Teas and Noisettes. It is well to keep the surface soil moved with a hoe. I find this conducive to healthy and clean foliage. Unless Roses carry clean foliage, they cannot possibly be in such a healthy state as is desirable. Clean and healthy foliage is a very pleasing sight in itself, independent of any bloom. If you have a few strong growing plants on a wall that are in full and rampant growth, it is not well to allow them to check from want of a few cans of water at this time. One, or at most two, thorough soakings will be of immense benefit now. Walls absorb a great deal of moisture. Besides this, I always plant the strongest and most succulent growers in such a position, and during a dry season like the present they often really need a little assistance. If we can secure good and strong growth now, we are almost certain to get it well matured early in the winter. This will mean greater immunity from frost, and a good crop of flowers next spring.

INSECTS.—Many queries are now falling in as to how is the best way to get rid of these. Green-fly is by far the most prevalent. This is very easily removed if one would but commence in time, and put sufficient vigour behind the eringers. I do not mean that the solution should be applied in one steady and strong jet. It is much better to make short and sharp strokes of the piston. This will cause correspondingly short and sharp jets of insecticide. By using it in this style, the solution goes much further and is more effectual. Use it freely, making certain that every portion of wood and foliage is brought into contact with the mixture. It is just the same here as in watering; the job once done thoroughly is more beneficial, less laborious, and cheaper than two or three half applications. It is not necessary to always use an insecticide. If soft water be used freely, and with a sufficient vigour, it will often answer the purpose remarkably well, and cannot possibly do any harm.

OWN-ROOT ROSES.—These may now be struck from short growths of Teas and Noisettes under glass. Three-parts ripened wood should be chosen, and firmly inserted in a light and sandy compost. They should be well watered at first,

and kept close until rooted. This will usually occupy from six weeks to two months.

BUDDING.—Stocks intended for working this summer must now be frequently looked over, especially the standard or hodge Briers. All side-growths and suckers, except the two or three needed for the buds, must be removed as soon as they form. It is best to cut them off close to the stem at once. Unless you do this, they are very apt to form and push out several more shoots from around the base of the first one. Owing to the remarkably dry spring, the majority of Brier-beds present a woeful appearance. My own do not contain more than 7 to 10 per cent. of survivals, and I knew of several equally as bad. Where one had a few Briers left over from last year, or where the buds failed to grow, they cannot do better than insert some desirable variety at once, obtaining their buds from plants under glass. These will now be carrying some growth in prime condition for working from. Teas especially produce very sound buds under glass. If the old Briers be left too long they get much too coarse for the successful working of any but the very strongest growing Teas; and, unfortunately, it is not these which fail to take, nearly as much as those of weak and medium growth. A few of our finest Teas are difficult to propagate, both as regards securing suitable buds, and also their living when they have been obtained. *Oleopatra*, *Souvenir d'Elise Yarden*, and *Comtesse de Nadailac* may be cited as examples. These and similar kinds produce good wood under glass. P. U.

A few good new Roses.—A very beautiful new Rose is *Turner's Crimson Rambler*, which has been shown on several occasions of late at the leading exhibitions. The plants are of strong growth, and the flowers produced freely, perfectly double, and intense crimson in colour. It is a Rose for small as well as large gardens, remarkably vigorous, and a most worthy addition to the *Polyanthes*. Two charming tea-scented varieties are *Medea* and *Corinna*, the former having very delicate lemon-yellow flowers, a clear and tender shade, whilst the plant is of strong growth as far as I have seen it. *Corinna* is another good Tea-scented Rose, the flowers variously coloured, yellow touched with rose, a number of tints melting one into the other, a charming gradation of tones. A hybrid Tea-scented Rose is a delightful button-hole Rose, the flowers very neatly shaped, yellow, with the petals tinged with a carmine shade, the fragrance very sweet. This will, I think, become a popular variety, especially for cutting, the flowers so neat and charming in colour. A good and useful Rose is *Pink Rover*, which is a half climbing kind, the flowers very delicate pink, deepening in the centre, full, and sweetly scented. It is free, and will cover quickly dwarf fences and pillars, whilst it blooms over a long season, spreading abroad a sweet fragrance. *Sappho* is likely to prove a useful variety, the growth being very vigorous, and the flowers are of pleasing colour, large, full, of globular shape, fawn, shaded with yellow, and sweetly scented. *Spenser* is a good Rose. It has very large flowers, full, broad, and of the *Merveille de Lyon* type. Unfortunately it is scentless, and I think, and others will doubtlessly agree with me, that a scentless Rose is not of great value. I think that fragrance is one of the most precious virtues of the flower. *Spenser* is a good exhibition Rose, large, and pink in the centre, the outer petals shading to white. The *Bourbon* variety, *Mrs. Paul*, is comparatively new, the flowers fragrant and very large, the fine petals white, touched with rose. It is very free, vigorous, and in all respects a thoroughly good garden Rose, whilst it is of interest as possibly the forerunner of a new type of *Bourbon* Rose. There are many other new varieties as *Clio*, *Zenobia*, a new *Moss* kind, and others which will be noted when I know more about them. —C. T.

3897.—Roses for a wall.—As you have a *Gloire de Dijon*, I would advise either *Cheshunt Hybrid* or *Reine Marie Henriettes* as a contrast; both of these are red, and equally as free as the old *Gloire*. In your warm locality, too, *Maréchal Niel* (yellow) should do well in each an aspect—in fact, any climber should thrive with you. Six more of the best are: *William Richardson* (orange and yellow), *Climbing Niphetos* (white), *Climbing Perle des Jardins*

(deep-yellow), *Mme. Chanvry* (salmon and buff, with deep-orange), *Bouquet d'Or* (a deep-coloured *Oleire* de Dijon), and *L'Idéal* (orange, salmon, and metallic-red). On your greenhouse wall plant either of the above possessing the colour you most desire. The following are twelve good pot Roses for your purpose; all are very choice: *Comtesse de Nadailac* (coppery-yellow and peach), *Oleopatra* (rosy-flesh and cream), *Edith Gifford* (white, flash centre), *La Boule d'Or* (golden-yellow), *The Bride* (white, grand), *Mme. de Watteville* (cream, rosy edgings), *Souvenir d'Elise Yarden* (cream), *Luciole* (rose, coppery-yellow), *Sunset* (apricot and yellow), *Ernest Metz* (deep carmine-rose), *Angustine Grinoisean* (bluish-white), and *Franceses Krüger* (salmon and apricot). —P. U.

— *William Allan Richardson* (apricot colour), *Lamarque* (white), *L'Idéal* (light-yellow), and *Waltham Chamber No. 1* (red), are four good and distinct climbing Roses for your purpose. For training against the wall in the greenhouse *Maréchal Niel* will do admirably, if the light is not excluded from it. Six good Teas for pots may include *Comtesse de Felkestone*, *Catherine Mermet*, *The Bride*, *Etoile de Lyon*, *Luciole*, and *Mme. Falcott*. —J. C. C.

3894.—A leaky pond.—It is not many weeks since I gave some brief instructions in GARDENING how to puddle a pond in reply to a question, in which I distinctly stated that unless the work was thoroughly well done it would not be satisfactory. Year after year proves that I was right; you erred in not working the clay properly. My instructions were to get lumps of clay and knead them on a firm platform as a baker does his dough, so that each lump will readily unite with that previously laid down. Seven inches of clay is none too thick, but it will be enough if you thoroughly prepare it, and take greater pains in working it together in its bed; a wooden mallet is a capital tool to use when preparing each lump. This and a thick flagstone, with sufficient water to well moisten the clay, will enable you to prepare the clay in a proper manner. As the work proceeds keep the surface damp, and if the weather is very hot and dry a little shade from old sacks or a mat is desirable until the water can be let in. —J. C. C.

— Of course, the puddling was not properly done. An account was recently published in GARDENING of the proper manner in which to puddle a pond; but the quickest plan to make sure of your work is to coat it with 2 inches or 3 inches of Portland cement, and puddle over that if you like. —A. G. BUTLER.

3886.—Substitute for rotten manure.—There could not be a better substitute for rotten manure than fresh horse-droppings; as it seems to be required for making manure-water, the fresh material is better than the decayed for that purpose. Indeed, for all purposes fresh manure is the best. Rotten manure that has been produced by being over-heated in a big heap is of but little value, as the best of its fertilizing properties have been destroyed by over-fermentation. The best manure for heavy soil is fresh stable-manure, with the greater portion of the straw shaken out of it. —J. D. E.

— For pot plants generally, and *Palms*, etc., in particular, decayed manure is by no means a necessary ingredient of the soil. Some good leaf-mould or half rotten spent Hops will answer the purpose quite as well, or better, and extra nutriment can be supplied as necessary, when the pots are full of roots, by means of liquid stimulants of various kinds. Some growers of *Fuchsias* and other quick-growing plants use nearly fresh horse-droppings, after drying them thoroughly in the sun, as part of the compost, and even when employed in liquid form it is better to dry the droppings partly at least before steeping them. —B. C. R.

— Fresh horse-droppings may be used to make liquid-manure. The best way to do this is to tie it up in an old bag and sink the bag of manure in a tub of water. Dilute the liquid considerably. For most things it will be strong enough if a quart or so from the liquid-manure tub is placed in a three-gallon can, and the can filled up with plain water. —E. H.

— Your statement is a singular one. Surely you can find a liquid yard or so in which to stack up your horse-droppings until rotten. Meanwhile, you must perform use fresh manure, which though not so good, certainly better than some at all. —A. G. BUTLER.

TREES AND SHRUBS.

CLIMBERS ON TREES.

SOME people say climbers on trees are injurious and should never be allowed. In the case of young trees this remark holds good, but in those trees that have seen their best days climbers are admissible. At Syon House, Brentford, I have often noticed that many of the old trees are so treated, and they are lovely objects in the spring and summer months when covered with *Almeé Vibert* Roses and other old, yet valued, climbers. In the autumn the contrast of colour of the foliage of Ivy and Virginian Creeper is beautiful. *Aristolochia Siphocampylus* makes a charming plant for climbing over trees when a heavy covering is wanted, while the *Jasmine* is suitable for dwarf trees. One of the most effective is the old *Clematis vitalba*. At Syon in some cases it reaches a height of 40 feet or 50 feet, and during the autumn months the effect is charming. *Clematis montana* is also useful in sheltered places, and when others of a different colour are mixed with it they produce

material when planting, as often the soil around old trees is much impoverished and will not support the creepers. As little training should be done as possible, only small iron racks, not wall nails, or a little dark coloured copper wire placed round the trees to support the growths being used. The illustration we here give shows an old Elder tree, ever and among the branches of which have been allowed to ramble Ivy and Climbing Roses.

Two good Mock Oranges.—Two very charming shrubs for small gardens are *Philadelphus microphyllus* and *P. Lemoinei*, Philadelphia being the botanical name for the Mock Oranges. The former makes quite a bush, and is far less unruly than the more rampant kinds, which require much larger space to develop properly. It does not grow 3 feet in height, and the leaves are small, not unlike those of a Myrtle in character, whilst the flowers are also small, pure white, and borne with great freedom on the slender shoots, and they are very sweetly scented. This species is of comparatively recent introduction, having been brought

phylus if only one kind is required, and it is well worth planting. I make a note of these fine kinds as they are in flower, and it is when the thing are in bloom that they should be noted for future planting. One knows then what to expect.—V. C.

Chinese Snowball tree.—This is a Guelder Rose, not the graceful tree or shrub, whichever one is pleased to call it, so much planted in gardens, but a Chinese species which is of a very different character. It is a thoroughly good garden shrub, and is not so well known as it deserves to be, the growth spreading out and dwarf. It blooms with remarkable freedom, and the flowers are like those of the Guelder Rose, and stand the branches so that in early June the deep green wrinkled leaves are almost hidden. This shrub likes a rather warm, moderately light soil, and is quite hardy—very suitable for gardens of moderate size. Its freedom of flowering is remarkable. One sees so many common things recommended that note should be made of good shrubs that will give pleasure in early summer with their rich profusion of flower. I have seen *V. pilicatum*



OUR READERS' ILLUSTRATIONS: A picturesque garden. Old Elder-tree covered with Ivy and Climbing Roses. Engraved for GARDENING ILLUSTRATED from a photograph sent by Mr. John Brier, Junior, Oak Bank, Bollington, near Macclesfield.

a pretty effect. Many of the hardier Clematises, such as *viticella*, *Flammula*, and others may be used for the work. Honeysuckles will also be found suitable, but they require a heavy soil to grow in. Some of the varieties of *Ceanothus* are valuable, and for dwarf trees or poles they are charming. *Vitis hederacea* and *V. heterophylla variegata* are good for the purpose, while *Pasiflora cerulea* and the *Hop* have a pretty effect in the autumn months. The most effective plants are Roses, of which there are many that can be used. The *Boursault* Roses and many of the *Noisetto* section are the best. The *Copper Austrian Brier* and *Persian Yellow* do well on trees that have not too much head or top covering. Many of the *Hybrid Perpetuals* do well and cover a large space quickly. The plants require moisture in dry seasons, and if this cannot be attended to, climbers should not be planted on trees, as unless they grow freely and do well they fall in the object they are planted for, and a bare stump is preferable to a miserable creeper. In dry seasons frequent supplies of liquid manure will be found beneficial. It is also important to give the roots some new

from New Mexico in the year 1883, and therefore it is not so well known as many things that have been introduced for a longer period. It is not, of course, a shrub for a crowded shrubbery, and if it is given a place by itself away from other things, the display of flowers in summer will be most pleasing. Few shrubs are prettier, and the growth not being too vigorous, this Mock Orange may be especially recommended for moderate-sized gardens. Ordinary soil will suffice, and it is a mistake to make it too rich, as this results in plenty of growth but few flowers. The only pruning necessary is to remove very weak shoots, not to hack about with a knife recklessly, as is the fashion in some gardens. The other Mock Orange that may be recommended is named *Lemoinei*, and this is a hybrid raised by a celebrated French nurseryman named Lemoine, between *P. microphyllus*, which has just been described, and *P. coronarius*. Like most hybrids, it preserves the general features of both parents. The flowers are very sweetly scented, but not so strong in odour characteristic of many of the Mock Oranges, and the flowers are small and of the palest white. I should choose *P. micro-*

in a few gardens, and it is getting better known, but it should become still more common.—T.

The Rose Acacia.—It is difficult to know why certain trees, beautiful in every way, and not troublesome to grow well, are neglected when many common things are present everywhere. There are few more beautiful trees than the *Rose Acacia*, botanically known as *Rohinia hispida*, and it is exactly the kind of tree for a small garden, as it is dwarf in growth, has graceful, *Acacia*-like leafage, and blooms profusely in early summer. I was noticing in late May several trees in a small villa garden a few miles from London, completely smothered with the rose-colored flowers, but it is not often one finds the tree in such places. It is very hardy, and the only thing to guard against is the wind, which, when the tree is much exposed, breaks the brittle branches. For every garden, even where the soil is only partly good, the *Rose Acacia* is adapted, and it should be noted as one of the things to plant next autumn.—C. T.

Ivy and Grass.—The fault of out-lying Ivy is that it takes longer to become green again, having to make a second growth,

ORIGINAL FROM THE LIBRARY OF THE UNIVERSITY OF URBANA-CHAMPAIGN

which is not so vigorous as the first. It is better, however, to cut it now than not at all. Should the weather remain dry, give the roots abundant supplies of water, which will hasten on the growth. Nothing can be done to make the Grass grow close to the stem of the Oak-tree where the outer branches hang low, excluding the light from its base. Why not lay a few fresh turves every year?—those would keep green for one year. Or plant the space with Ivy; this makes a neat and green carpet, and is always pleasing to look at under trees.—S. P.

—As you have every appliance ready you may clip the Ivy now, but March is the best month, and it will not be very slightly now; still, in your case you may proceed with the work, and the shears will soon effect the desired reformation. Grass will not grow round the base of an Oak-tree—at least, very little, and Grass is never satisfactory further away from the trunk. Why not try a small-leaved Ivy, pegging down the shoots on the soil, and through the summer months helping the Ivy to become established by occasional supplies of water? It will get established in time, and make a nice green surface. Very few things will live under the dense shade of trees, but Ivy is as good as anything that may be recommended for the purpose.—C. T.

3892.—**Creeper for a wall.**—By far the best creeper for your purpose is *Ampelopsis Veitchii*, a fast-growing and miniature form of the Virginian Creeper. It clings most tenaciously to any surface (even glass), and will soon cover any space. Plant now from pots, and afford them a little drainage, so that they have a good start this season. The *Ampelopsis* is not evergreen, but it comes into growth very early, and drops its leaves late. All through the early part of the year it is a beautiful light-green, changing to brown, bronze, rose, and even scarlet towards the autumn. At this time it is one of our most showy subjects. It is hardy, and will thrive in any position.—P. U.

—A good creeper for a wall is Veitch's Virginian Creeper (*Ampelopsis Veitchii*), which will, after it has once got established, quickly make headway and cling closely to the wall without the need of shreds or nails. You could also have a good quickly-growing Ivy, such as Emerald Gem, or *Clematis montana*; but that will need support, unless it can cling to some gable or ledge. I should choose the Virginian Creeper, which is a quick grower, and plants may be put in even now from pots. You get a fine surface of green in summer, and with the approach of autumn the leaves change to fine colours.—C. T.

—Only Ivy and *Ampelopsis Veitchii* will cling to a wall without support. Both are fast-growing subjects, the latter, however, is deciduous, which would be useless during the winter. If this is important I should advise that Irish Ivy be employed. Procure strong plants and treat them well in the matter of good soil and abundance of water at the roots during dry weather. Growth under such conditions will be made then at the rate of 4 feet yearly.—S. P.

—If you want a plant to cover the wall in the summer only you cannot do better than put in *Ampelopsis*; but if you wish your wall to look green also in the winter get a plant of the small Wood Ivy; the latter, if liberally treated when put in, will soon settle into rapid growth.—A. G. BURTON.

—Plant *Ampelopsis Veitchii*. If strong plants are obtained in pots and set out at once some progress will be made during the summer.—K. H.

3897.—**Oleanders, &c.**—I would advise "Steinten" to wait at least another month before placing those and *Oenistias* out-of-doors. For some seasons past we have had cold weather and actual frosts after this date. Do not turn them out of pots, but prepare a place, throw down a little soil to prevent worms from entering the pots, and then plunge them in ashes or any other handy material. Plants in pots, having the whole of their roots confined, must be carefully looked after as regards water when plunged out-of-doors.—P. U.

—Oleanders are better kept under glass altogether until they have flowered, and even after that if they are at all weakly. These plants like more heat than some people seem to think necessary. They also like a shady part of the greenhouse in hot weather. Still be early yet to put *Azaleas* out-of-doors. They should

be kept under glass until they have formed their flower-buds, which those that have flowered late cannot do for another two months longer. *Genietes* and *Myrtles* may be placed in the open air at once, if they are given a warm position. Such plants as you mention should not be taken out of their pots, and only one-third of the depth of the pots should be buried in a bed of coal-ashes.—J. C. C.

—Oleanders, *Genietes*, and *Myrtles* may soon with safety be put out-of-doors; but in the case of *Azaleas* it is yet a little early for them. The flower-buds ought to be formed before they go out. This is easily ascertained by feeling the extreme point of each shoot. If the bud is formed a hard substance will be found at the base of the uppermost leaves. All these subjects should not be removed from their pots, but be plunged in ashes. The object of burying the pots is to lessen the labour in watering the plants. The soil does not dry in them nearly so fast when they are plunged as it does when they are standing on the surface. Coal-ashes is the best possible material for plunging the pots in. It is porous, and does not harbour the presence of slugs or worms, which soil does. There is such a risk of worms entering the pots when plunged in soil that this plan should be avoided. Do not crowd the plants; allow each sufficient space to stand clear of its neighbour, so that air may freely pass amongst them, the object being to thoroughly mature the growth.—S. P.

—*Myrtles*, *Oenistias*, and Oleanders may be plunged out now. *Azaleas* had better remain under glass a little longer till the wood is getting a bit firm, though in the case of hard wood plants generally the sunshine has hastened the ripening considerably, and the plants go out sooner than would be desirable in an ordinary season.—E. H.

—Yes, any of those mentioned may now be safely exposed—that is, supposing them to have been growing in a cool and airy atmosphere previously. But it is only fair to add that unless sufficient growth has already been made this will not take place as rapidly and well in the open air—at least, if the weather is at all dry and warm—as would be the case if the plants were kept for a time under glass. As a rule, such things ought not to be turned outside until sufficient growth has been made indoors. As regards plunging the pots, it is, on the whole, decidedly advisable, particularly where the plants do not receive frequent and regular attention in watering. It saves a lot of watering, and prevents any risk of the roots becoming burnt by the pots getting unduly hot under a strong sun. Plunge them either in ashes, or if in the soil, make the holes tapering, like the pot, and a few inches deeper, leaving a hollow beneath, which will at once prevent worms entering through the drainage-hole, as well as the roots working through, and insure free drainage.—B. C. R.

—The *Azaleas*, *Genietes*, and *Myrtles* may go out in the month of June, but Oleanders are likely to get neglected; and if you require a good bloom it would be better to have them under the eye in the house. The other things benefit by being in the open during the summer months, and require chiefly close attention in regard to watering, as in the open in the summer the soil quickly gets dry. Do not take any notice of showers; they only make the surface of the soil damp, and do not really soak the soil. As to position, nothing is better than against a shady wall; they should not be exposed to the full force of the sun, and the *Camellias* will benefit by a few supplies of scot-water. Stand the plants upon a firm bottom of coal-ashes, as these prevent worms from getting into the pots and choking up the drainage. If this becomes out of order the plants will soon get unhealthy. It is not necessary to hurry the pots, nor must the plants be removed from them; simply stand them out as advised. Early in the autumn, before frosts occur, remove them inside. Give the pots a thorough cleaning, and see to those that have worms in them.—C. T.

3750.—**Horshound beer.**—A handful of dried Sage and Burnet, handful of dried Horshound, handful of dried Pennyroyal, handful of dried Marsh Mallows, handful of dried Agropyrum, two or three Dandelion-roots, two or three Nettle-roots, handful of Hops, 1 lb. of lump sugar, 2 oz. cream of tartar, and two

tablespoonfuls of Mason's Extract of Herbs. Mix all well together, then boil the Herbs in enough water to make 4½ gallons for about an hour, strain off, and when cool enough put a teaspoonful of herm in. Let it work all night. Put it in cask next morning, and when it has done working bang it down and draw off in two or three days. It is better to put a little isinglass in to fine it; and a little burnt sugar to colour it.—C. G. H.

HOUSE & WINDOW GARDENING.

BELL-FLOWERS AS WINDOW PLANTS.

THERE is much sameness in window plants, but there need not be if those who like their windows gay with flowers would grow such things as the Bell-flowers or Campanulas, which are of great beauty thus placed. They do not mind the dry atmosphere of rooms, and even in stuffy cottage windows will bloom freely. I have seen *C. carpatica*, the Carpathian Bell-flower, in splendid bloom in windows, the large pale-blue coloured flowers hiding almost every trace of leafage. There are many varieties of it, *palida*, *alba*, and so forth, but the best are the parent and the pure-white form. It is necessary to keep the plants well watered, but ordinary soil suffices. In windows they get very dry, and a gentle dousing with a syringe or placing them out in soft showers of rain is helpful to them. Perhaps the most useful kind for this purpose is *C. fragilis*. It is not thus named on account of its growth, as it is vigorous, but the flowers are delicate blue in colour, the shoots being covered with them, and they hang down gracefully. It blooms with the greatest freedom, the hanging flower-laden shoots being very pleasing in a window. Then one may choose also *C. garganica*, which is not as well known as *C. fragilis*, but may be grown well in a window. It is called *C. fragilis* sometimes, but the white plant is bolder. One scarcely wants both kinds, and preference should be given to *C. fragilis*, as this succeeds remarkably well in a hanging basket in the greenhouse or the window. Very suitable for pots is *C. muralis*, called in some catalogues *C. Portenschlagiana*. It is very dwarf, quite a gem amongst Campanulas, the light-green leaves hidden by the delicate blue flowers, and grows very freely. *C. garganica* blooms in June, and *C. muralis* later, thus maintaining a succession of flowers. The Ligurian Bell-flower (*C. isophylla*) and its variety *alba* are well worthy of note for pots, and may be readily grown in a window. The type has pale-blue flowers, but there is a pure-white form, which is very charming, free, and vigorous. I am surprised it is not more common in gardens; the shoots trailing, and the flowers are comparatively large and of the purest white. When in full beauty few things are more pleasing. This small selection gives considerable variety, and of a class of plants not too common in gardens.—T.

3901.—**An enemy to the Auricula.**—I have never seen this pest upon Auriculas, and hope it will not come near my collection; but by the description of it, there is not much chance of getting rid of it, except by picking the larvae off the plants, and as it rolls up the leaves there will be no difficulty in finding it. I have on several occasions had to deal with a small green caterpillar, and the same species has attacked other collections, and there is nothing for it but hand-picking.—J. D. E.

3898.—**Seeding Pelargoniums.**—The plants ought to have bloomed before this. As a rule, after growing to a certain height the flower-bud is produced with unfailing certainty. I make a sowing almost every year in February or the early part of March, and most of the plants flower by Christmas at the latest, the rest in the following spring. A batch of plants (*Zonais*) from seed sown last July are now in many cases showing the bud. All that is necessary is to keep the seedlings growing quietly on, with plenty of air and sun, avoiding much manure and extreme starvation also. The plants must not be stopped; keep them to one stem.—B. C. R.

—These are the Pelargoniums out to a shady spot where they will flower.—E. H.
—These are the best bloomers. Try cuttings from them, and I think they will do better.—A. G. BURTON.

FRUIT.

FLAVOUR IN PEACHES.

The question of flavour in Peaches and Nectarines is a very important one, and of all fruits grown under glass—Melons which are poorly grown excepted—there is no other kind which is so unpalatable as an insipid Peach. The want of flavour in market Peaches is often very pronounced, but this is principally on account of the baneful practice of gathering the fruits before they are ripe. This is carried to such an extent that they are often quite hard at the time of gathering, and this being so, how can the fruits be expected to be of good flavour? It does not matter how well the fruits may have been grown, if they are gathered before they are well advanced to the final ripening stage, that full, luscious, and vinous flavour so characteristic of a well-grown Peach will be sadly deficient. There certainly appears to be a mistaken notion that for market the fruits must be quite firm when gathered, so as to ensure their safe arrival when carried a distance by rail or road. Some people say if colour is present it matters little about flavour, but I invariably find that where the fruits are well advanced towards the ripening stage they command a higher price and the colour is also more pleasing. It is astonishing the colour Peaches take on during the last twenty-four hours previous to their final gathering, and this alone is well worth waiting for. There is also the additional danger of leaving the fruits too long on the trees before gathering, for when they are allowed to hang too long the flesh is woolly in texture and lacking in juice. The practice of allowing the fruits to drop into nets cannot be too strongly condemned, for when they are so far advanced as to fall the full flavour so desirable will have vanished. The injury alone that the fruits receive is also much against their keeping, for it will be noticed that these net-caught fruits keep but a very short time. I have known such fruits as these to be even sent a long railway journey to London only to arrive at their destination a mass of decay, brought on through their bruised and over-ripe condition.

MISTAKES of this kind generally result in going to the other extreme of gathering too early. I never consider a Peach or Nectarine, especially the latter, fit for gathering until it will part from the tree after being firmly grasped by the hand and given a slight backward pull. A pad of cotton-wool laid in the hand is sometimes used, and if the hand be hard and horny this aid may certainly be of use to prevent injury, but otherwise it is in the way. A practised eye can tell almost at a glance if a Peach is fit for gathering on account of the change of colour near the base of the fruit. Some people also recommend the use of a pair of sharp Grape-sissors for detaching the fruit, but these can only be used occasionally, for if extreme care is not taken far more injury will accrue to the fruit than without their aid. Indeed, the formation of some of the varieties is against their use, for it would be impossible to reach the foot-stalk without injuring the fruit. In gathering Peaches they should be laid in shallow trays over a base of soft paper shavings, with a layer of silver paper over the whole. The fruits when laid on this should be removed to a dry and cool room or cellar, when twelve hours afterwards they will be in condition for use. They will keep well for three days if the position is cool, and I have even kept them a week, but, as previously mentioned, the flavour is more fully developed from twelve to twenty-four hours after gathering. The early morning is also the best part of the day for gathering, as at that time the fruits are cool. The

warm and dry air, are most important. A damp and close atmosphere must be avoided, also overhead syringing when the fruits change for ripening, but inside moisture must not be wholly stopped, as the floors should be damped in the morning and evening during fine weather. A sudden withdrawal of inside moisture would affect the foliage considerably, especially under the strain of a bright sun. The practice of applying liquid-manure to the ripening fruit may also be easily overdone, as I have known the flavour sadly depreciated by this course alone. The application of liquid should be dispensed with at least a fortnight previous to gathering, or rather ripening, a soaking of clear water at this stage being the best. If the surface is littered down with long stable litter at this time, sufficient moisture will be retained in the border to carry the fruits through to their full stage. If a heavy watering is given a few days prior to gathering, it sometimes causes the fruits to part from the tree before their time. H.

OVERCROPPING FRUIT-TREES.

OVERCROPPING is a very great mistake, as it not only renders the fruit of poor quality, but also weakens the tree. I once called upon a gardener who had several vicueries under his care, and the crop hanging was about the heaviest I ever saw, but the quality of the fruit

certain large growers for market who allow their Vines to carry very heavy crops, but at the same time feed heavily. As a rule, these Vines are growing in soil the most suitable for Vines growing, and also in a condition mechanically for receiving abundant supplies of what are termed artificial manures. Again, the rods are not expected to last long, and in the majority of cases the crop is out as soon as fit; consequently the Vines are relieved of the load at once, and they also have a lengthened time in which to recoup their energies. This is quite unlike the majority of cases in private gardens, where the Vines are supposed to last a long time, comparatively speaking, and it behoves those who are in charge to crop the Vines judiciously, especially in the younger stages, the aim being to build up Vines which will be capable of supplying good regular crops for years to come. Occasionally we hear and read of

SENSATIONAL CROPS being taken from very young Vines, but this is no criterion that the practice can be indulged in generally. Neither is it wise to do so. The width apart the rods are growing makes a deal of difference as to what weight of Grapes each should carry. For instance, a Vine with the rods 4 feet apart is able to bring a greater weight of Grapes to maturity than another with the rods 2 feet apart. Taking varieties of Grapes as a whole, where the bunches range from 2 lb. to 3 lb. weight each, a bunch from every other lateral would be an ample crop. A greater weight of Alicante may be brought to maturity on a single rod than, for instance, in the case of one of Black Hamburgh. This latter, although a fair number of ordinary bunches may be produced, will not stand overcropping, that is if the highest finish is desired. As is well known, Muscat of Alexandria and Mrs. Pince's Black Muscat are very impatient of heavy cropping. I never allow a rod of the latter to carry above five or six bunches, but then these are of a very large size. The Vines would have to be in the best possible health to bring even the above number to full perfection, size of berry and colour being taken into account.

PEACHES and Nectarines are often decidedly overcropped. Small fruits either of Peaches or Nectarines are never looked upon with favour. Depth of flesh is lacking, and also lusciousness. As a rule, the larger kinds of Peaches should be thinned down to one to the square foot of surface, 9 inches for smaller kinds. Nectarines may range about 9 inches, and the trees being healthy the fruits will be brought to full perfection either for home use, exhibition, or market. For market it does not pay to produce small fruit even if there is quantity. Figs pay for thinning, especially where they appear too thickly or in clusters, or where there may be danger of the trees casting their fruit, especially the earliest crop. Melons, again, should not be too small. Fruits which will range from about 3 lb. each are of good useful size. I allow our plants to produce from two to four or five fruits each. Plums under glass I also thin. A.



A basket of Peaches.

was poor in the extreme. There were so many Grapes that the gardener did not know what to do with them, and as marketing the surplus was not looked for, there was a considerable quantity on hand. Now if these Vines had only been allowed to carry about a third the number of bunches, the quality would have been higher and more satisfaction would have been given. Very often what appears an ordinary crop grows into a much larger one than the grower anticipated. A grower should be able at thinning time to gauge the weight of the crop the Vines will carry, and at this time out off all superfluous bunches with the exception of one or two extra to a rod, these to be cut off as soon as the bunches have stretched well down and it is seen what the crop is likely to be. It is perfectly useless to overburden the Vines with superfluous bunches, and then at about the colouring stage to come to the conclusion that too many have been left on and commence to cut them off. Certainly lessening the crop at this stage makes the best of the evil, but the principal mischief will have been already done. What should constitute

A FAIR CROP will have to be gauged by the health and general condition of the Vines, length of rod, and so forth. The size of the bunches will also gauge the crop to a certain extent, and also the amount of feeding that they have given. As an argument for heavy cropping, it has been advanced that there are

3893.—Vines bleeding.—“J. S. L.” does not state whether the Vines that bleed are, or are not, under artificial heat; but be this as it may, I should attribute the bleeding to the last pruning being too late with reference to the rising of the sap. The bleeding this year will cease when the leaves are further developed, and next season it may be prevented by pruning at the fall of the leaf, thus giving an interval of some months before the succeeding spring, and time for the pruning-wounds to harden before the rise of the sap.—J. M., *Southants*.

3893.—Mildew on Vines.—I suspect the cause of the Vines being infested with mildew at this early stage is owing to the admission of front air to the house too freely during the time when cold winds have been blowing, or it may be caused by opening the front ventilators too early in the morning, or leaving them open too late in the afternoon. There is nothing so likely to produce mildew on Vines as draughts of cold air. If my surmise is a correct one, I should advise “Bankais” to be more careful in the future, and cease the opening of the front ventilators altogether until the Vines have passed their flowering stage, and the berries have been formed. Keep the atmosphere drier by warming the hot-water pipes, if the house is fitted

TIME of gathering is obviously only one way of securing fruits of well-developed flavour, and other cultural details, such as a circulation of

with any; at the same time admit air through the top ventilators to keep the inside atmosphere in a buoyant state. A temperature by day of 75 degs. with air on is a safe one; if it runs up to 80 degs. during the hottest part of the day no harm will be done, giving a little air at 70 degs., allowing the thermometer to rise with air on. Until the berries are thinned it would not be safe to dust them with sulphur, nor cover the hot-water pipes with it, but the main rods might be painted with it at once, mixing it with water until of the consistency of paint. Sulphur may be scattered about the floor of theinery, and on the border also. When the berries are as large as Peas the whole bunch might be dusted over with sulphur if the attack of mildew is a violent one. The sulphur can afterwards be washed off with water applied through a syringe, if it cannot be blown off.—S. P.

Sulphur is the best specific for mildew; but this parasite ought not to be on the leaves of the Vines before they come into flower, if the border is in good condition, and the Vines, when in a dormant state, were dressed with the usual mixture of soft-soap, sulphur, and Tobacco-liquor. This destroys all the germs of mildew. The sulphur may be dusted on the leaves and stems as soon as the blossoms are set, and it may also be necessary to dust the Grapes, for the mildew attacks the berries as readily as it does the flowers. When mildew makes its attack later it can be destroyed by painting the heated pipes with sulphur when the house is shut up; but this would rust the skin of the berries if done before stoning commenced. Dusting with flowers of sulphur does not cause rust.—J. D. E.

I suppose the mildew is on the foliage, and if not destroyed now it will attack the berries later on. The Vines may be dusted over with sulphur at once, or the sulphur may be mixed with water and syringed over the Vines two or three days in succession. If there is a heating apparatus, light the fire and make the pipes moderately warm, and mix sulphur and skim milk into a thick paint and brush it over the pipes. This and a little more attention to the ventilation, or avoiding cold draughts, will check the mildew; at any rate, this sulphur treatment must be persisted in till the mildew is destroyed. The black sulphur is the best.—E. H.

3383—Treatment of young Vines.—Remove all side shoots, thereby throwing the whole strength into the main stem, which should be encouraged to grow 8 feet long, when the point may be pinched out to induce the lower buds to plump up. Any side shoots afterwards should be pinched in at the first leaf. Presuming the plants are now in 8-inch pots, shift them at once if full of roots into those 10 inches in diameter, using a compost of three parts fibry loam to one part of horse-manure, with the addition of a handful or two of finely ground bones to each pot. Stand the plants in a light position in a temperature not less than 60 degs. by night and 75 degs. by day. Syringe the foliage twice daily with tepid water, and supply the roots freely with moisture as required. When the colour of the bark changes to yellow nearly the whole length, and the growth ceases, give the plants more air to ripen the canes, finally standing the pots out-of-doors at the foot of a south wall, where they may remain during the winter if the pots are covered with litter to prevent the soil and roots being frozen.—S. P.

All the side-shoots should be pinched back to one joint from the main stem, and as soon as another growth pushes out from that, pinch again at the first leaf. The main leading growth will push away more rapidly when the side-shoots are stopped, and the lower growths will soon cease to make any progress. Vines from eyes put in so early as January should grow into fruiting-canoe the same season.—J. D. E.

Stop the side shoots or laterals to one leaf and shift into larger pots as more room is required, using turfy loam and old manure.—E. H.

A note on Strawberries.—British Queen Strawberry is by far the best for flavour of any variety, and now that so many new Strawberries are being raised it is important to bear in mind the quality of the fruit. A big tasteless, wettery Strawberry is not what we want, but good, free-bearing, strong kinds of

the British Queen type, which have fine flavour to recommend them. It seems that there is a prospect of getting some good Strawberries for flavour, as Mr. Allan, head-gardener to Lord Suffield, has raised several kinds that are of the British Queen class. The plants are strong growing, and with handsome fruit of good colour. Empress of India has quite the flavour of British Queen, the fruit of moderate size, of good appearance, and bright-scarlet, the flavour rich and with a pleasant acidity, characteristic of the parent. Lord Suffield is a kind of very good flavour, the flesh deep-red in colour, juicy, and firm. Gunton Park is another promising new Strawberry, the fruits being larger than those of the other kinds, and of bright-scarlet colour, and rich flavour. This is free also, and a thoroughly good garden kind.—V. C.

THE PINK.

This homely flower is in most cottage gardens. An edging of White Pinks is very beautiful, and the simplest outline suffices to gain this interesting and quaint picture. The many charming Pinks of garden have sprung from *Dianthus plumarius*, that, like the Clove Pink, loves to send its roots into old walls. The writer remembers it on Conway Castle, but that is several years ago, and unthinking tourists may have deluged its little tofts in their eagerness to acquire "mementoes." The Pink of garden is hardier than the Carnation, and is subject to fewer diseases. It may be planted in clumps on the borders as an edging to walks, or in any spot to which it is likely to constitute appropriate effect. The soil should be well prepared, whilst in spring they may be top-dressed with well-decayed manure or good loam. For years the "florists' Pink has been frowned upon, and by this Pink I mean those fine-faced kinds that delighted the florists of old. A new love has sprung up for this long-neglected class, and as with the Lavender, a special society has been formed to promote its culture, spreading abroad knowledge of the varieties at command, and encouraging lovers of Pinks to add to their number. There are two classes of florists' Pinks, the purple-faced and the red-faced, and a typical flower should have petals of shell-like shape, smooth, the ground colour white, with bright, decided, and regular tinging. A few of the finest varieties, and the list is necessarily limited, comprise Asot, Lord Lyon, Derby Day, Borard, Jeannette, Modesty, Ethel, Henry Hooper, Empress of India, K. L. Hooper, The Rector, John Bell, and George White, the three first named in particular being very fine border flowers, sweet scented, and useful for cutting. If one is an ardent Pink fancier he will have some of these beautiful faced varieties. They should be grown on a raised bed so as to throw off heavy rains and dispel damp, planted late in September and in the spring top-dressed; it is not necessary to grow them in pots. When the buds appear thin them out judiciously, and scarcely tie the stem to short sticks. The Pink may be propagated by layers or cuttings, sometimes called "pipings," the term, in fact, usually used, but it simply means cuttings. The best time to take them is when the plants are going out of bloom. Use 4-inch pots, crack them well, and fill them with light sandy compost, reserving about half of an inch of space from the margin for sharp silver-sand. Select for cuttings the sturdiest shoots, cut them sharp under a joint, remove the leaves from the space to be inserted in the soil, and about a dozen may be put in each pot. If a little gentle heat can be given to ensure quick rooting so much the better, but they will strike even in a cold frame, taking care to keep the soil moderately moist, and shade them from hot sun. In the course of three weeks or a month they will have rooted, and when of sufficient strength may be planted out in the garden. Even the cold frame may be dispensed with, so that those who have not this luxury may yet grow good Pinks. The cuttings will strike well if a bed of light soil is made up in a sheltered, moderately shady corner in the garden, the cuttings dibbled in and covered with a hand-glass. Keep the glass wiped, so as to dispel damp. The sweet-scented Pink Mrs. Sinkins is very charming, but the celyx splits very much. Those who do not grow Pinks should not think of the faced varieties before the beautiful fragrant old White Pink, which is a precious garden flower.

THE CAUCASIAN SCABIOUS.

THIS plant is an almost incessant bloomer, its value in the mixed border or on the rockery will be at once apparent. In most gardens we invariably find it under the name of *S. caucasica* var. *amena*, which I believe to be altogether erroneous. *S. amena* is a true species, native, I believe, of Asia Minor, totally distinct, and, judging from dried specimens, in no way deserving of such notice as the subject of our note. In Regel's "Gartenflora," t. 1. 1084 and 1212, we find figures of two varieties or forms of *S. caucasica* called *heterophylla* and *olegus*, and it is to the latter name that the plants grown in English gardens belong. Our plant will be found to differ from typical *S. caucasica* by being more robust and having considerably larger flower-heads. The leaves, too, are not so much divided and the plant is altogether less straggling. Both the type and its varieties have great affinity to the better-known *S. graminifolia*, which is a really pretty plant, and one that could ill be dispensed with for rockwork or flower border. *S. caucasica* and its varieties will be found to differ from the latter by their more erect stems, much larger flowers, broader and less silvery leaves, and in the length of the inner calyx, which in *S. graminifolia* is hardly longer than the outer. *S. caucasica elegans* has the largest flower-heads of any species known to me, and is said to have been first raised by the Leddigs from seed received from Mount Caucasus. It may indeed be placed in the front rank of showy and useful hardy perennials, and will be found invaluable for summer and autumn decoration. It will hardly be necessary to say that the Caucasian Scabious should be in every garden. The flowers are well adapted for cutting. They last a long time in water, and the clumps are rarely without flowers from early summer until late autumn; their peculiar soft lilac-blue tint and the ease with which the plant may be grown are all points in favour of its general utility. In a light sandy, not overrich soil this plant is all I have described it. I was, however, not a little surprised to read in the pages of the *Garden* of its almost total failure in localities with heavy damp soils, even in places specially prepared for it to grow in. There seems no way of getting over this difficulty unless by raising a variety with a constitution sufficiently hardy to withstand the damp soil of a heavy clayey soil. Its propagation either by cuttings, division, or seeds is comparatively easy; the two first in spring, the latter in autumn and spring. I suggest spring not because divisions may not be equally successful in autumn, but because of the greater risk of being caught, as we were, in a long spell of hard frost, which completely destroyed them. As a plant for grouping in the wild parts of the garden, *S. caucasica*, on account of its graceful habit, will be found especially suitable; it is easily raised from seed, and may be had in flower, and forms strong tufts the second year. Most of the other perennial Scabious are retained only in botanical collections, but the annuals, such as the well-known *S. atropurpurea* and its numerous varieties, *S. maritima*, *S. palestina*, *S. stellata*, well deserve special attention; of the two latter, although having showy flowers, the seed-heads in autumn are by far the most attractive, stellate in form, and very remarkable on account of their transparency. From a batch of seedlings many well-marked and distinct forms may be obtained. K.

EDGING PLANTS.

THERE is a wealth of beauty in an edging of a good hardy plant, such as the common Thrift or the London Pride, and by their use the removal of ugly brick-ends, tiles, and other hard, formal obstructions is ensured. The object of a garden is to fill every nook and corner with flowers, and this may be accomplished if forethought is exercised. Instead of hideous tiles or patent edgings, grow flowers, and there is a fairly long list to choose from, comprising Saxifrage, Thrift, Daisies, London Pride, Arabis alba, the rich Blue Gentianella, Cerastium, Stonecrops, Primroses, and Violets. Where good stone can be got, and in many country gardens this is the case, it will make a delightful edging over which Stonecrops and Saxifrage can creep, making a soft velvety-green

carpet, spangled with flowers in the proper reason. Where the rather fastidious *Gentianella* can be coaxed into respectable growth it must have a soft sandstone to grow upon—at least, it succeeds much better under these conditions. Moist, loamy soil suits it well, and when once established will quickly spread, bearing a profusion of its large, tubular, intense blue flowers. Double Daisies are delightful things to establish by a garden path. They form a perfect mat of growth and grow in ordinary soil. It is necessary to take them up occasionally, according to the progress made, and divide the clumps. Few plants are more easily propagated than the Daisy, and the clumps may be lifted in either spring or autumn, putting each little plant into good garden soil. When for edgings they should be fairly close together, so as to quickly form a dense mat. Quite as charming for an edging is the Common Thrift, making an even mat of bright-green, and when the plants are not permitted to go more than three years without division and replanting a gay display of flowers is assured each year. A line of Thrift in bloom is peculiarly beautiful—a perfect carpet of rose colour. There is more than one kind, the best being the deep-rose coloured form, which is more effective than either the white or the Common Thrift. Edgings of hardy plants are sometimes untidy and ragged through neglect. London Pride, unless given reasonable attention, is a poor plant, but when lifted and replanted when the growth has become too dense, the flowers are borne with the greatest freedom, a shimmering mass of pink and white, distinct and pretty. The Mossy Saxifrage is the most suitable, and of both these and the homely Stonecrop one can get several kinds in a comparatively small space. All these edgings present a green and cheerful aspect throughout the year, freshest, perhaps, in winter, when they are a relief to the prevailing bareness, whilst in the summer or the spring, whatever the season of flowering may be, a profusion of bloom adds to the beauty of the plants. C. T.

ORCHIDS.

CYPRIPEDIUM INSICNE.

I AM asked by "Laura Kendall" to say something about this plant and its varieties, and if there is any means of distinguishing the varieties by their foliage? To all of which I must say there is not, for all the forms have foliage alike, plain-green in colour and about a foot in length. There may be some slight difference in the breadth of the leaves of some of the forms as compared with others, but that is nothing, and the safest plan is to tell you that all their foliage is similar, and of a plain-green; but with their flowers it is quite different, because these vary very much, and some of the varieties are very beautiful. Of the old forms, punctatum violaceum, nr, as it is called by our French neighbours, Chantini, is the very best, the breadth of the dorsal sepal, its bold spotting, and the fine pure-white border rendering it very conspicuous. Another nice one is named Maulei, which has the base of the dorsal sepal narrower, the upper portion white, and beautifully spotted with purple; but amongst the newer varieties there are some splendid kinds. These have been mostly introduced by Mr. Sander, of St. Albans, and in the first rank stands the exquisite plant known as C. Sandere, the whole flower being of a soft lemon-yellow, with the dorsal sepal of a pure-white in the upper part. It is one of the most superb flowers in this now numerous members of this genus, but it is still as rare as it is chaste and beautiful, consequently need not be named here. But there are many fine and choice kinds which have bloomed from the same introduction. From amongst other introductions there is the form called Morianum. Eyermani is another beautiful form resembling Sandere very much in general outline. Going into descriptions of the many varieties now to be found of insigne would be of no use, but I will say a little of its cultivation. Now many growers spoil the plant through potting it in such a foolish manner, and through not draining it sufficiently, using for soil good turfy loam two parts, and one of good brown peat, mixed up well, and the plants should be potted below the pot's rim, so that they may

have room enough for a good soaking of water. Now, the treatment is the next thing to be considered. Some grow the plant in a greenhouse, others in the stove; whilst some again succeed well with growing the plant in a cool frame, and all may be practised with success; but if you wish to have these plants in bloom about the month of November or December, they must be grown in stove temperature, but if at a later season a cooler place will suit them well, and, therefore, I advise my readers to select good varieties when in flower, and to grow, say, a dozen or two for succession.

MATT. BRAMBLE.

BRITISH ORCHIS.

I AM in receipt of two kinds of these very beautiful flowers from "Fred. Philipps," asking for their names, and how he shall proceed to grow them? Now you see these beautiful Orchis are given to variations even in a state of nature,



A fine hardy Orchis (*O. foliosa*).

but as they all spring from seed in the first place, this is not to be wondered at. Your 1, 2, 3 are all forms of *O. maculata*, which is popularly known as the Spotted Orchis, the 3 being nearly a white form of the typical form, No. 1, while 2 is a very deep-coloured and beautifully spotted form, reminding one very much of some fine marked variety of the much neglected, but beautiful tropical *Saccolabium*; they, however, do not last so long in full beauty as their tropical relatives, probably through their being more easily fertilised, through insect agency. The other kind is the Purple Orchis (*Orchis masculina*), the leaves spotted with purple-black, and the somewhat lax spikes being furnished with flowers of a reddish-purple of various shades. Now, growing these plants is usually considered a most difficult operation, but I do not think this need be so. I am under the impression that if the tubers are lifted at the proper time, and planted in congenial soil, there is nothing

to render these Orchis difficult or hard to grow. The plants must not be taken up now, for this is more especially the very worst time; but so many never think of these plants, saving when they are to be seen in flower, that they are ruthlessly destroyed through being unearched just at the very time that they should not be disturbed; but they are worth watching and waiting for to secure them at the proper time. They should be marked with a stout stump or stick, so that they may be dug up when they are at rest. Then, having already prepared a border in accordance with their requirements, they should at once be planted in it, having a care that they are planted at about the same depth as they have been taken from. The following kinds may be grown in a mixture of loam and limestone: *O. masculina*, *O. militaris*, *O. aculeata*, *O. morisii*, and *O. pyramidalis*, whilst the annexed thrive best in a mixture of loam, leaf-mould, and peat, made sandy: *O. latifolia*, *O. laxiflora*, and *O. maculata*. There are many others which require to have the soil made specially for them, and of these are the Bee Orchis (*Ophrys sphegodes*), the Fly Orchis (*O. muscifera*), and the Spider Orchis (*O. aranifera*), all of which require a mixture of chalk or limestone in the soil. Now, I think with these instructions all my friends ought to succeed with these plants. I might add that the borders in which these tubers are planted are better if sown down with Grass, and by advocating this system it may be inferred that I do not believe in them being disturbed with the fork at any time. A very fine hardy, though not native, Orchis is here figured. MATT. BRAMBLE.

ONCIDIUM AMPLIATUM MAJUS.

A FLOWER of a very fine form of this Orchid comes to me from a "London Grower," which he says he has cut from a branched spike, and the plant was sent to him from Trinidad. In reply, I may say that he has done the very thing that is wanted for this species—that is, to keep it moderately moist through the autumn and winter, and in a temperature of about 65 degs., and which does not fall at any time below 60 degs. You see I am not so sure that this plant is indigenous to the Island of Trinidad, but it is somewhat plentiful in Central America, and it is quite possible to have been imported from the last named country to the place whence my friend received it, more especially as in Trinidad they have a fine Botanic Garden, which it has been the special aim of its various directors to enrich. If the plant is now found growing in a wild state it may be as an escape from the gardens. Mind, I do not say this is the case, but it appears to me to be a reasonable inference to draw. The variety of this *Oncidium* named above is far superior to the typical plant, and it is a harder and stronger-growing Orchid, making fine, long, and branching spikes, which are laden with an abundance of rich ochraceous-yellow flowers in front, and at the back China-white, which are about an inch and a half across, thick and fleshy in texture, and which last a good time in full beauty. The tubers are much wrinkled, of a pale shade of green, suffused with purple, and bearing a pair of oblong lanceolate leaves, which are of a good substance, and rich shining green. I have seen many fine examples of this species blooming with Mr. Sander at about this period of the year, and I have observed that Mr. Sander keeps this plant exactly as I did some years ago, when I used to grow this plant so successfully, and, as I have stated at the commencement of this article, the plant I have found to succeed best when grown as a pot-plant, using a good int of crocks for drainage, and raising the plant upon a mound well above the pot's rim in order that the young growths may be secure from being inundated with water. Use for this purpose the fibre from good upland peat, mixing with it about an equal part of chopped Sphagnum Moss, so that it may mix better with the peat-fibre. Press the whole down firmly, and so make all solid and sound, and water well. If the plant cannot have a good exposure to the light, it would be well to run a wire round the pot and hang it up to the sun and light; but it must be borne in mind that the run should not be allowed to fall with its full force upon the leaves and tubers, for the plant will be ruined. MATT. BRAMBLE.

INDOOR PLANTS.

3884.—**Double Petunias.**—These are easily grown, and very showy when in really good condition. The object should be to have as much bloom as possible and the plants dwarf, with good foliage. A well-grown Double Petunia, when in full blossom, should not be more than 18 inches high from the top of the pot. Some varieties do not reach that height. If the plants measure that much in diameter also they can be considered good specimens. When the plants are 4 inches high the point ought to be pinched out to induce side-shoots to form. These should be treated exactly in the same way when that length. Continue this practice until within two months of the date they are required to be in bloom. Commence early to train the shoots outwards by the aid of small stakes to induce all to grow strongly by providing a fair share of light and air to each. Pots 9 inches in diameter are large enough for the plants to flower in. From 4-inch pots they should be shifted in those 7 inches, and then into the 9 inch. A compost of three parts fibry loam, one part horse-manure, half a part of peat, and sufficient sharp silver sand to keep the whole porous. Abundance of water is required both at the root and overhead when in free growth. Copious supplies of liquid-manure is an advantage after the pots in which the plants are to flower are full of roots. A cold pit or frame provides the most suitable site for the growth either the first of June, shading the glass lightly during the hottest part of the day. When the flower-buds commence to unfold syringing should cease. The following half-a-dozen are good varieties. For convenience I append the colour of each: Lady of Lorne (blush-pink, large and fine), Mme. Sanzer (light-rose, shaded lilac, fringed and free), Med. Rath Dr. Koch (bright-carmine, lilac and white blotches), Bastien Lepage (deep-magenta, netted darker), Charlotte Boch (dark-purple), Kate Tidy (very fine white variety).—S. P.

—These are rapid growing plants, and small ones now in 4-inch flower-pots ought to grow into exhibition specimens by August. They should be potted on in good soil as soon as they need repotting. It is a grave error to let Petunias get what gardeners call "pot-bound"—that is, the roots matted round and round inside the flower-pot; this gives any plant a serious check, and such specimens would not be likely to win prizes at exhibitions. Any good florist could supply named Petunias, and it is generally best to leave the selection of such things to them. A few really good double ones are: Arlequin, Banquise, Feu Follet, Le Maza, Le Blason, Lutin, La Bourdonnais, Madame Witt, Olyesee, Panama, Pyrrha, and Saint Sasse. The plants are cheap enough, about 6s. to 9s. per dozen.—J. D. E.

—I would advise your potting your plants on into 6 inch pots before they grow any more. Petunias have a downy and very sticky surface to their foliage, and it is impossible to remove any dirt once it becomes attached to them. Great care should, therefore, be used when repotting. Use a compost of half loam, a fourth leaf-mould, and the remainder made up of well-decayed manure and sand. A little coal-soot placed in the bottom of the pot, just above the drainage, helps them very much and adds a healthy colour to their foliage. The foliage should not be allowed to get wet, but an occasional sprinkling overhead early in the morning of a bright day will be found beneficial.—P. U.

3881.—**Cape "Geraniums."**—These are very pretty, and quite unique. I find a mixture of leaf-soil and loam, with a dash of sand, forms a good compost. They are peculiar in being bulbous, having bulbs somewhat similar to the individual bulbs of a Dahlia. They also bear stout thorns, much after Rose-prickles. If your house is in a warm position, and you keep the plants in the warmest part, I do not see why they should not survive an ordinary winter, although your house is unheated.—P. U.

—To give a detailed article on the culture of Cape "Geraniums" would be a very large order. There are so many of them, and they vary so much in character. Some of the Cape Pelargoniums require a warm-house, and the remainder are greenhouse plants; but some will live where exposed to frost. Cuttings will root

and grow freely now; but before frost comes they must be moved where they will be safe from frost.—E. H.

—These, which are seedlings or hybrids from *P. echinatum*, are, like most old-fashioned plants, by no means difficult to grow, and they are comparatively hardy also. Though possessing good constitutions, they do not make such strong growth as many of the Zoules and other large-flowering kinds, so that they should be kept in proportionately small pots, with good drainage and sandy soil. A mixture of good light loam, with a third of leaf-mould, a little peat or Cocoa-nut-fibre, and plenty of sand will grow them well. When the pots are full of roots weak liquid-manure may be given once a week. Ventilate freely, and keep them in a light position in a cool house. Whether or not they will survive the winter in an unheated house depends upon several conditions—e.g., the locality, the aspect and construction of the house, the nature of the soil, and the severity or mildness of the season. As a rule, in fairly warm or sheltered places they will be all right if kept dry and covered up well in frosty weather. They may be propagated by means of either shoot-outtings or cuttings of the thick roots inserted in very sandy soil in the spring.—B. C. R.

—The outtings will strike very easily in pots of light soil, well drained, and placed near the glass. You must pot them off separately when rooted, and use a light soil, and water them very carefully; also look out for greenfly, which may be quickly got rid of by gentle fumigation. During the winter a greenhouse will suffice. The Cape "Geraniums" (they are really Pelargoniums) do not require much warmth, but a cool, not too moist temperature. It is very seldom one sees a good collection nowadays, but at one time they were more popular. Sometimes one sees them used in the summer bedding, but although useful, quaint, and pleasing, thus grown, the leaves flag when cut quickly, and this is not the case with pot plants. The reason is that the plants out-of-doors make rapid growth, less robust, and wiry. There is much beauty in a small selection of this type of Pelargonium, as the leaves of most of them are very pleasantly scented, and there is much diversity of form, some plain, others charmingly cut, crisped, and ornamental, useful for choice bouquets and posies. The flowers are as a rule bright in colour, particularly those of the variety Rollison's Unique, which is of loose habit, and is often seen affixed to a trellis, the shoots tied to it so as to cover the whole space. A great quantity of bloom will be produced, which will last over a long season, in the winter also, and will be valuable for decorations. If required in bloom in the winter, more warmth will be necessary than that of an ordinary greenhouse. A plant may be also grown in a pot in the ordinary way, and sticks put to the shoots as they progress. A considerable quantity of flowers will be secured, or it may be trained up a pillar, whilst for hanging-baskets it may be also used, and a few good examples in the conservatory are very effective. In a selection of these plants Unique should be certainly included, and others that may be recommended are the Oak-leaved kind (*P. querifolium*) the Nutmeg-scented or Lady Mary, as it is also called, the Lemon-scented, or crispum denticulatum, Fair Helen, Pretty Polly, Lady Plymouth, which has variegated leafage, Prince of Orange, Lady Scarborough, and tomentosum. All these are worth growing, and in time you will be able to add others, but these are the finer.—C. T.

—All the South African Pelargoniums require greenhouse treatment, but they can put up with a very low temperature occasionally, although continued frosts would kill them. Most of them would not suffer with the temperature falling to the freezing-point in the house. They might do in an unheated house, if they could be removed to a room in the dwelling-house when very severe frosts set in. Some of the species are evergreen and should not be dried up in the winter, others are tuberous rooted, and are kept without water all the winter; these could be wintered in any room from which frost is excluded. Anyone anxious to grow plants will scheme some method to preserve them through the winter, even if they have to grow them in an unheated house.—J. D. E.

3890.—**Scented Pelargoniums.**—There is a great variety of these. Which do you mean by the "common" one? *P. capitatum* has rose-scented foliage, but I have never seen or heard of *P. odoratifolium*.—B. C. R.

—There are so many fancy names given to the Cape Pelargoniums that it is difficult to answer your question; but the rose-scented kind may be *P. odoratifolium*, a very old species, having been introduced from the Cape of Good Hope in the year 1724. The common scented-leaved Pelargonium is the Oak-leaved, under which name it is known in gardens and nurseries, without using the botanical title. You may sow the seed of Pelargoniums in pots filled with light soil, and well drained. When the seedlings appear and are sufficiently large, pot them off, and keep them through the winter in a warm temperature, say between 50 degs. and 60 degs. In the case of your not being able to provide them with this temperature, the better way is to sow early in the year, giving a good heat, and when large enough pot them on; thumbs first, then sixty size, and so on. It is not difficult to raise plants from seed, but by outtings is the best way.—C. T.

3892.—**Treatment of Smilaxes.**—I imagine you allude to *Smilax myrsiphyllum*, as this is quite a popular plant, and fortunately of easy culture. You had better put your seedling plants into 3-inch pots; with regard to soil it is not very particular; my plants are growing in fairly light loam principally. You are no doubt aware that the sprays of growth of this plant are used for associating with cut-flowers as well as for personal adornment. When it is intended for use in this way the growth should be allowed to support itself in a vertical direction. It readily clings to small wire or twine when so fixed that the shoots can reach the supports as soon as they start from the crown; a temperature of about 50 degs. suits it admirably during the winter. It will endure more cold, but in a low temperature it loses that pleasing green colour that makes it so valuable. Too much sun will also take the green colour out of the small leaves in the summer. The cooler the plant can be grown from May to September the longer the sprays will last in good condition when they are out. The flowers are insignificant, being very small and white in colour: the seeds are enclosed in a round fleshy ball, the latter being bright-red when the seed is ripe.—J. C. C.

—You should pot on the plants as they grow, and they will succeed in the conservatory, as they are hardy, although they dislike keen winds and severe cold. Pot them on, therefore, in ordinary garden soil, and when of sufficient size plant them out. And such kinds as *S. aspera*, *S. tannoides*, *S. rotundifolia*, and others are useful for rearing over tree-stumps or rocks. They are evergreen, and are a change from the various climbers repeated so often in gardens. Keen, cutting winds they dislike. *S. maurandina* has green and white leafage—a pleasing form.—C. T.

3903.—**Building a conservatory.**—If there is to be any considerable length of piping in the conservatory, I fear the apparatus would not act particularly well, for this reason: In cold weather after the water had traversed, say, 100 feet of piping it would be getting comparatively cold. Now, the natural tendency of cold water is to fall, while this would have to rise, or rather be forced, up to the higher level of the bath-room, and the circulation would consequently be more or less sluggish. Probably a better plan, in my opinion, would be to place a T-piece in the main flow to bath-room, with two cocks or valves, the branch leading into pipes in the conservatory fixed in the usual way, with return into boiler. In this way the current of hot water could be turned into bath-room or conservatory as desired; but there must be an air-pipe at the highest point in the pipes, as high as the bath-room tank.—B. C. R.

—If you can command a sufficient force in the boiler that heats the water for the bath-room, I do not see any difficulty in heating the conservatory; but not from a single pipe passing through it, as you seem to suppose. You will require a regular service of pipes, according to the area to be heated, and a separate feed cistern, so as to be able to shut off the water from the bath-room in frosty weather. You do not say as much, but it seems to me that you intend to heat the water by the kitchen boiler.

If that is so, it would be a complicated matter to have more piping than is required for the bathroom.—J. C. C.

3899.—Arrangement of a green-house.—There can be no possible objection to doing as you propose—viz., utilizing the new bonco as a cold or unheated one. Such a structure is useful for many purposes, and at all seasons, and much better than a heated house for wintering choice Carnations, Anrioles, &c. For a structure of this width and description as good a plan as any is to have a solid raised bed, about 4 feet wide and 2½ feet in height, along the front; then a 2½-foot or 3 feet pathway, and another raised etaging or bed rather higher than the other—say, 3 feet at the back—to accommodate large plants. It is as well to have such a house fitted with a thick blind on a roller to run over the roof, for use in frosty weather, and also some pieces to be hung round the sides when necessary.—B. C. R.

— If it was my case I should make the three-quarter span the stove, as this form is much warmer in winter than a whole span, but of course a good deal depends on the position of the boiler, as the warmest house should always be nearest the heating apparatus. The width does not give you much choice in the internal arrangement; a front bench 2 feet wide, and the walk 2 feet 6 inches in width, only leaves 5 feet unoccupied. This latter space would be best filled with a stage, with three or four tiers on which to stand the plants.—J. C. C.

3896.—Young Myrtles.—If the plants make good growth during the summer, and this is well ripened in the autumn by exposing them to the open air and sun, they ought to flower profusely, and when so treated I have never known them fail to do so. This is, in fact, the great secret of securing an abundant bloom. The plants should be lightly pruned annually by cutting out some of the weaker shoots, and then if they get a moderate shift, using good loamy soil, they ought to be covered with blossoms next summer. Do you make the soil firm enough? Or possibly what you use is too rich. They should have plenty of air and a light position at all times when kept under glass.—B. C. R.

— This Myrtles will flower when they get larger and older.—E. H.

— These do not flower until nicely established, and not then freely if allowed too much rooting space. A pot 6 inches in diameter is large enough for a four-year-old plant. Stand the pot out-of-doors in a sunny position to thoroughly mature the growth; but do not neglect to supply the roots liberally with water.—S. P.

Phyllocactuses.—There seems quite a reaction in favour of Cactuses, and those who intend taking up their culture cannot do better than try a few of the Phyllocactuses, which bear splendid flowers of brilliant colours, although, unfortunately, they are not long lasting. But all Cactus flowers—at least, the larger number—are ephemeral, this being atoned for by a good succession, as just as one fades another is expanding. One gets amongst the Phyllocactuses a very beautiful series of coloring—crimson, white, astiny-purple, and allied shades, sometimes shot with a pelocid tint peculiarly beautiful. When the plants are of large size, they bloom profusely. Moreover, they are very easy to grow. The less they are interfered with the better. During the growing season, which commences in spring, and lasts until the end of the summer, the soil must be kept moderately moist, and syringes them occasionally, giving abundance of air, sunshine, and a temperature at night of 65 degs. In the winter an ordinary greenhouse will suffice for them, as when at rest more air is necessary, the soil being kept dry. The flowers appear through the summer. For soil use good loam, mixed with a fair proportion of well-decayed manure, and such material as brick-rubbish, which they like well. A very beautiful variety is called J. T. Pocock, named after a famous amateur grower of Cactuses; the flowers large, about 9 inches across, and of rich colour—crimson, shot with purplish-violet. Delicate (rose), splendens, C. M. Harvey, grandis, which produces its fragrant cream-coloured flowers in the evening, and arenotata are a few of the best. The Phyllocactuses are very cheap, and not long ago a good plant could have been got for a few pence. I do not suppose they are not expensive now.—C. T.

Begonia Gloire de Sceaux.—This is a new winter-flowering Begonia, and is one of the finest things of its class that has been acquired of recent years. It was raised by the well-known French nurserymen, Messrs. Thibaut & Keteleer, Sceaux, near Paris, and is very distinct. The habit of the plant is quite pyramidal, and the leaves effective in colour, green, with a tinge of bronzy hue, and in fine contrast to the flowers, which are large, and a very decided pink colour, in rich contrast to the foliage. If there is a warm house at command with a higher temperature than that of an ordinary greenhouse, this Begonia will thrive well, and in the winter months prove a feature of much interest. It is really a first-class plant, not difficult to grow, and very rich in colour. It is a pity that the winter-flowering Begonias are not more thought of, but they are neglected. There are many beautiful varieties, and a few very easily cultivated. A good plant is B. Corrieri, the flowers white; and nitida and nitida alba are free both in growth and bloom. President Bourneillo, which has bronze-crimson leaves and rich pink flowers, is a kind worthy of mention.—T.

THE KITCHEN GARDEN.

"Exonian" Pea.—This is, as far as I have seen, the best early Pea, and it is a very good cropper. It would suit those who have not too much space to spare for vegetable growing, being compact and about 3 feet in height, whilst it is of first-rate quality, a point of chief importance when considering the usefulness of vegetables. It belongs to the wrinkled Marrow class, and is in every way a fine garden Pea, coming in before other varieties.—T.

3888.—Asparagus culture.—Perhaps too much manure and salt are given annually to the beds, or the roots are too deep, or the subsoil may be in an ungenial state. From the meagre details given it is difficult to say what is the exact cause; the roots may be old and exhausted, or they may be too young. To grow good Asparagus the land should be deeply trenched in the autumn, adding a good dressing of partly decayed manure, placing it between the first and second spit of soil, if harrowed deeper it is useless for the roots, as they would not find it. Good Asparagus can be grown in four years from seed sown in April; it is usual, however, to plant two-year-old roots, which is quicker than waiting for the seedlings as a few heads may be cut the year after planting, it is a mistake to crowd the plants, it is also wrong to plant them deep; a couple of inches of soil is ample over the crowns, finishing off with 2 inches of decomposed hot-bed manure, rotted loam, or vegetable refuse to prevent the soil becoming too dry in the event of it being a hot and dry summer. For convenience in cutting, Asparagus is generally planted in beds of three rows in each, but it is not absolutely necessary that it should be thus grown. It will succeed as well in rows like any other crop, without the trouble of making up beds. Presuming, however, that one bed is only required, the soil having been trenched and manured in the autumn, if the soil is in a fairly dry state the second week in April, a bed 3 feet 6 inches wide should be marked out; with a spade open out a flat trench down the middle, 2 inches deep, placing the soil on both sides of the trench. Place the roots in the trench, 15 inches apart, spreading the roots carefully out to their full length, that their direct progress will not be interrupted. If the soil is light it may be returned, covering the roots at once, but if heavy and retentive it is a good plan to cover the roots an inch or so thick with soil lighter in character—old potting-soil, wood-ashes, or road-grit will answer admirably—the object being to give the plants an early start. By no means allow the roots to become dry by exposure to the air. The outside rows should be planted in the same manner, 15 inches from the centre row. Many persons not only cover the beds in the autumn with manure, but they dig the soil out of the alleys between the beds, laying it over the manure. This is a mistake, as it not only renders the beds too wet during the winter when the soil is heavy, but the roots which run into the alleys are annually cut off. When the tops have decayed at the end of October they should be cut off close to the soil, all weeds cleared off, a coating of partly

decayed manure, 3 inches thick, spread over the surface. Early in April following the roughest parts of this manure should be raked off, so as not to interfere with the heads peaking through. A slight dressing of common salt is beneficial at the same time if the soil is light, but where it is heavy it is not wise to employ much salt. It has a tendency to make the soil wet. After cutting is finished in June give the beds a thorough soaking, if possible, of liquid manure, to stimulate growth for next year's supply.—S. P.

— There must be a cause for the Asparagus growing so thin and weak. Are the beds cut from too much where the plants are? Manuring is not always sufficient to regulate the cutting, so that the plants may begin growth earlier, or, in other words, discontinue cutting much earlier. It will be better to take only a dish or two from a weak bed for a year or two till the plants have got strong. Asparagus is not difficult to grow, but many of the old beds were planted much too thick in the first instance, and, in some cases, the seeds were permitted to ripen and drop about the bed and grow, and the plants permitted to remain. In overcrowded beds the grass must be poor and thin.—E. H.

3400.—Mushrooms.—Where all the details have been carried out with so much care it is difficult to understand the cause of your failure. On the other hand, Mushroom culture is such an uncertain undertaking, and a failure brought about by such trifling circumstances, that one does not feel surprise in such a disappointing case as yours, because, if the surface of the bed was allowed to get dry, or the heat suddenly decline, that would be sufficient to account for your failure, or it may be that the spawn was bad to start with; this, however, is not likely; want of sufficient heat and a dry surface I believe to be the cause.—J. C. C.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clear and concisely written on one side of the paper only, and addressed to the Editors of GARDENING, 37, Southampton-street, Covent Garden, London. Letters on business should be sent to the Publisher. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING is sent to great numbers in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question will often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appeared.

3908.—Roses in hanging-baskets.—Are Roses ever grown in hanging-baskets? If so, what kind of Rose is best adapted to the purpose?—C. S. C.

3909.—Treatment of a Lilium Harrini.—What should be the future treatment of a Lilium Harrini which has just flowered well in a pot?—E. M.

3910.—Fruit-trees against a north wall, &c.—What fruit-trees may be planted against a north wall, and what Roses and other Climbers against an east wall?—S. D.

3911.—Rhubarb from seed.—I have some Rhubarb raised from seed last year. What is the best treatment for it, and how long will it be before it is large enough to pull?—E. K.

3912.—Plants for a shaded wall.—What would grow well on a brick wall 2 feet high, shaded by a large Horse Chestnut? Would any kind of Rose flourish there? Mine is an excellent soil for Roses.—CAROLINE A. OATES.

3913.—Growing Tobacco.—Where can I obtain information respecting the growing of Tobacco in England, and why it should not be grown with profit in this country, as I believe it once was?—B. M. STANLEY.

3914.—Tar paths.—Will someone kindly give the necessary instructions how to make tar paths for a garden? Those I have seen are either soft and give in warm weather, or they crumble and appear to be rotten.—W.

3915.—Plants for a small pond.—I shall be glad to know the names of some aquatic and water-plants for a small pond, and hints as to planting? Also, what plants should grow round the sides and on the bank of the pond?—B.

3916.—Treatment of Croumbers.—I have small Croumbers and I have obtained three Croumber-plants. Not knowing how to treat them in stopping and setting of flowers, I ask if anyone would kindly instruct me?—TELEGRAPH.

3917.—Lilies and Irises for market.—Will anyone kindly tell me whether the growing of Lilies and Irises in quantity for the London market is likely to prove profitable in this climate (Thames Valley), given suitable soil?—AUSTRIAN.

3918.—Painting hot-water pipes.—Will someone kindly say which is the best mixture for painting hot-water pipes to be a nicelblack? I once saw a receipt in *GARDENING*, but cannot now find it. Pipes are all new in three varieties.—EQUILIBRIUM.

3919.—Classes of Roses.—Would someone kindly let me know how I can distinguish between the different classes of Rose—Parade, Hybrid Perpetual, Tea, Noisette, Fairy Bourbon, Damask, Provence, &c.—and state their different treatment principally?—JAMES SAKON.

3920.—Treatment of Peaches.—Succession shoots on my Peach-trees are sending out other young shoots from axils of the leaves where flower-buds should form next year. What am I to do? Also, should I stop the leading shoots, which are growing strong?—ANNOTS.

3921.—A pale blue Clematis.—Which would be the best white or pale-blue double or semi-double Clematis to grow in a pot to flower in winter in a greenhouse, and produce flowers that would stand well when out? Would a double Broombe answer for this purpose also?—ZONIA.

3922.—Beetroot and Oslary.—I should be much obliged if anyone would give me some information on the sowing of Beetroot and Oslary seeds. Ought they to be sown now and in what soil; also which are the best sorts for sowing in the open air, as I have no means of forcing them?—H. M. P.

3923.—Bedding-plants.—I have a nice lot of Chrysanthemum *Chamaemelum* in small pots, and should be very glad if someone would tell me if I can use them in any way for bedding with *Alternanthera* or *Mesembryanthemum cordifolium* var., or what is the best thing to do with them?—E. ROWLAND.

3924.—Fowl droppings.—I should be glad to know whether bird droppings can be used to make liquid-manure for such things as *Violets* in pots, *Anemones*, and the other ordinary plants in a herbaceous border? If so, what proportion of water should be put to the droppings, and how long it should stand before use?—F. G.

3925.—Gardening for profit.—I wish to start gardening with a view to profit in Flintshire. Would anyone give me advice as to the best way to begin, what crops to grow, and the probable outlay per acre? The soil is clayey. Apparatus does very well, and comes in early in the garden, about 6 miles from the sea.—PROFIT.

3926.—Management of a hedge.—I should be glad of advice as to how to strengthen and thicken a hedge some 300 yards in length? The hedge is principally Hawthorn, some 5 to 6 feet high, but has been badly made with side bushes here and there, and is straggly and very weak in places, worst near the ground.—ACTUS ALIASIAN.

3927.—Pigson's manure for Chrysanthemums.—Would "E. M." or some other experienced man be kind enough to say whether the above in a dry state is good for mixing in the compost for the final potting of Chrysanthemums? If so, in what quantity might it be safely used? Any information will be thankfully received.—G. N.

3928.—Treatment of a Magnolia.—I have a Magnolia somewhat of a hybrid, and almost always looked most vigorous, and has bloomed freely; it is getting thin in foliage, the buds are not lustrous as usual, and there is a good deal of dead wood about the end of the branches. Should I manure it, or what better treatment can be suggested?—GASTALINDA.

3929.—Pinks losing colour.—Will someone kindly tell me the reason of my hrow-edged Pink flowers losing their border this season? They were heavily laced the last three years, and now they have only the dark centres. They have had manure, water, and the plants are healthy. Can it be that the white Pinks in the same row have got mixed with the dark sort, and so deteriorated them?—M. S.

3930.—Seedling Grape-Vines.—I have three seedling Grape-Vines. They came up in a garden in the spring of 1887. They were neglected for two years, and then came to me. I planted them in an inside border of an unheated greenhouse facing south. They are very luxuriant, but have never had a bloom. The wood was ripened last year well. They are not out-of-door Grapes, and two seem alike. The other comes into leaf later. Will someone tell the reason of their not fruiting?—G. L. HURLES.

3931.—Insect pest.—During last summer I was much troubled with multitudes of small dark-brown spots made by some insect on my window-curtains, cushions, and almost every article in my rooms. I was unable to discover whether they were made by moths or flies, as I did not see an unusually large quantity of either. The same thing has already commenced this season, and I shall be glad if someone will tell me the cause and the best remedy? My house is in the open country and the windows are open a great deal.—L. M. N.

3932.—A small flower garden.—I should be glad to have suggestions for the arrangement of a small flower garden, the parties of the garden being a square, 100 feet the house, runs in a parallelogram north and south, length 30 yards, width 14 yards, surrounded on east side by very high Portugal laurel fence, on west by a low Yew-hedge, on south by a small planting of trees and shrubs, on north by a few shrubs and trees, 500 feet above the sea, and within 5 miles of it. I wish to give interest and variety to the ground, and to have herbaceous things principally.—R. T. JOHNSON.

3933.—*Centaurea candidissima*.—Will someone kindly give me advice as to what I can do with *Centaurea candidissima* in the way of bedding them out? In what way can I use them? Would they do for an edging to a bed of Scarlet "Geraniums," or would they do to fill the centre of some small round beds, the outside of the bed to be filled with *Alternanthera* or *Mesembryanthemum cordifolium* var. or could they be used in any way with *Labellia* or *Golden Feather* or *Mesembryanthemum cordifolium variegatum*? I should be glad to know, as I have a lot of nice seedling plants in small pots and want to use them, and don't know the best way.—E. ROWLAND.

3934.—A small town garden.—Some time ago I engaged a gardener to renovate my small town garden. For the purpose of making two flower-beds he removed a quantity of turf and afterwards buried it beneath the soil there, and in the borders. I find now that the Grass is beginning to crop up alarmingly, and removing it with the hand brings up the obnoxious turf on its surface. What can I do to eradicate the pest short of removing the said turf altogether? Will anyone also kindly inform me how to prepare a bed of soil for Roses and what Roses, standard and climbing, will suit a south-easterly aspect in this northern climate?—EOMINUSON.

3935.—Unhealthy Cucumbers.—I should be very glad if anyone will tell me what is wrong with my Cucumbers? About fourteen days ago I noticed young fruits drying up, so thinking they were damping off gave less water and more ventilation; then more seemed to go and plants looked worse, leaves drying up; I gave more water. Last week I noticed some very small light-bruwn insect on end and under leaves; I mingled with Tobacco-ashes, and in some were there still. For improvement next week shall clear all out, coals as well, try fresh lot. Would like to know what it is and what is the cause? It is my first time of growing Cucumbers. They are *Looke's Perfection* that I have in. They are grown in a span-roofed greenhouse facing south; district, Stockport, Cheshire.—R. G.

3936.—A lean-to Peach-house.—I have one of these unheated, aspect south-east, some 60 feet long by 12 feet wide at the base, contains Peach-trees trained to a wire trellis against the wall at the back, and a row of standards on the border near the glass. All these are in a most unhealthy condition, worse on one end than the other. Those against the wall have their branches twisted and distorted, and except towards the ends are bare of leaves, like stags' horns. The foliage, where it does occur, is crinkled and be-rotted, except here and there some long twig shows a more normal development; but then the leaves are light-coloured and sabby, and mottled with yellow. A few fruits have set in places on these trees. The standards near the glass are dead and dying, with distorted branches, as the others. Some young trees were purchased and planted last year. Of these four or five are all dead, never having made any growth at all. Others are just alive, and only one at the better end of the house shows any vigour; but here also the leaves are mottled with yellow patches. The trees are clean of mealy-bug or anything else, but that is the cause of their state, and what would be best to place the trees in a healthy condition?—FRANCIS.

3937.—*Epilobium vitellinum majus* (J. Kerriell).—This is a plant that luxuriates in a cool, moist temperature and in the shade, and, I imagine, it is because your neighbour's plants have been subjected to this, the right treatment, that they look so well, and are flowering now so well, and your own plants are looking so badly and showing no disposition to flower simply from the fact of not having been similarly treated. See previous allusion to this species, where you will always find it recommended as a cool plant.—M. B.

3938.—Plants for a stove-house (W. Ball).—This gentleman wants to know what plants he can use for such a structure 60 feet in length, 15 feet in width, and 10 feet in height? Well, there are many things you can have in such a structure. For the principal things I should have, say, a dozen *Tulips* of good distinct character, and the same number of good coloured *Orchids* of distinct character, some few *Anthuriums* and *Alcoveas*, a few *Dracenas* for shady spots, and a few *Nepenthes* or *Piper*-plants. These would make you a good permanent backbone for the general ornamentation of the house. The intervening spaces you can fill up with other ornamental-leaved plants and flowering plants as fancy dictates; but take my advice, and go in for some of the more ornamental kinds of the *Bromeliad* plants.—J. V.

3939.—*Caladium leaves* (M. Kelly).—These came to hand in very good order, but I cannot name them. You should send them to some grower of these plants. I should say that J. Laing and Sons of Forest-hill are probably the largest and best growers of these plants you could find, but be sure you get the ones you want, which, by the way, was not the case with those sent me.—J. J.

3940.—*Olivia miniata* (John Holt).—I cannot undertake to name this variety, but if you have a plant with four good heads upon it, it is in very good order, and worthy of a place in a collection at any exhibition, staging such a greenhouse plant in a collection of mixed stove and greenhouse plants. Your flowers remind me of the form called *Marie Ramirez*, but I could not say for certain. You will be quite correct if you call it by its typical name, and that I would do.—J. J.

3941.—*Maxillaria lutea alba* (J. McDougall).—This is the name of the flower sent and a very fine form of the plant you have. The plant has been growing very robust, and the number of flowers your friend has upon the plant should convince you the treatment given to it is quite correct, and you cannot do wrong if you follow it implicitly.—M. B.

3942.—*Cypripedium spectabile* (Henry Bennett).—Yes, this is a very good coloured flower of the species named above. You may have many of these beautiful *Moccasin*-flowers and never have so good a one. I have grown this plant in considerable numbers, and have seldom got a better one, but many inferior to it in the rich bright colour of its pouch.—M. B.

Catalogues received.—*Strawberry plants*. Mr. T. Laxton, seed and novelty grower, Bedford.—*New and Rare Plants, Orchids*, &c. Mr. William Bull, 536, Kings-road, Chelsea, London, S. W.

Books, pamphlets, &c. received.—"Practical Fruit-growing," by Mr. J. J. Neel. Messrs. George Bell and Sons, York-street, Covent Garden, London.—"Johnson's Gardener's Dictionary" (Part IV). Messrs. George Bell and Sons, York-street, Covent Garden, London.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

J. H.—Mildew very bad. Dress over with sulphur or one of the compositions for destroying mildew as advertised in *GARDENING*.—Dot.—We do not know of any Encolypus that will stand the degree of cold named. Is it some other tree you mean?—G. Cummins.—You should advertise.—Mrs. Molloy.—Apply to Mr. A. G. Budlar, The Lilies, 124, Beckenham-road, Beckenham, Kent.—S. H.—We think it would be best to try the *Prigolias*. What is it you wish to know especially about their treatment?—C. A. W. Cottrill, *Smilbury*.—The Grapes are "acidified" from want of early ventilation in the morning and a consequent damp atmosphere.

NAMES OF PLANTS AND FRUITS.

* Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the Editor of *GARDENING ILLUSTRATED*, 37, Southampton-street, Strand, London, W. C.

Name of plants.—*Scot's-gap*.—Ribes *aurum*. Constant Reader.—We cannot name garden varieties of Pinks.—James F. Smith.—Yes, *Cottley's Mossim*.—Roma.—*Ornithogalum Pyraeantha*.

Naming fruit.—Readers who desire our help in naming fruit must bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its determination. We can only undertake to name four varieties at a time, and these only when the above directions are observed. Unpaid parcels will be refused. Any communication respecting plants or fruits should always accompany the parcel, which should be addressed to the Editor of *GARDENING ILLUSTRATED*, 37, Southampton-street, Strand, London, W. C.

Names of fruit.—C. E.—We cannot attempt to name Apples at this late season of the year.

BIRDS.

3943.—An ailing Canary.—I have a Canary which peels the skin from off its feet and then eats it. Would you kindly tell me the reason, also cure? It is a last year's bird, sings beautifully and seems in excellent health. Its cage is thoroughly cleaned two or three times weekly, and the bottom lined with bird sand. Its food consists chiefly of Canary-seed with an addition of Rape, Millet, Ings, and a very little Hemp.—READER OF *GARDENING*.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruits and vegetables for drawing. The drawings so made will be engraved in the best manner, and will appear in due course in *GARDENING ILLUSTRATED*.

"Gardening Illustrate Monthly Parts."

Price 5d.; post free, 6d.

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OUTDOOR KINO TOMATO.

—The best kind growing in the open air, whilst it may also with advantage be grown under glass. *SHILLING*, Nurseryman, Winchfield, Hants. Put during June.—C. SHILLING, Nurseryman, Winchfield, Hants.

INCORPORABLE RIDGE CUCUMBER.

—Fruit 18 inches by 22 inches, best for outdoor growing, plant now, 6 for 1s. 6d. New Japanese Cucumbers, 3 for 1s. 6d., carefully packed, carriage paid.—C. SHILLING, Nurseryman, Winchfield, Hants.

TELEGRAPH CUCUMBER.

—Best for greenhouses or frames, strong plants, 3 for 1s. 3d., carriage paid. Vegetable Marrow plants, 3 for 1s. 3d., carefully packed.—C. SHILLING, Nurseryman, Winchfield, Hants.

TWOPENCE per packet.—Choice Seeds.

1. Sow now. *Prinella*, *Chinensis*, *Calceolaria*, *Oxycodon*, *Pansy*, *Cornish Primrose*, *Wallflower*, *Ukiahalla*, *Veronica*, *Cardinal*, *Crocus*, *Flax*, *Canna*, *Geum*, *Geranium*, *Heliotrop*, *Palms*, *Fias*, &c. 1s. worth post free. *Himrodia testiculata*.—C. SHILLING, Seedsmen, Winchfield, Hants.

OS. 6d. COLLECTION OF OHIO GREEN.

4 HOUSE PLANTS is a parcel of cheapness, contains 24 good plants of sorts for potting up to make greenhouse gay all summer. Order at once, 3s. 6d., carriage paid.—C. SHILLING, Nurseryman, Winchfield, Hants.

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—Bloom this year. *Not* prize spotted and named strain, 12, 3s.; 1s. 9d.—THOMSON, Chesham-place, Wakefield.

FUNKIA (Plantain Lily), 2 grandiflora, 2 aurea

variegata, large strong plants, 1s. 6d., free.—W.M. MUNRO, Ormskirk, Aberdeen.

GERANIUMS.—Autumn struck Scarlet Veo-

nia, 1s. 3d. dozen, 1s. 100, 6s. 1,000. Lady She-Mild and Iry-leaf, 1s. 3d. dozen, 1s. 100. *Calceolaria*, dark 1s. dozen, 6s. 100, post free.—A. ROBE, Crowsburgh, Sussex.

PRIMUM SINENSIS of the finest strain and

various colours. Strong sturdy plants for potting at once. *Part* *Beauty*, 1s. 6d., post free.—E. W. DANON, Bookish End, Brentford, Essex.

GARDENING ILLUSTRATED.

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ROSES.

ROSES IN VARIOUS SOILS.

THE advantage and need for contrasting a heavy growth with a light, but not necessarily weak, one, are of some importance, especially to younger rosarians, who may be discouraged by the seeming inferior quality and appearance of their Rose-plants compared with those cultivated by others in their neighbourhood. Under proper culture the difference is fully accounted for by the class of subsoil one's Rose garden is placed in. I have a light soil, and friends who come to see my small Rose garden generally interest, but do not alarm me, if they come in early summer by their friendly and candid criticism, to which I do not object. If they come from a district where Roses are grown on heavy lean or clay, they at once notice that my Rose-shoots are somewhat thin, and they come to the conclusion that in the current season good Roses can hardly grow on such light wood. Their conclusions are based on erroneous ideas of the value of the splendid thick growth which is quite common on heavy land, but most unusual where it is light. I have proved practically and conclusively in this neighbourhood, which has a very varied geological formation, abounding in different places with subsoils of clay, gravel, chalk, sand, &c., that a grower on light land can hold his own with one growing on heavy clay or the finest loam, and I have come to what seems a natural and proper conclusion, that a very strong or gross growth is of but slight advantage, and is not more likely to produce flowers of higher quality than those from the light wood of Rose plants grown in sandy or chalky districts. I have frequently noticed that these splendid thick stems, although they usually produce large blooms, very frequently also develop them of coarse and indifferent form, and experienced judges know that a well set-up Rose of good quality, if even only of medium size, will, as long as it is of good colour and first-rate form, get more points than a coarse bloom without form. To get

consequence usually being destruction when severe weather comes, and in the spring we have most frequently to cut away the lovely autumnal shoots, ruined by winter's chills and harsh winds, and to seek for a renewal of life close to the original bud. The question of the retention of the full autumnal growth and also the cultivation and care of Rose-plants at that period of the year are all of the greatest importance, more especially as regards the maintenance or otherwise of superfluous shoots usually freely developed after the first and principal bloom of summer is over. Some consider that for the sake of root-action it is wise to leave all growth, and others say that too much wood prevents the ripening of those more desirable shoots required for next year's developments. With these latter authorities I quite agree, and it has been my practice to use the knife freely in late August and September; but when you cut out, as I do, the weaker growths, a precautionary measure must be adopted—viz., to take carefully the more freely growing shoots, which seem when relieved from valueless companionship to grow very rapidly, and form on even light land excellent wood, which would not be discredit amongst Roses on heavy soils. If these Rose-stems be not staked, I find that the longer ones get top-heavy, and in a stiff breeze they will snap off at the base; then the growth of the season will be lost. A rosarian who makes up his mind to adopt this

THINNING-OUT SYSTEM for getting thoroughly ripened wood must also be content with less autumnal bloom than if he allowed his plants to grow anyhow or in a semi-wild state. I noticed once in a paper a very pertinent remark from an experienced rosarian about autumn Rose culture, and which may with advantage be repeated here—that we most usually neglect the precaution of disbudbing in the autumn, and those who would be ashamed to see the shoots of their Rose-trees interlacing and the huds growing in threes and fours early in the season neglect this care of, and attention to their plants later in the year, with the result of getting inferior blooms and also injuring much of the wood, which is of value for the coming year's bloom. I acknowledge that I felt the remarks to be generally appropriate, and I have no doubt with the majority this neglect is common, but one reply would be that it is really difficult with some Roses to keep pace with their autumnal bud formation. Such a Rose as my favourite Vicomtesse Folkestone is distracting in its prolific growth of flower-huds, and as it is not one of the very freest growing kinds, I do not thin it out as freely as is my habit with other varieties. To sum up the points discussed, I may say that those who grow their Roses on light soils will, if they carefully carry out the instructions available through the garden press, be able to get blooms of high standard from apparently weak wood; that the fact of their neighbours on heavy soil having very big bushes and immense shoots is no superior advantage if good form be the primary object; and that if they want a profusion of bloom they should not thin out the autumn growth, but if they consider the ripening of the wood to be of the first importance, they will do so.

MARCHEAL NIEL ROSE.

TO a certain extent this still retains its peculiarities, such as uncertain growth in individual cases, and also in being subject to canker or wartiness. Without discussing the question of special stocks, I believe the majority of cultivators are agreed that the Brier is the one on which it thrives the best. I have four plants growing in a large Rose-house, and which during the past three years have been cut down after blooming with very satisfactory results. In the spring of 1892 I cut several hundred beautiful flowers. Directly after the plants had finished blooming, the growths were cut hard back to within about a foot from where the growth started last spring. The growth as it starts is trained equally over the roof, and ripened up during the autumn with plenty of air. Not being shaded in the least, the shoots ripen up splendidly. I think it is certainly a mistake to allow a great extent of old wood to remain after blooming, and which, I am sure, makes the plants more prone to canker and wartiness. The roots of the Brier are small in proportion to the top, and appear to be unable to withstand the strain which the old wood brings to bear upon them; hence the collapse, which appears earlier, at any rate, than where they are subjected to cutting back. When cut hard back, the young extending growth encourages the root-action. There can be no question as to the advisability of subjecting the plants to a thorough rest preparatory to starting into growth. A degree or two of frost will not do them any harm as long as the wood is dry. In a greenhouse, where the rest the plants should receive cannot be given, owing to the other inmates of the house, Roses cannot be expected to succeed so well as in a well-appointed Rose-house. Here their wants can be attended to as needed, the structure being both heated and ventilated to suit them. The growth starts away evenly and strongly without being excited too much. This season I applied to the whole of the Roses in the Rose-house, and which are planted out, a dressing of burned refuse and night soil, which had been laid up for eighteen months and turned occasionally. Both the leaves and the flowers were finer and of better colour than I ever had before. This I attributed to the dressing. William Allen Richardson I treat the same as the Marsechal Niel, cutting it hard back after flowering. This and thorough ripening of the long shoots appear to be the secret of success. It grows the most freely when huddled on a half-standard.

Y. A. H.

TOWN ROSES.—The Rose is not a good town flower, but there are some kinds that will succeed better within such an area than others, and the following six varieties are mentioned as well suited for growing in a comparatively smoky atmosphere. They are well known, and to these requiring a small number, may be recommended General Jacqueminot as one of the best. It is a splendid variety, the flowers rich crimson, and very fragrant. I have seen plants bloom freely and bear good flowers within a mile of London. The variety Charing-cross—a fortunate thing, as this is a valuable variety.

Gloire de Dijon is another good kind, the plant making strong growth and bearing freely its well-known fragrant flowers, yet not so freely as in the country, when tumbling over a cottage porch. But within the metropolitan radius excellent results may be obtained. A very fine town Rose of the Hybrid Perpetual class is Captain Christy, the flowers of which are of a soft flesh-colour, deepening in the centre, full, large, and handsome. The foliage is good, and in every way this is a fine town Rose. Chestnut Hybrid I noticed recently blooming remarkably well in a town garden and the crimson flowers were produced very freely. This is a good town Rose, and one of the best climbers. I must confess that I do not care greatly for its colour, which quickly goes dead, but it is a free and in every way useful kind. A very fine Rose is Mrs. John Laing. It is vigorous, and succeeds well everywhere, certainly the best Hybrid Perpetual raised of recent years. The growth is strong, and the flowers of full, handsome shape, the colour rich-pink. Tea-scented varieties are very poor town kinds, but Mme. Lambert will give fairly good results. The plant is very free, and the flowers of distinct colour, salmon-pink, but it varies somewhat. These six kinds I have seen doing well near London, and as many who have gardens in the suburbs often ask for a few good kinds to grow, these were made note of.—V. C.

Japanese Roses and their Hybrids.—The Japanese Rose (*Rosa rugosa*) and its hybrids are beautiful in the garden, the growth spreading into a dense bush, conspicuous for handsome glossy-green foliage, and large single rose-purple flowers. These are produced until the autumn, when one gets the advantage of large crimson hips or fruits that are showy and handsome. Of the variously-coloured varieties none is more charming than alba, which, as the name suggests, has pure-white flowers, quite without colour, and like those of the parent, very sweet-scented. I think the White Japanese, or Kaimama Rose, is one of the most lovely flowers of the garden, and when cut a bunch of them is extremely pleasing in a bowl or glass. The *Rugosa* Roses are vigorous, hardy, free, and what is of great importance, rich in fragrance. A distinct and beautiful hybrid is called Mme. Georges Bruant, the flowers paper-white, and borne freely in clusters. It is a distinct and valuable garden Rose. Speaking of fragrance, reminds me that a variety named Comte d'Eprenil is one of the most fragrant Rose I know. Its flowers are semi-double, rose-purple in colour, and so fragrant that a few will scent a large room. It is as free and vigorous as the type. This question of fragrance is important, and there is a tendency to praise Roses that are absolutely scentless, a grave error, as scent is one of the most precious virtues of the Rose. No matter what its colour, form, or other qualities, if a variety lacks fragrance it is deprived of its chief charm. Roses such as General Jacqueminot, perhaps the most popular of all Roses, is richly fragrant, and no new kind should be praised unless it possesses this characteristic of the queen of flowers. The *Rugosa* Roses are very sweetly scented, which, together with their hardy, vigorous character, also continuing in bloom throughout the summer, should make them still more popular.—C. T.

3908.—Roses in hanging-baskets.—There is no reason why Roses should not be grown in these, providing a proper selection of varieties has been made. If only an upright growing variety is required, I would choose those of the *Polyantha* section, such as Red Pat, Little Dot, and others. If intended to droop, choose Jaanna Ferron, Max Singer, and other more vigorous varieties. You must, however, be certain that they have plenty of water while in such a drying position as hanging-baskets invariably occupy.—P. U.

3919.—Classes of Roses.—The distinctive features in the different classes of Roses cannot be clearly defined by describing them. If you wish to become acquainted with the different characters of each you will certainly have to educate yourself by observation, and that is not difficult. For instance, if you had a bed of, say, twelve varieties of Hybrid Perpetuals, and another bed of the same number of Teas, you would soon see the difference when they were in growth. The Bourbons are quite distinct from

the Hybrid Perpetuals in the autumn by the freedom with which they then flower.—J. C. C.

—“Irish Saxon” seeks a very difficult question indeed. Even professional growers are very doubtful to which class several Roses belong. As to stating how to distinguish between and treat each separate class, I am afraid it cannot be done on paper in a sufficiently clear enough manner to be of much service. There are many more classes than “Irish Saxon” names, and they can only be recognized from a long and close experience of their separate characteristics; even then, as before noted, there is much doubt in several instances.—P. U.

GARDEN WORK.

Conservatory.

There should be no difficulty in keeping this house gay now, but in the plenitude of flowering-material do not be tempted to overcrowd and spoil the effect by dead leaves and naked stems. Crowded plants must lose all their bottom leaves, and there is a difficulty in watering properly plants which are buddled together to form a bank of bloom, as it is termed. Climbers, to be gracefully effective, may be permitted freedom of growth, but a good deal of thinning must be given to the *Troscandine*, *Passiflora*, and other rampant growers, or mischief will be done by overcrowding. We want to steer a middle course to avoid the formality which growth tied closely in always presents, and yet not to shut out the air and sunshine. Ventilation is a simple matter now, and consists in giving all the air possible during the day when the weather is calm and fine, and leaving sufficient ventilation at night to keep the air sweet and pure by free circulation. By-and-by, when the nights are warmer, the top ventilator may be left open all night. Plants having pots well filled with healthy roots will use up a good deal of water, and liquid-manure should be given twice a week, or, in some cases, if used weak, it may be given more often. Houses which are not shaded by climbers must have canvas blinds provided for rolling down when the plants appear distressed in hot weather. Calceolarias of a good strain are very showy. Keep them in the coolest part of the house and shade, and they must have plenty of water. In many gardens Malmaison Carnations are special features, and very beautiful they are when well done. A large group enclosed with Maiden-hair Ferns, will have special attention. It is not every grower who succeeds with them. In the matter of soil they are very particular. The loam and peat must be of the very best quality, and when both are equally good they may be used in equal parts, with a fourth part of good leaf-mould added. I have seen them grown in peat and leaf-mould only, but to give the plants staying power, some good loam is required. One of the best growers I know turns his old stock plants out into a pit, where a bed of the right kind of compost has been provided for layering the shoots. Here they make very fine strong plants, and it is quite useless starting with weak layers, as they cannot make strong plants. There are several healthy in blossom now which are very attractive in a cool conservatory. *Exochorda* (yellow) and *E. ventricosa* and its varieties are among the best suitors to grow. *Spiraea* which have done flowering should be planted out in a cool spot, and be well supplied with water. The hardy shrubs which have been forced may now be plunged outside to save labour in watering. Pot off seedling *Primula obconica*. Old plants may be divided and grown on for autumn flowering.

Stove.

Glaxias may be moved out of the stove now, and placed in a small house by themselves, mixed with Maiden-hair and other Ferns, the effect will be charming. A light shade will be necessary during hot, bright days. The beautiful *Streptocarpus* hybrids will associate very well with the Glaxias, and may be raised from seeds very easily, requiring much the same treatment given to the Glaxias. The beautiful winter-flowering *Gesnerias* will now be on the move. A few of the neocoma (*yellow*) and *E. ventricosa* and its varieties are among the best suitors to grow. *Spiraea* which have done flowering should be planted out in a cool spot, and be well supplied with water. The hardy shrubs which have been forced may now be plunged outside to save labour in watering. Pot off seedling *Primula obconica*. Old plants may be divided and grown on for autumn flowering.

Ferns.

Hardy Ferns under glass are very beautiful just now, and are just the class of plants that an amateur might grow with advantage when his conservatory is in an aspect not suitable for flower culture. They will do very well planted out on rockery mounds if the work has been well put together, so that the roots of the plants will have a chance. Good loam and leaf-mould, with some sharp sand, will grow most of the varieties in perfection. If grown in pots, and the pots are plunged in Cocoa-nut fibre in winter, no artificial heat will be required. Tropical Ferns are now grown freely, and, where lightly shaded, are of a beautiful dark-green colour. When exposed to strong light the

In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.

colour changes to a light-green, which is not so effective either in cut state or otherwise. Ferns must have abundance of moisture now. Shift on any plants which require more pot-room.

Chrysanthemum.

These should now be placed without delay in the flowering-pots, which should not be less than 9 inches in diameter. After potting stand in lines in an open situation, the stakes to be fastened to a wire soursed, stretched to the upright stakes of the plants. The weather will alter the time of the appearance of the buds; some, in fact, are showing buds now, which will have to be sacrificed. The soil for the last shift must be good and turfy, and be firmly rammed in, space being left at the top for top-dressing later on, as well as for watering. Stimulants will not be required yet, but a little soot and bone-meal may be mixed with soil for potting.

Frames.

will be found useful now for growing on young plants of many kinds, and are, in fact, indispensable for *Cinerarias*, *Cyclamens*, *Primulas*, &c. Frames are also very useful for Cucumbers and Melons at this season, where house accommodation is limited. In cold districts Capsicums are better planted under the shelter of glass.

Mushroom-house.

A good watering with liquid-manure will often resuscitate an old bed when the spore is not altogether exhausted, and a handful of salt to each large pail of water may be usefully given to Mushroom-beds at any time. In making up new beds indoors or outside get the manure fresh from the stable and mix good loam to the extent of one-third, and when the heap gets warm stir up the bed and spore as soon as the temperature is steady at 85 degs. or 90 degs.

Window Gardening.

Window-boxes and vases or tubs filled with plants for standing in corners anywhere about the house should be well supplied with water. This duty is often delegated to some of the boys no special interest in their work being attached to it. Foliage plants and Ferns, too, are well suited to liberal supplies of water when the pots are full of roots. A liquid or dry stimulant may be given if it is desired to keep the plants in small pots.

Outdoor Garden.

The Clematis family are flowering better than usual, showing that the bright sunshine and drought agrees with them. A few notes may be taken of the plants which are resisting drought the best in the herbaceous borders. Among the plants which are doing well without watering are *Delphinium*, *Chrysanthemum maximum*, *Galliardia*, *Persicaria Corniflora* (*Centureia*), *Lupinus*, *Anchusa laticia*, *Geums*, *Potentilla*, *Rocket*, *Day Lilies*, and *German Iris*. I have only named a few things which everybody may grow. *Phloxes* and *Hollyhocks* must have plenty of support or the stems will be poor; a good heavy mulch of manure will be beneficial. Roses are doing fairly well in good deep soil, but on poor hungry land there cannot be fine blossoms; this also is worth making a note of. We may not hear another season like this, but short bursts of dry, hot weather are very trying to any plants in a badly cultivated soil. A dry, hot season often leads to an increase of weeds in the lawn. Daisies and other weeds in hot weather soon rush up to flower and the seeds ripen quickly, and if the machine is taken off the seeds ripen, drop out, and grow in due course. I saw a curious instance of the spread of *Daisies* in a lawn a few days ago. There had been an edging of *Daisies* along the front of a border running along side a lawn; they had flowered freely, the seeds had ripened, and some were scattered along the edge of the lawn. These, in due course, flowered and seeded, and the seedlings deteriorated till they could be recognized as the product of double flowers. Where water is plentiful and can be distributed with a hose, I should certainly water terraces and lawns. Stake and tie hardy plants.

Fruit Garden.

Let me urge all who have the means to water their fruit-trees freely. Oh! for a good supply of water with a hose and plenty of pressure for distribution. This is the only economical way of watering any of our fruit trees. Strong runners must be hit this year if the fruiting plants have to supply them. Unless the beds have been watered liberally the sooner the runners are layered for early forcing the better. Melons, both in frames and houses, must be well nourished; if the roots are permitted to get dry there will be red-spider. At the same time, if the centre of the lights are deluged with water, and there comes a change in the weather, canker may make its appearance. In watering Melons there is no necessity for watering close up to the main stem, as all the best roots are some distance away from the centre. The thinning of Grapes in late June will now be pretty well finished, except in houses where no fire at all is used, and the borders may receive a dressing of some kind of stimulant. I used the patent silicate last year, and shall try it again this. It may be used freely, a couple of pounds to the square yard, but will not be too much, but it should not all be given at once; give half now and the remainder in three weeks or a month's time. Scatter it on the border and water it in. Lateral growth must be kept down before much extension takes place. Go over Peaches on walls for last time, and complete the thinning of both fruit and young wood. There is a good deal of crowding of both fruit and wood in small gardens to the injury of the trees. Give support in the way of mulch and water to Raspberries.

Vegetable Garden.

The kitchen garden is often in a bad condition in dry times, and I am afraid many vegetable gardens are in a bad way through the drought. Hope springs eternal in the human breast, and the kitchen gardener, whose hands are tired for want of manure and the labour to apply it, hopes on that the rain may come and give succour to his Cabbages and Lettuces, and cause the seeds to germinate. The chief lesson to be learnt from the present state of things is to manure more liberally and dig deeper. It is not of much use to plant the large Marrow Pea after the middle of June. Second Earlies and the very early Peas may follow on till the first week in July, after which we must trust to second crops of blossoms or older

plants which sometimes throw a good crop. I never remember to have seen early Peas so dwarf as this season. They are the best I ever raised, but the sides of the peas will be very valuable. Tomatoes will not bear much neglect in trimming and stopping young growth. If left long in a crowded condition disease steps in and attacks the foliage. It is doubtful if any useful remedy for the destruction of the Cladeporus has yet been discovered, therefore, it will be better to keep the plants healthy by maintaining a buoyant atmosphere; it need not necessarily be always dry if not stuffy. It is possible to keep Tomato houses fresh, especially in weather like the present, and then the blossoms will fall to rot for want of nourishment. Brussels Sprouts for first crop should be got out early and kept moving by watering and hoeing. Horn Carrots may be sown any time till middle of July to supply young roots. The same may be said of Parsley if there is likely to be any scarcity. I do not remember to have seen kitchen garden crops so unsatisfactory as they are in some gardens this year.

R. HORDAY.

Work in the Town Garden.

The welcome rain we have just had has freshened up every thing wonderfully, and dotted newly-planted bedding plants in the ground nicely. Watering by hand is all very well and often keeps things alive, but they never grow in the way that they do after rain. Bedding out should be finished off at once; even Dahlias, Begonias, Coleuses, and the more tender things may safely go out now. Asters, Phlox Drummondii, and other half-hardy biennials ought also to be planted without delay. Either seed or plants may be had and arranged in separate colours, but for my own part I always think the mixed beds look best. The best Dahlias for town gardens are the ordinary garden varieties; the very large-flowered "show" kinds are for the most part too shy, and so are many of the Gactus Dahlias, especially those which are light and fresh, and are not very hardy. Many of the Pompones are very fine, and so are the single varieties, but, though pretty, these last are very fugitive, and soon drop their petals when out. When out-flowers are in request, Firm King, a fine crimson-scarlet Cactus of decorative kind with rather small flowers, and Guiding Star, a large, pure-white Pomponé, should be grown in numbers, as they are both exceptionally free, pure and rich in colour, and of a nice useful size for decorative purposes. In a temperature a little above that of an ordinary greenhouse Gloxinias are very attractive now, where started moderately early. Seedlings sown early in the year will be getting crowded in the boxes into which they were picked off, and should be transferred singly to small pots with a rather close and moist atmosphere, and shade from sun, they will grow very fast now, and begin flowering in July or August, though it is as well to give them a small 4-inch pot first, if possible. Streptocarpus, too, are flowering freely. I believe there is a great future before these plants. They are as pretty as Gloxinias, though not so large, of a more wiry and hardy nature, and bloom continuously for months together. Those who have no heat may sow seed in the greenhouse now, keeping the pan moist and shaded, and the plants so obtained will flower abundantly next summer. Begonias must be shifted on into larger pots directly the first become fairly full of roots—that is, if large specimens are wanted, for if allowed to get pot-bound they rush into flower directly, and make but little more growth afterwards. Tomatoes must have liquid-manure as soon as they begin to carry a few pounds of fruit, especially if the root-run is limited. E. C. R.

THE COMING WEEK'S WORK.

Extracts from a garden diary from June 10th to June 17th.

Shifted on young seedling plants of Asparagus plumosus a mass from small pots to larger ones. This is one of the plants we are never likely to have too many of. If more plentiful it would become very popular, as it does well in the room. To obtain large sprays for cutting, plant this and *A. tenuissimus* out in a rather warm house, and train them up under the roof. *Maréchal Niel* Roses which are growing in one of the greenhouses, and which were cut down a month ago, have broken well, and some of the weakest shoots have been rubbed off. The plants are getting hardy generally. I always make it a rule to keep a few young Melon and Cucumber plants in stock in case a plant goes off. Pegged down Verbena, Heliotrope, Agrostema, &c. If this work is left too long the growth gets hard, and then the stems strip off. Progress in the kitchen garden is slow painfully slow, in consequence of the drought, but a good deal is being done with mulch and water, and I have never been so free from weeds. Finished thinning late Brassica—at least, all have been gone over once, but many branches will require looking over again to remove small bristles, and take a berry out here and there where crowded. Dressed all the inside borders with the patent silicate manure, and afterwards mulched with horse-droppings which have laid in the sun and got partially dried. All our watering, so far as regards the borders, is done with the hose—it saves so much labour. When I look at the immense amount of work which can be done with a good water supply, and pressure enough for the hose, I cannot understand why in every garden the water supply is so limited and so difficult to apply. If there are no ponds, rivers, or water-courses near, water enough for every purpose may be found by sinking a well, and putting down a pump which might be so constructed as to be worked by the wind, or by a small steam-engine. Of course, this and the building of the elevated tank would cost money, but it would pay in the long run. But we are a conservative people, and stick to old notions, often at a great occasional sacrifice. Is it any wonder that agriculture languishes? Picked the flower-buds of Fuchsia which are required to flower late, out down early-flowering Pelargoniums, and put in the cuttings. They will strike anywhere now if kept in the moist. Filled a small frame with cuttings of several varieties of Evergreens and variegated Euonia; will be kept close and shaded; the cuttings were taken from the young shoots. Watered a bed of standard Briars intended for bedding. The drought has checked their growth, and a soaking of water will set the tree. Planted out a lot of choice "King Charles" seedling bed of Pansies, and hybrid Cauliflowers. These are

beautiful border plants, and should be in every garden, especially where out-flowers are in demand. Finished gathering the Waterloo and Alexander Peaches; with me these two Peaches are very much alike; I have both growing in one house. There is not much forcing, and I commenced gathering Waterloo end of May, and Alexander came in a few days later. If they would only set as freely as Hale's Early or River's Early York their value would be much greater. Shifted on Zonal "Geraniums" for winter-flowering, sowed a bed of Brompton Stocks. Finished pinning out bedding plants. Sowed Tuniupe, planted Brussels Sprouts, Vetch's Autumn Cauliflower, and Celery.

TREES AND SHRUBS.

SAND MYRTLE (LEDUM BUXIFOLIUM)

Oh, to be quite correct, *Leptophyllum buxifolium*, is a remarkably variable and very distinct little shrub, useful alike for the bed or the border. It is popularly known as the Sand Myrtle, being a native of the sandy Pine barrens of New Jersey. On account of its dwarf, evergreen, free-flowering habit, it is one of the best and most interesting shrubs for rockeries. There is always a difficulty in selecting suitable shrubs for this part of the garden, many of the most beautiful and free-flowering being, as a rule, too



The Sand Myrtle (*Ledum buxifolium*).

large and strong for the majority of these structures, and it is only such as the above *Ledum* that may be safely recommend to take a place on even the smallest of them. In addition to the *Ledum*, *Azalea amona*, a plant that takes up little room, and though not perhaps generally known, is quite as hardy in the neighbourhood of London as the popular *Rhododendron*. It flowers with the greatest freedom in early summer, and in even our hardest winters it has not suffered in the slightest. *Cytisus purpureus*, many of the dwarf Boxes, a choice selection of the very dwarf conifers, &c., give us a fair variety to begin with. Shrubs, especially those of a dwarf evergreen character, are quite as essential in the rock garden as hardy alpine and other plants. They furnish in the dull months of winter, and help in a measure to hide the bareness which always exists here when the plants are at rest. Much remains to be done in this direction on most rockeries; as a rule, too much attention is given to the development of spring and summer-flowering plants, to the entire exclusion of plants that would give an effect in our rockeries need not be blank throughout the dull season; but, on the other

hand, might be made as interesting, if not as beautiful, as when at their best in summer. All this and much more may be done at the expense of very little extra space, as most of the shrubs mentioned are slow growers, and it would be many years before they required renewing. The *Ledum*, in addition to being evergreen, is, as may be seen in the cut, a beautiful-flowering shrub. The flowers are white and borne in dense clusters in early summer. Like most other American shrubs, it thrives best in a peaty soil, and it will also be found useful as an edging to beds, &c. K.

3928.—Treatment of a Magnolia.—I should say the roots have penetrated into something they do not like; possibly they have got beyond the soil prepared for the tree when planted. If it were planted in the natural soil without any preparation, I should say it has suffered from frost during the last three years. In the former case, I should next October remove the soil up to within 3 feet or so of the stem for at least 2 feet wide, and replace it with fresh decayed turf, leaf-soil, and partly decayed manure. Give an abundant water supply at once, and next year also if dry.—S. P.

As the tree has done well in previous years, its failing to do so now may be attributed to the soil where it is growing being exhausted, or it may have suffered by the effects of the dry season. If the latter, a good supply of water to the roots might set it right again. I would now put a dressing of manure round the base of the tree, and give it a thorough good watering through the manure. The water will carry some of the fertilising properties of the manure down to the roots. An addition of fresh, good soil may be made in the autumn by digging down at some distance from the tree and removing the useless soil up to the base of the tree, replacing it with a mixture of good loam and manure.—J. D. E.

I am afraid your plant has been injured by the severe frost of the past three winters. It is one of those plants that do not show the effects of cold so soon as some. The best thing you can do to restore its vigour is to take out some of the old soil away from its roots—two barrow-loads would not be too much—and put some good rich earth back in its place. You will require some patience, as in its present condition it will not readily respond to your treatment.—J. C. C.

3926.—Management of a hedge.—By far the best way is to cut the hedge down to within 9 in. of the ground next autumn, especially when it is in the worst condition near the base. Mismanagement at the first was the cause of its getting into a bad state there. So few persons know how to start really well with a Quick hedge. If the plants are not cut down to within 4 inches of the soil at first, seldom ever can such a hedge be considered satisfactory. When allowed to grow 2 feet or more without being topped, branches hardly ever grow from the base—hence it is what is termed "leggy." By all means grub out the Elder bushes, and plant more Quicks in their place—a single row, 4 inches apart. By cutting the hedge down as advised, new growth will be made direct from the base, and a perfect hedge will be had in time; but as it now stands it can never become a good fence. Quick hedges require cutting at least twice every year. This induces extra growths to be made, thus strengthening the hedge.—S. P.

I should say that the best way to strengthen and to thicken the bottom of the hedge would be to "pleach" it, as we used to call it in Wiltshire, or, in other words, to lay it down. Cut some of the upright stems half-way through a foot or two from the ground

with a hatobet or bill-hook, bending the tops down and interlacing them with others, which should be cut clean off at about a yard in height, or, instead, some stakes may be driven in. The whole will grow again, and in time they will make an almost impenetrable fence. Elder is poor stuff, and should be replaced by Quicks or Myrobellia.—B. C. R.

— Elder bushes should never be planted in a Thorn hedge, as they grow too vigorously and the large leaves weaken the Thorn by shading it from the sunshine. I would certainly cut the Elder out and cut the hedge down to within a foot or so of the ground; this will cause it to break out into numerous growths and will lay the foundation of a thick set hedge which will only require good trimming to form an impenetrable hedge. A good Thorn hedge is an admirable fence. It ought to be kept free from weeds.—J. D. E.

— Grab out the Elders and cut back the Thorns to a uniform height of 3 feet or 4 feet, and fill in the weak places at the bottom with Privet.—E. H.

FINE WILD GARDEN PLANTS.

AMONGST the thousands of hardy perennials in cultivation at the present day there are numbers of them which, though they are plants of noble port, are not suitable for a mixed border, but require either a place to themselves, or to be planted in semi-wild situations where they can attain full development, and then they produce a striking effect. The huge *Onopordons* which grow 8 feet to 10 feet high, and other large Composites, such as the various species of *Ligularia*, *Sesuoio*, *Lappa*, *Silphium*, *Veronica*, *Helianthus*, *Eupatorium*, *Mulgedium*, and *Telekia speciosa* (here figured), &c., have a very stately appearance. The large-growing species of the following genera will also flourish well in such a position as this. *Althaea* and *Malve* may be planted here, as also the handsome *Impatiens*, *Perula*, *Phlomis*, *Campanula*, *Verbascum* and *Symphytum*. Climbing plants, such as *Lathyrus*, *Calystegia*, *Tropaeolum*, &c., will clamber over the shrubs and supports in wild luxuriance, all of which tend to make this part of the garden attractive.

W.

3886.—**Substitute for rotten manure.**—I consider it is a point in your favor that you cannot obtain rotten manure. Quite an erroneous idea prevails amongst amateur cultivators respecting the use and value derived from manure quite rotten. What beneficial properties can there possibly be in manure when decomposition has entirely taken place? Simply the shell is left which held the goodness, the violent heat caused by the mass during fermentation necessary to render it in a rotted condition dissipated the ammonia, and it is the ammonia which should be preserved for the benefit of plants of any kind requiring stimulative food. Nothing is better as food for plants than horse-manure, as this contains the ingredients advantageous to successful cultivation. Instead of employing this in a fresh state throw, say, a couple of wheelbarrowfuls into a heap, encouraging the mass to ferment by wetting it if in too dry a state to become heated without. When the mass is warmed thoroughly through turn it over to sweeten it and get rid of a portion of the rank steam. After the second turning the manure is ready for use. In making liquid manure from horse droppings, I should advise that they be put into a sack in a fresh state, adding one peck of soot to every bushel of manure. The sack prevents the solid manure becoming mixed with the water, which would choke the passage-way on the surface-soil in the pots for future waterings. The water soaking through the sack becomes charged with the manurial properties.—S. P.

Wireworms.—A certain trap for these cotton-cake, baited about 2 inches deep, and examined about every three days. I have this year caught scores by this means.—X. Y. Z.

3878.—***Calceolaria rugosa*.**—This *Calceolaria* is a shrubby variety that was formerly much used for bedding, but a variety called Yellow Gem, much dwarfier in habit, has to a large extent taken its place. A few specimens are also much used in some places.—E. H.

THE KITCHEN GARDEN.

LATE PEAS.

It is customary for the compilers of calendar matter to advise the cessation of sowing late Marrow Peas after the middle of June, but instead of these some of the early sorts are recommended to be sown. Doubtless this is sound advice as far as the more northern or cold localities generally are concerned, though if those practising in more favoured districts adhered to it, the chances are not many late dishes of really good Peas would often be forthcoming. I hold that *Ne Plus Ultra* or any other well-tried late sort may be sown as late as the end of June in all southern or warm localities with every prospect of profitable crops being obtained, always provided they are not starved for want of moisture at the outset. In the neighbourhood of Bath Omega is a favourite late variety, and this may be briefly described as a medium height form of *Ne Plus Ultra*. Mr. Cooling, who has long made a speciality of Peas, sows Omega extensively after the first good rain that may fall during the first fortnight in July, or if rain does not sufficiently moisten the ground, the watering-pot has to be employed. From these rows good late crops



Telekia speciosa.

are obtained, the supplies not unfrequently lasting till near midwinter. Certainly the climate in the neighbourhood of Bath is exceptionally mild, but, all the same, the plan of sowing Omega early in July is well worthy of being given a trial in various other parts of the country. With me the late June sowings of *Ne Plus Ultra* usually hold out till severe frosts are experienced in November, and in addition we also have good pickings from a number of rows of the dwarf William Hurst. Either this or the similarly good Chelsea Gem may be sown up to the middle of July on the ridges between Celery trenches or on borders newly cleared of early Potatoes with a good prospect of remunerative and greatly appreciated crops being obtained. One great advantage these dwarf varieties have over taller-growing sorts is the ease with which they can be protected from early frosts. If required late they must be protected too, especially if they are growing in other than the highest part of the garden. Branches of Fir or Evergreens or a strip of scrim canvas hung over strings or wires strained well above the Peas will usually prove ample protection. I must also point out that it is next to impossible to sow two or three short rows of dwarf varieties, as they would never attain good crops

ings at one time. From one quart to two quarts of seed may well be sown, the rows running through the centre only of the Celery ridges or else 18 inches or rather less apart on borders of any kind. The practice of

SOWING NEWLY-SAVED SEED of both the dwarf early varieties named and also William I. on similar sites is a good one. New seed invariably germinates the most strongly, and a vigorous start is a great gain in the case of late Peas. Too often the old seed produces very feeble plants, and these make but poor progress and fall a prey to mildew. August is usually a very trying month for Peas, and if they are subjected to the ordeal of dryness at the roots as well as excessive heat, it is not to be wondered at if they either crop prematurely or succumb to mildew. Late Peas generally ought, therefore, to have a deep and fairly rich root-run, and the soil so drawn up to the rows as to form a basin for holding the copious supplies of water that ought to be given during August and the early part of September. Very frequently cultivators are misled by appearance. Very rarely indeed do we get enough rainfall during the summer months to keep the roots of Peas sufficiently moist, and it is most unwise to stop watering during showery weather. That is really the best time for watering and also applying liquid-manure, and, in any case, mere dribbles are useless. A mulching of straw manure is never thrown away on Peas, and a thorough roaking should be given where possible. M.

3916.—**Treatment of Cucumbers.**—Procure three boxes each about 2 feet square, three parts fill them with any good soil; first boring several holes in the bottom to allow the water to drain through, and cover the holes with broken bricks 3 inches thick. Put one plant in each, just covering the top roots with soil; make this moderately firm. If ordinary garden soil is used, add one part of horse-droppings or partly decayed stable manure to every three parts of soil. Stand the boxes in the front of the greenhouse, and in the most sunny spot. Fix some wires to the rafters 1 foot from the glass to train the branches on. Do not pinch out the point of the plant until it is 4 feet up the roof of the greenhouse, and not then if side shoots are being freely made at the base of the plant. These should be pinched at the second leaf, repeating the process as growth is made. Syringe the leaves twice daily during fine weather, say, once at 8 a.m. and again at 4 p.m. When the roots show on the surface cover them an inch thick with soil and manure in the same proportion as the plants are growing in. Maintain the soil in a moist state. It is difficult to say how often it should be watered, so much depends upon its character—heavy or light—the position of the house, &c. Do not allow the roots to suffer for want of moisture. This will be the best guide: Probe down a few inches to ascertain its state, and give water accordingly—that which is tepid is the best, as being less likely to give a chill to the growth.—S. P.

— Let the plants grow some 3 feet or 4 feet unstoppped, then take out the points of each. Lateral growths will soon push from the axils of the leaves, and when these have advanced a short distance these will show the embryo fruit on each. Stop these laterals at one joint beyond the fruit, so as to enable this to swell, and when they push into growth again repeat the process as often as may be necessary throughout the season.—B. C. R.

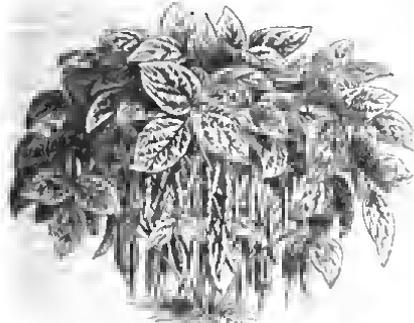
— Let the main stem have a good start before stopping, say 4 feet or 5 feet, or even more if there is room, but stop side shoots as soon as they show fruit, and afterwards stop one leaf beyond the fruit and follow this up all summer, and there will be plenty of fruit if the other treatment is right. The chief requirements of Cucumbers under glass are moisture, shade in hot weather, and plenty of nourishment in the shape of rich top-dressing after they begin to bear.—E. H.

— It is not desirable to grow these in the same house with greenhouse plants. The best way will be to plant them in flower-pots from 10 inches to 12 inches in diameter. When the plants have grown about 18 inches in height, pinch the growing points out. Lateral growths will at once be produced, and upon these fruitful blossoms will soon appear. Stop the lateral

growths again, and the fruit will soon grow large enough to eat. It is not necessary to set the blossoms if the fruit is not wanted to produce seed. The plants require rich soil to grow in, and surface-dressings of richer material afterwards. The plants do better in a hot-bed.—J. D. E.

DWARF KIDNEY AND SCARLET RUNNER BEANS.

The Dwarf Kidney Bean is one of the most useful vegetable grown as an outdoor crop, and it is also most accommodating if cultivated under glass. It is very impatient of cold, and therefore a warm, sheltered situation should be



A good type of Kidney Bean.

chosen for it. Crops of it are often damaged by being sown too soon. The second week in May is a good time to sow the first crop, and a second sowing at the end of May will furnish a supply till Scarlet Runners come in, after which the Dwarf Beans are seldom asked for. The latter should have 2 feet between the rows and 10 inches in the row, and the tall growers 2 feet 6 inches row from row and 1 foot apart in the row. They like a good, rich soil that has been well manured for a previous crop, which is better than rank manure, in which the plants are apt to run too much to foliage instead of fruitfulness. In very hot weather they enjoy a good damping over the foliage about five o'clock in the evening through a fine-roset watering-pot or garden engine. Such treatment strengthens the plants and prolongs the gatherings; it also obviates attacks from red-spider, to which they are liable. For the first sowing Early Prolific is an excellent cropper, and comes in early, and Pale Dan is a good kind for a general crop, with Canadian Wonder for large pods. Runner Beans require similar treatment to the dwarf kinds, with the exception of the distance between the rows, which should be 4 feet apart and 1 foot in the row. They can be grown with sticks in the same way as Peas, pinching out the points when they reach the top, or they may be run up strings. They are a very valuable crop for both the amateur and the cottager. They do not take up much room, and they can be run on strings against beards or a building, on which the old Scarlet, which is one of the best for general cropping, has, when in flower, a fine appearance. Even in some of the most confined town gardens may often be seen Scarlet Runners flowering profusely and bearing pods in abundance. Good types of these Beans are here figured. J.

3935.—Unhealthy Cucumbers.—Dryness at the root, accompanied with an arid atmosphere, would account for the state of the Cucumber-plants. By far the best plan is to root them out and start afresh. Any ordinary garden soil will grow Cucumbers, providing it is fairly sweet and mixed with partly decayed stable-manure, one part of the latter to three of the former. As Cucumbers are moisture-loving subjects, ample drainage should be provided, as stagnation about the roots in any form is bad for the health of the plants. If the soil is 15 inches deep that is sufficient. Fortnightly top-dressings of manure and fresh soil, an inch or so thick, stimulates the plants very considerably. A proper system of pinching in the shoots above the second leaf should be practised, and when the plants are fruiting freely the main

fruit ought to be cut from the end joint, allowing those to develop from the lower ones. Too heavy a crop at one time is not conducive to success, neither is that allowing too much growth to remain on the plants so as to over-crowd them. All the main leaves should have space to develop to their fullest extent. If more shoots are made by the plants than there is roof space, cut some out. Water must be applied freely, yet discriminately; do not give it if the soil is wet, but on no account allow the plants to suffer for want, or the small brown insects—red-spider—which "R. G." complains of on the under side of the leaves, will speedily attack them. Syringe the foliage twice daily, early morning and about 3 p.m.; this tends to promote health.—S. P.

I am afraid your plants are attacked with what is known as the Cucumber disease, for which there is no known remedy. You had better clear out the plants and also the soil, and after well cleaning out the pit, or whatever they are growing in, start anew with fresh soil, and put in plants obtained from afresh source. When so affected the plants do not always give out altogether, as with careful treatment they can be kept alive, and will produce a few fruits. But I think yours are badly attacked with the disease.—J. C. C.

The Cucumbers appear to be infested with thrips, and are otherwise in a bad way. Your idea of clearing them out and starting afresh is probably the best. Before setting out the fresh plants make sure the thrips are cleared out by fumigating rather heavily on two successive evenings.—E. H.

3922.—Beetroot and Celery.—Sutton's "Blood Red" or Pragnell's "Exhibition" are both good kinds of Beet. No time should be lost in sowing the seed in drills 15 inches apart on moderately rich soil. If too much manure is used the Beet is stringy and fibrous. It is a good plan to grow this root on land previously occupied with Celery or Peas. It is useless to sow the seed now during this dry weather in the ordinary way. After drawing the drills well soak the soil in the drill, afterwards sowing the seed. Sulham Pink is the best red Celery for standing through the winter, white kinds are not nearly so good for that season. It is now too late to sow for any other purpose but a winter and spring supply. Sow the seed thinly in sandy soil, just covering it, in a shallow box or seed-pan, placing it in a gentle heat to hasten germination to make up for lost time. When the seedlings are an inch high remove them to a cold frame, and when large enough to handle transplant them out 3 inches apart in fairly rich soil 2 inches thick, laid on a thin layer of rotted manure or leaf-soil, over a hard bed of coal ashes. Into the manure the roots will enter, ensnaring the plants to be lifted with a good ball of soil attached to each, which will prevent a check to growth when finally planting out. If garden space is limited, double rows may be grown to economise space. Dig out a trench 15 inches deep, and 1 foot wide, laying the soil on either side of the trench. Break up the soil at the bottom 3 inches deep; over this spread manure partly decayed, 3 inches thick. Cover this with soil chopped down from the sides of the trench 3 inches thick. This will make the trench wider for the plants; when they are 4 inches high lift them with a trowel, preserving all the roots intact, first well soaking the soil to enable it to cling to the roots. Plant in the trench as near 10 inches apart as possible. If the soil is at all dry give it a good soaking of clear water. Celery is a moisture-loving subject and should not at any time suffer for want of it, or the leaves will be hollow and spoilt. The aim should be to have it firm and with a nutty flavour. Any stint in moisture at the roots will not produce Celery of this kind. Occasional soakings of liquid-manure during dry weather will much assist growth. It is scarcely possible to give too much water during dry weather, but not too much stimulating food or there is a danger of making the Celery rot during the winter, owing to its being too succulent. When the plants are 15 inches or 18 inches high it is ready for the first earthing of soil to blanch the leaves and make it tender. At the base of each plant several small leaves or crowns will push their

heads be pulled off at the time of earthing. Two persons are required to earth Celery properly. The great point is to keep the leaves close together and upright while the soil is filled in about it, if not the soil finds its way in among the leaves and renders the growth crooked and spoilt. Tie a piece of bast around each stick before adding the soil, afterwards cutting it through with a knife to loosen the leaves. Add more soil as growth proceeds.—S. P.

It is now far too late to sow Celery seed. This should be sown out-of-doors in February or early in March. The plants are now ready to plant out in the trenches. It will be necessary to obtain plants ready to set out if good Celery is desired. The best time to sow Beet is about the middle of April; if it is sown too early much of it will run to seed, and if so late as this the plants will be too small. The Celery seed should be sown in a border of fine rather light soil. Prick the plants out when large enough, and let them be about 3 inches or 4 inches asunder. Plant them out in trenches in very rich soil about the end of May or early in June. Williams' Matchless Red is as good as any. Dell's Beet is very good.—J. D. E.

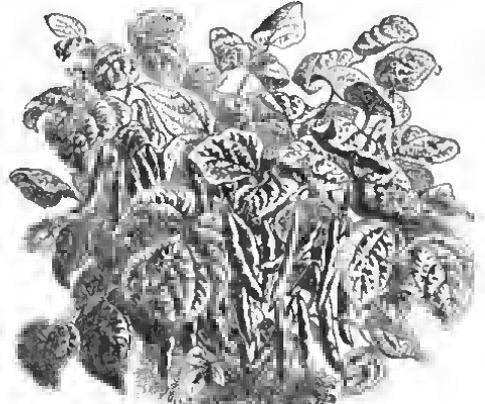
It is too late to sow Celery now. You will have to buy plants. Beetroot may produce usable-sized roots if the weather is suitable, but it is full late for sowing Beet now.—E. H.

3911.—Rhubarb from seed.—It is mainly a question of culture as to when Rhubarb can be gathered from seedling plants. Probably a few stalks may be picked from plants three years old. Plant the seedlings out next February in deep rich ground 3 feet apart.—E. H.

Mulching Turnip-rooted Celery.—Last year I tried a thick mulching of manure among my Celeric or Turnip-rooted Celery. I found it a great advantage. Besides keeping the ground moist and cool, conditions specially favourable to the well-being of Celery, it is an easy matter, even where the soil is fine, to get a good soaking into the soil.—L. C. K.

3925.—Gardening for profit.—As Asparagus does well in the garden, you cannot do better than make a speciality of it. It is under such circumstances a paying crop, and can, if necessary, be sent to a distant market, as it is easily packed. Seakale is another crop which is deserving of more attention, especially where there are facilities for forcing, such as frames and manure. Try to find out what is most in demand in the market near. Fruit, such as Strawberries, might pay to send to Rhyd, and other of the rising watering-places near.—E. H.

I do not think anyone can tell you exactly what to grow that will return the most profit without knowing the locality and the



Bean "Canadian Wonder."

facilities there are at hand to get rid of the produce. In the first place, the clay soil is not an advantage, except for certain permanent crops. If I was starting in such a case I would first ascertain what crops the ground would be likely to grow best, and of these I would select ones of a permanent character that require the least attention. If Asparagus does well, that should be one of them. Seakale might be another. Among fruit I should say that Strawberries, Raspberries, Gooseberries, and Red and Black

URBANA-CHAMPAIGN

Currants may be tried. The cost of labour in moving about a clay soil for annual crops you will find will be a serious item in the expenditure. The subjects I have mentioned when once planted give but comparatively little trouble.—J. C. C.

OUTDOOR PLANTS.

LUPINES.

THESE, like *Aquilegia*, *Verbascum*, and similar plants, may be had in abundance by simply growing them together in masses. In a large bed, where most of the varieties in cultivation are grown, innumerable varieties, in the way of colour and form, may be had in the course of a few years. Even the old *L. arborea*, which ought to be yellow, seems to be influenced by the bright and varied colours of the others, and produces some tinged pink and others blue. The polyphyllus group in the same way varies to a great extent, even in the same plant. Some few, however, of the annual kinds, when received straight from their native localities, are really handsome plants, amongst which may be mentioned *anhransus*. It produces large spikes of the most beautiful ultramarine-blue flowers imaginable; *nanus*, which grows about a foot high, has purplish-blue and white flowers; also *coccineus* (1½ feet high), rose-bloss, deep red, and white; *digitatus*, deep blue and white, an extremely fine variety; *guatemalensis*, white and purplish-red (2 feet); *albo-violacea*, violet and white (2 feet); *canaliculatus*, pale purplish-white and blue (2½ feet); *venustus*, lighter coloured than the above, and with larger leaves; *mutabilis*, handsome large foliage, pink and white flowers, very fine (2 feet); *Dunnettii*, pink and white, dwarfed, and with smaller leaves than *mutabilis*. There are also, though rare in a true state, *Hartwegii*, *Crikshanki*, *Menziesii*, &c. All the *Lupines* are easy plants to cultivate. They grow well in ordinary garden loam, and succeed even in town gardens. They ripen seed plentifully, and, if sown in the open early in April, the young plants will commence to yield flowers from the beginning of June until August or September. They are natives chiefly of Mexico. One of the best of perennial *Lupines* is *L. polyphyllus* (horn figured). K.

The Mountain Cornflower.—The varieties of *Centaurea montana* are very vigorous and hardy plants. If rather coarse they are showy, and several colours are available, ranging from purple-rose to white, and the pink is pretty when out. In smaller gardens the varieties are not usually much seen, but they are more pleasing than the type, the colours are softer and more refined. The plants grow between 1 foot and 2 feet in height, and throughout the summer, the flowers appear, being in shape like those of the common Cornflower but much larger. One sees in the markets large bunches of the flowers, and they are grown especially in quantity for cutting, as they last well in water. The plants are easily raised from seed nor they may be divided for increase. I make mention of them as they are good things for amateur gardens, readily grown, bright, free, and hardy.—V. C.

Pyramidal Rockfoil.—When in a small plant-house, only just heated to keep out severe frost, I was charmed with the effect produced by about twenty-four species in full bloom of this Rockfoil, named *Saxifraga pyramidalis*, mixed with the *Blue Campanula persicifolia*. It was a lovely contrast of colour, and obtained by judiciously associating plants of easy culture, such as could be grown by amateurs with a small house. Amongst the many Rockfoils this is one of the most precious, its great pyramidal spikes of pure white flowers lasting in beauty for a considerable period, and by placing them with the Bell-flower the effect is charming. *S. pyramidalis* is not difficult to grow, and, as a rule, when the plant has flowered and ripened seed, it dies. It is a Pyrenean plant, and forms handsome glaucous rosettes, and the flowers appear in a pyramidal-shaped spike, the stem purplish in colour, and it will rise nearly 2 feet in height. A thin stick may be put to it to prevent accident. On the rockery this Rockfoil is quite at home if planted in a perpendicular stone, in some chink in which it can send its roots and the rosette reveal its true beauty. A colony may be thus established and

prove of extreme interest and beauty. Those who cannot thus grow it should be content with pot-plants, and raise seedlings, although these will vary; but that lends interest rather to thus propagating them. Watch for the seed to ripen, and, when gathered, sow them in pots or shallow pans, which must be well drained, and filled with light, loamy soil, mixed with fine brick-rubbish, an excellent material for Rock-



Lupinus polyphyllus.

foils. Do not fill the pan or pot quite full, and sow the seeds very thinly on the surface, lightly cover with fine soil, and water gently with a rose watering-pot. If too heavily watered the seed will be washed away. Then cover the pan with some dark glass to promote germination, and remove the pan to shady corner. After germination give a little air, remove the glass, and the after treatment assists in transference, when of sufficient size, to other pans, and then to the rock garden, or to larger pots, if required for the greenhouse. The soil in the summer must be kept moderately moist, and, remember, in growing them in pots that they are quite hardy.—T.

Day Lilies.—These are good plants to grow where choicer things fail. They are very hardy and robust, succeeding well in uncongenial spots, and always bloom well. A group of them is handsome, and they, like many other plants, dislike constant disturbance at the roots. When once established leave them alone, and use in the first place good soil, moderately rich, deep, and away from trees. The autumn is the season to put them in the ground, and it is money well spent to provide a mulch of manure in spring to assist them to produce plenty of flowers, although this is not essential. The results are finer, however, from this treatment than from any other. There are some excellent variegated kinds, the leafage of attractive colour, and the flowers are very brightly marked. The best kinds are *hemerocallis Dumortieri*, the flowers of an

orange-yellow colour, and they appear as early as any, bearing several on the erect stems. *H. disticha* is of note, and there is a double variety, of which the flowers are yellow, with a tinge of brown colour in it. *H. flava* blooms early in the summer. The stem rises between 2 feet and 3 feet in height, the flowers rich yellow, and very fragrant, whilst they are of use for cutting. Then one may choose the narrow-leaved *H. graminifolia*, the growth very dwarf, and the flowers yellow; *H. Thunbergia*, yellow, and rather late blooming; *H. fulva*, also late, the flowers orange-bronze, and without fragrance; and *H. Kwanso*, of which the variegated variety is useful. These are the finest of the family, and their easy culture renders them of much value for all gardens.—V.

A note on Herbaceous Spirææ.—Few classes of plants are more charming than the Spirææ, shrubby and herbaceous, and of the latter section about six kinds are worth growing in all gardens. These would comprise the following: The Goat's-Beard Spiræa (*S. Aruncus*) is a beautiful flower, and a group of it is effective. On the higher parts of the rockery, in the border, or grouped on the lawn, this Spiræa makes a fine show with its feathery spikes of creamy flowers. It grows about 3 feet in height, more in very favourable spots, and the foliage is pinnate and handsome. It may be steadily increased by division. When in full bloom *S. Aruncus* is of extreme beauty. Another charming Herbaceous Spiræa is *S. palmata*, of which there is a good variety. The flowers of the former are bright crimson, both of flattish heads, and the plant blooms freely by the side of water. It is also grown in pots, and succeeds well under such conditions. One gets quite a group in such kinds as *S. lobata*, which is a relative of *S. palmata*. The common name of it is Queen of the Prairie. The growth is dwarf, and the flowers are of a rosy colour, borne in large bands. Another name of it is *S. venusta*. The border will be enhanced in beauty by planting this fine kind. Then there is the common Drupwort (*S. Filipendula*), a native plant too familiar to describe; but there is a double variety also well known, which must be mentioned. The flowers are quite double, creamy-white, tipped with red. Everyone who cares for flowers knows the familiar Meadow Sweet, very common by the side of ditches. Its name is *S. Ulmaria*, and there is a double variety that is a feature, also a variegated kind worth growing, the foliage attractively coloured. These Spirææ are also easy to grow, hardy, and will succeed in border, or by the side of shrubs, as well as by the margin of water. *S. palmata*, by reason of the bright colour of its flowers, and *S. Aruncus* are perhaps the two most beautiful.—V. C.

3910.—Climbers against an east wall.—Get some of the stronger growing climbing Roses, such as *Gloire de Dijon*, *Waltham Climber No. 1* (the flowers of which are of a rich red colour, very sweet), *Chestnut Hybrid*, *William Allan Richardson*, or *Reine Marie Henriette*; but *Gloire de Dijon* is the best, and then the *Waltham Climber*, *Chestnut Hybrid*, or *Reine Marie Henriette*. There is a large selection of things for the wall, besides Roses. The Winter-flowering *Jasmine*, *Honeysuckles*, *Clomatis*, especially *C. Jackmani*, *Yves* in variety, *Crataegus Pyracantha* (brilliant, with its bright berries in winter and its flowers in early summer), *Vines*, *Dutchman's Pipe* (*Aristolochia*), *Passion-flower*, *Wistaria*, &c.—C. T.

3912.—Plants for a shaded wall.—I am afraid Roses would not do much under the shade of a forest Chestnut-tree. Few things will, except *Iris* and *Honeysuckles*, and if these were planted alternately, and each confined to its own portion, which might be limited to 3 feet, the effect would be good. Make a good border to plant in.—E. H.

Few, if any, Roses would do much good in such a situation. *Honeysuckle*, *Ivy*, and *Jasmine* are almost the only things that will thrive to any extent.—E. C. B.

If the wall is not very shady, you might try such strong-growing climbing Roses as *Gloire de Dijon* and *Chestnut Hybrid*, first well preparing the soil—they will succeed well—or some of the beautiful *Bourbon* and *Noisette* kinds, which bloom freely. The shoots may be trained to the *Horse Chestnut*, and they would then hang down and make a charming picture in the garden. Such a position as this would suit well also the many *Ivies*, which delight in partial shade, and make vigorous growth, especially if the situation is rather moist. A good strong-growing, rich green-leaved

variety is Emerald Gem, which quickly makes headway, and you might also select some of the better variegated varieties, such as *H. aurea elegantissima*, *H. marginata elegantissima*, *H. angularis aurea*; but I have seen the popular *H. madeirensis* so crippled by winter frosts that I would not care to recommend it. Very beautiful, especially in the winter, is *atropurpurea*, the leafage of which is bronzy-chocolate in colour, and very handsome. Glymi, the leaves large and of a glossy character; Leesman, silver, a prettily variegated kind, and the strong-growing *H. Rægneriana* may be also recommended. You could, however, try the *Roses*, or a few *Ivies* as well. They are very pleasing in contrast, if the growth of the *Ivy* is not permitted to interfere with that of the *Rose*.—C. T.

— You do not say what aspect the wall is. If it is not north I should not fear to plant some of the strong-growing Hybrid Perpetual *Roses* to cover it. Such good growers as *Migna Charta*, *Madame Noobry*, *General Jacqueminot*, *Gloire Lyonnaise*, and climbing *Victor Verdier* would do well in a good *Rose* soil. But are you sure that the roots of the *Chestnut-tree* would not reach the *Roses*? If so I would advise planting some more vigorous-growing *Roses*, such as *Gloire de Dijon*, the *Garland*, and *Félicité Perpétuelle*.—J. C. C.

3915.—**Plants for a small pond.**—A small pond would look very pretty planted with *White* and *Yellow Water Lilies*, or even the *White Lilies* alone. If it is decided to have more variety, plant *Alisma plantago* (*Water Plantain*), *Botomus umbellatus* (*Flowering Rush*), *Hottonia palustris* (*Water Violet*), *Sagittaria angustifolia* (*Arrow Head*), *Pontederia cordata* (*Picerele*), *Typha angustifolia* (*Cat's Tail*), *Stratiotes aloides* (*Water Soldier*). Round the banks may be planted *Iris Paend-Acorus*, *I. sibirica*, and several others. *Lythrum salicaria*, *L. purpureum* *compositum*, *Phormium tenax* (*New Zealand Flax*), *Osmunda regalis* (*Royal Fern*), *Primula sikkimensis*, *Carex pendula*. Most of these can be purchased in pots, and will only require planting in good soil near the water's edge. The aquatics should be planted in mounds of good soil put under the water. They soon get established.—E. H.

3913.—**Growing Tobacco.**—I believe Messrs. Carter, of High Holborn, have published a pamphlet on this subject. It is easy enough to grow the plants, but I understand that the leaves do not possess the same strength or virtue as those produced in a warm and sunnier climate. Then it appears that the "sweatieg," drying, and subsequent preparation of the leaf are most delicate matters, of more importance than the actual growth, while, lastly, the Government, instead of encouraging, did their best to check and stifle what might have proved a remunerative industry, and so it has had to be relinquished as a "bad job."—E. C. R.

— The cultivation of this plant in England is very simple. Sow the seed in a hot-bed early in March. The plants should be pricked out in boxes, and treated just like half-hardy annuals. About the end of May the plants may be set out, 4 feet apart, in rich, deep soil. They each require a stout stick to support them, and with good treatment they will produce immense leaves by the end of the season. Remove all flowers and side growths. The reason it is not grown for profit is owing to the Act of Parliament which limits its culture to a small number of plants. It might, I think, be grown profitably but for this.—J. D. E.

— It has been, I think, pretty conclusively proved that Tobacco cannot be profitably grown after paying duty in this country by Messrs. Carter and others. Even suppose it could be grown the quality would be so inferior that no one would buy it. That, I believe, was the result of the trials a few years ago.—E. H.

3934.—**A small town garden.**—Where the mistake was made was in not burying the turf deep enough, so as to kill the Grass. Rotten turf is splendid stuff in a flower or any other bed, but it must be buried at least 6 inches below the surface, or it will grow again to a certainty. *Roses* do not, as a rule, thrive to any extent in a town garden; but if any will succeed it is *Gloire de Dijon* and *Aimée Vibert*. Standards succeed best in small town plots, and the beds must be made very rich with old manure, leaf mould, decayed turf, &c.—B. C. R.

— As in removing the turf you will probably disturb the flowers, you had better sprinkle

the surface with some salt where the Grass appears, but enough salt to make the surface white in colour will destroy the Grass. In doing this you may also injure some of the plants, for which there is no help. It is for you to decide which will do the most injury. It is very clear if it is left where it is without anything done to it the Grass will come through and spoil the growth of any plants growing near it. With regard to preparing soil for *Roses*, a good deal depends upon the character of the present staple. If this is an old garden you had better take away the earth from the bed 18 inches deep and put in its place the same thickness of good loam. If loam is not available, stir up the present soil to the depth above mentioned and mix with it half-a-barrow load of rotten-mannre to every square yard of surface. Twelve good *Roses* for standards would be *Earl Dufferin*, *Princes Camille de Rohae*, *Alfred Colomh*, *Margaret Dickson*, *Mrs. J. Laing*, *Mme. Gabriel Luizet*, *Merveille de Lyon*, *Captain Cbriety*, *Paul Neyron*, *General Jacqueminot*, *Francois Michelon*, and *Eclair*. Some good hardy Climbing *Roses* will be found in *Gloire de Dijon*, *Aimée Vibert*, *Sir J. Paxton*, and *The Garland*.—J. C. C.

3929.—**Pinks losing colour.**—The lacing, as it is termed, disappears, leaving the coloured centre only, unless the plants are well cultivated in good soil. Old plants will not always retain the lacing, nor will young plants put out in the spring and planted in poor soil. To get good laced *Pinks*, the cuttings, or, to use a technical term, "pipings," should be put in as soon as they can be obtained this month. When the young plants are large enough, which will be in September, plant them out in rich, deep soil, and badly-laced *Pinks* will be the exception, and good ones the rule. Planting them near white *Pinks* would make not the least difference.—J. D. E.

— The laced *Pinks* should be renewed from cuttings annually, and planted in the beds not later than October to keep the lacing right. It is not likely that White *Pinks* growing near would affect them in any way, but the long continued drought would very likely have considerable influence.—E. H.

THE BEST STONECROPS.
SEDUM SPECTABILE.

This (here figured) is the finest of all the tall-growing sorts, and a handsome plant in every way. It is beautiful from the time that its

a pot, they root and flower and look very attractive. It withstands cold or heat, wet or drought, and is, therefore, a most accommodating plant. K.

Doronicums.—May I supplement the notes of your correspondents in *GARDENING*, June 3rd, page 190, as one or two of them give erroneous information? There are at least a dozen *Leopard's Banes* natives of Europe, and half-a-dozen more of Western Asia. Two are reputed to be British, but probably are not indigenous. The history of the fine variety known as *Harpur-Crewe* is this: It was given to me and others by the late Mr. Harpur-Crewe not long before his death under the mistaken name of *D. Clusi*. I sent a plant to Kew for identification, where it was pronounced to be a variety of the native *D. plantagineum*, and it was named *D. plantagineum* var. *exceles*. This name was cruelly long for gardeners, so I distributed it largely after Mr. H. Crewe's death, under his name, which it still bears. It is not, as stated on page 190, a form of *D. austriacum*, but is probably a hybrid, as I have never been able to find a fertile seed upon it. Mr. Harpur-Crewe thought it originated in his garden. The species *D. austriacum*, a name often erroneously given to *D. caucasicum*, is seldom seen in gardens, being very capricious in its tastes. It is grown in large quantities, and is very showy in Mr. Paul's hardy plant nursery, close to Broxbourne Station. I have had good plants from these three or four times, and they have always died within a year. I cannot find out the cause. *D. caucasicum*, often wrongly called *D. austriacum*, and the closely allied *D. Columnae*, with their dwarf habit and bright-golden flowers, would be excellent early spring plants if they were not so liable to be disfigured when in flower by spring frosts. Many other *Doronicums* are not in cultivation, simply because, being inferior to those we have, they are not wanted.—C. WOLLEY DOD, *Edge Hall, Malpas*.

3877.—**American Bellbine or Bindweed.**—I do not know of a plant by this name, although our common *Bellbind*, *Convolvulus sepium*, is a native of America, so perhaps the plant is *C. sepium*; but there is a plant called the *American Bell-flower*, *Quamoclit vulgaris*, so possibly this is the thing. The *Quamoclit* belong to the same order as the *Convolvulus*, and



OUR READERS' ILLUSTRATIONS: A fine Stonecrop (*Sedum spectabile*). Engraved for *GARDENING ILLUSTRATED* from a photograph sent by Miss Galsford, Ollington, Worthing, Sussex.

crowns peer above the ground in spring and develop into rigid shoots, clothed with broad, glaucous leaves, till the last flowers fade late in autumn. The flowers, borne in a dense, broad, flat corymb, which terminates the shoot, are of a rosy colour and last quite two months. In a cutting they last nearly as long, and the shoots root in the water, whilst if before the leaves open the shoots are cut and dibbled several into

are for the most part half-hardy annuals. Two good kinds of them are *Q. coccinea* and *Q. hederifolia*, rapid growing plants, that will quickly run up a moderately high trellis, the flowers scarlet in colour. They may be grown like half-hardy annuals, and the seeds may be sown later in the spring in the open.—C. T.

3878.—**Centauria pinnatifida.**—The *Centaurias* will make a suitable edging for

Scarlet "Geraniums." They will not fit in so well with Alternantheras, except as centres, and for that the growth is rather too rough and coarse, though they may be used in connection with *Ilue Lobelias*, either in mixture, or the *Lobelias* may form a broad band round the *Centaureas*.—E. H.

— You can use the smaller plants as an edging to a bed of scarlet, crimson, or pink "Geraniums," etc., or, as you say, as a centre (the larger plants) to a mass of Alternantheras, but they do not go well with Golden Feather or the *Mosebryanthomum*, as the contrast is not sufficiently marked. A pretty way to use them is to plant them alternately, both ways, with *Heliotrope*, *Blus Ageratum*, or with reay or salmon-pink "Geraniums" or *Begonias*. These silvery leaves go well with almost anything else of a rich colour, except yellow, which is not distinct enough; but some of the prettiest effects I have ever seen were produced as above.—B. C. R.

— This is a most useful bedding plant, and its silvery leaves tone down too brilliant effects, and when used to break the formality of a bed, which is perhaps too flat, few things are better to use. It is excellent for beds filled with very bright colours, and the hardy nature of the plant is in its favour for such work, whilst the foliage does not then lose its distinctive character. A very handsome bed I saw last year was filled with *Lobelia fulgens* as the central feature, the *Ageratum* the groundwork, and this *Centaurea* and Tufted Pansy Skylark formed the edging. It goes extremely well with the *Ageratum*. You must not get too many variegated things together, otherwise the effect will be spoilt.—C. T.

3928.—Bedding plants.—I have used the Fish-bone Thistle (*Chamaepeuce Cassabona*) as dot plants, or covered over with the other plants named in carpet bedding, and they make a nice change.—E. H.

A SMALL FLOWER GARDEN.

3932.—First, get the soil into thoroughly good order, and if the garden is new, although the matter may appear simple, thoughtful consideration is necessary. A glaring fault in most gardens, large and small, is the size of the walks. One walk is usually sufficient. It is impossible to get much pleasure from a garden when the chief thing in it is a hard, uninteresting gravel path, twice as large as necessary, and usually adorned with Moss or weeds. Always have the path at the side of the garden, and it need not be wide, just of sufficient width for one person to walk upon with comfort. The idea is to get as many flowers as possible, and every inch of space should be jealously preserved. A model garden I saw laid out recently. The space was small, but made the utmost use of. A narrow path ran down one side, so as not to intrude on the general view, and the centre of the space was laid down with good turf, on the outskirts of which were oval beds, arranged after no set order, to prevent formality. A broad border skirted the lawn, and the plants disposed in groups, a mass of *Michaelmas Daisies*, *Helianthus*, and so forth to create a good effect in colour. Rarer things were labelled, but labels are ugly, only necessary when the plant is unfamiliar. In very small gardens a walk running round the house suffices, and the remainder of the plot may be given up to flowers. Many very beautiful spots may be seen even near such large and smoky cities as London, full of colour in the summer and autumn months, through judicious use of suitable things and planting them in bold clumps. A colony of *Daffodils*, *Tulips*, or Tufted Pansies is far finer than a sparse sprinkling of a medley of subjects planted simply to gain variety. There is charm in variety, but not when it is procured at the expense of effect. One will soon discover what plants succeed best, one locality agreeing with certain things better than another. Half the battle is to know the most suitable things, not attempting to coax into respectable growth delicate little alpine that please the eye in the exhibition tent. Many select their plants at a show, and take a list of things that are often difficult to cultivate and entirely unsuited to the locality. The soil, if not good, must be made so by fresh material. It is absurd to expect beautiful flowers to spring from a mixture of brick ends and builder's refuse, and unless there is a thorough foundation of good loam in vain for healthy growth. Bedding

then becomes a worry, money is thrown away, and nothing presented to view except marked by ill-health, but all these discomforts are in nice cases out of the soil the outcome of insufficient preparation of the soil. When not made up of refuse it has often been undisturbed for many years and become sour, unfit entirely to support beautiful flowers. Thorough trenching of the ground will be necessary, not, however, bringing to the surface any of the crude clayey material, which plants do not relish. When the digging is finished, if possible, let the soil remain rough



Flowers in simple bunches.

for a time, so that rains and the air may set upon it, and bring it into a sweet condition. If the work is done in the winter, one has the benefit of frosts, which is an excellent pulveriser, and it is for that reason the soil is left in ridges in all gardens during the winter. Follow out the same plan in the small plot, and one will be rewarded by plants of finer growth. Another wrinkle is, always as far as possible to get

Good plants to commence with, and much vexation is saved by procuring in the first place the best materials. Of some things, it matters little; a few plants of such things as the Perennial Sunflowers quickly making headway in the poorest soils. Always plant well, not when the ground is sticky, but moderately dry. A great error amongst amateurs is loose planting, and the cause of their plant's ill-health is not obvious until they are pulled slightly, when they easily lift out of the soil. Unless planted firmly, it is hopeless to expect respectable growth, but avoid ramming the ground too hard. The smallest gardens may be made gay with flowers from the time of Snowdrops until the Christmas Roses open their white blooms to the wintry sky, if a judicious selection is made, not necessarily of expensive things. Avoid little heaps of stones, called "rockeries," which are nothing of the kind, but simply heaps of burrs or stones, utterly without beauty and incapable of sustaining plant life through the small amount of soil that the "pockets" hold. As regards edging plants, those for the margin of the beds, read my note in GARDENING, of June 3, p. 196, from which you get the names of the best plants for the purpose. A few other good things are *Daffodils*, *Tulips*, *Hyacinths*, *Crocuses*, and other spring Bulbs, which should be planted in October—the *Daffodils*, if possible, in September. Carnations would succeed well near the sea, and you might plant now for the summer *Tuberous Begonias*, *Pelargoniums*, and other summer bedders, just to give a little colour until the autumn. Put in also some early-flowering *Chrysanthemums*, good bits of *Michaelmas Daisies*, and Perennial Sunflowers to bloom in the autumn. I can also recommend besides the above a variety of the *Sneezewort* named *Achillea mongolica*, with large, pure white flowers produced in summer; *Adonis vernalis*, spring flowering, yellow; *Peruvian Lily* (*Astrovermeria*), *Anemone japonica*, and the white variety, give free-blooming plants in early autumn, the flowers large and white in variety but rose-coloured in the type. *Aquilegia glandulosa*, *Campanulas* in variety; the yellow-flowered *Coleopsis laucolata*, *Perennial Lark-spurs* or *Delphiniums*, the *Lyre-flower* (*Dielytra spectabilis*), the *Fraxinellas*, white and purple rose, *Doronicums*, *Erigeron spicatum*, *Gypsophila paniculata*, *Day Lilies*, *Evening Primroses*, *Herbaceous Ploxes*, and the beautiful trailing kinds, *Saxifragea* variety, *Rudbeckia speciosa*, *Sedum spectabile*, *Globe-flowers*, *Herbaceous Lobelias*, the varieties *fulgens* and *Queen Victoria* in particular, the leaves deep glossy chocolate and the flowers brilliant crimson; Tufted Pansies, Lilies, *Rudbeckia* variety

if the soil is deep and not too sandy, *Iris*es of many kinds, and such shrubby things as the beautiful *Fuchsias Riccartoni*, which I have often seen in superb flower near the sea; the *Rose Acacia*, selecting a not too exposed spot; *Eacilonia macrantha*, which succeeds well by the sea, the leaves deep-green and the flowers crimson. *Hydrangeas* would thrive, I should think, and many more things than those enumerated here. But you must read carefully GARDENING, as from time to time selections are given, and any good plant recommended may be added. See what kinds of things do well in other places. The finest lot of *Lilium chelodonicum*, the scarlet *Martagon*, I ever saw, was against the sea, near Soerborough, and it is surprising also how well annuals thrive if the position is not too exposed. This is a comparatively small list, but sufficient have been mentioned to give you a good start. C. T.

— Seeing that the whole of the space is surrounded with trees or hedges, near which nothing will grow, owing to the ground being full of roots and partially shaded as well, you cannot do better than have a walk all round, and fill the centre with flowers and a few choice low-growing flowering shrubs and Roses. The walk may be five feet wide, and then you will have space enough left to make the centre a very interesting feature. You will have room enough to grow a few good varieties of *Delphiniums*, *Michaelmas Daisies*, *Panicles*, *Campanulas*, *Lilies*, *Gladioli*, *Gorman Irides*, &c. Other interesting herbaceous plants will be found in *Spiraea Aruncus*, *Inula glandulosa*, *Eryngium amethystinum* (*Sea Holly*), *Everlasting Pea*, *Phlox* in variety, *Pyrethrums* (double and single), *Rudbeckia Newmansii*, and many others. Some pretty flowering shrubs will be found in *Hypericum patulum*, *Oleari Haasti*, *Althaea frutex*, *Daphne Mezereum*, and *Karria japonica*.—J. C. C.

HOUSE & WINDOW GARDENING.

SWEET FLOWERS IN SIMPLE BUNCHES.

ONE of the many good reasons for having one sort of flower in a bunch by itself is that it is so easily thrown out and renewed when its first freshness is gone. The White Pinks, as shown in the engraving, are just placed in the glasses as they were picked in the hand, giving the least possible trouble. An elaborate arrangement that takes some time is often put off till the flowers are beyond beauty both for sight and smell—a matter worth remembering in high summer-time, when flowers fade as quickly as they come.

WINDOW BOXES IN SUMMER.

IN arranging a window-box, it is well to consider the aspect in which it is to stand, and also whether the surrounding atmosphere be that of a city. *Tuberous Begonias*, which are now amongst the most favourite plants for a window, do not grow well in London smoke, although they will make a magnificent display if the air be pure. *Tropeolum* of various kinds are most suitable for town boxes, for they are not particular as to this, and their specially bright clean-looking foliage and brilliant blossoms make a bright hit of colour, very refreshing amidst the masonry. *Tom Thumb Tropeolum*, with carmine blossoms, look well with an edging of bright-blue *Lobelia*, and a line of *Marguerites* behind them, the clear red, white, and blue being very harmonious. This selection has also the merit of being extremely cheap. Taller *Nasturtiums* may be used to climb up the sides, meeting in an arch at the top, or *Tropeolum canariense* (*Canary Creeper*), with which few creepers can compare for quick growth and elegance. Ivy-leaved "Geraniums," of a clear pink tint, carefully avoiding those of a magenta hue, are very suitable for trailers in the front of a window-box, especially if they are placed alternately with plants of *Saxifraga sarmentosa* (*Mother o' Millions*), which form a most beautiful fringe of rich-bronze foliage, hanging 2 feet down, on which the bright blossoms of the *Pelargoniums* are well set off. The lovely plant (*Saxifraga sarmentosa*), with delicate lace-like, white blossoms, is not nearly so common as it should be; it is invaluable for many positions, such as baskets, rockwork, &c., as well as window boxes. Another good trailer is *Moneywort*, with long straight fringe, covered with

golden-yellow flowers. This, too, alternated with the Saxifrage, is singularly beautiful, and the back of the box can be filled in with handsome purple Petunias, contrasting charmingly with the golden-yellow fringes, with Pink Pelargoniums, while Zonal Pelargoniums are suitable for the back row, or White Fuchsias. No other red flower should be used, if possible, if the effect is to be thoroughly harmonious. Where Tuberosus Begonias can be used, it is well to select those of a red tint, so they blossom at least a month earlier than the paler varieties. "Habit" also should be considered—i.e., the shape and size to which the plant grows, for some Begonias are of a tall, straggling habit, very unsuitable for a window box, while others, with neat shape, covered with rather drooping blossoms, are just as perfect. In the list of our best Begonia-growers may be found a selection of plants especially fitted for "basket" work. These are excellent too for a window-box, and few plants are so satisfactory, unless, indeed, the aspect be a very hot, dry one, when their foliage is apt to suffer. *Nisrembergia gracilis* makes a most suitable fringe for the front of a box full of Begonias, or the useful Mother o' Millions may be used. For creepers at the sides, which can be trained on string, strained between rather long nails, with good effect, for it is scarcely visible, *Lophospermum scouandans*, a handsome Vine-like plant, with large pale-pink flowers, or *Tropeum* "Fire-fly," an intense scarlet blossom with dark foliage, may also be selected. *Casary Creeper*, *Major Convolvulus*, or *Eccremocarpus scaber*, too, are all satisfactory in this position. In a north aspect Ivy should be permanently trained up the sides, and English Ferns should be grown in the front of the box, leaving room behind them for a row of brilliant scarlet Zonal Pelargoniums, which can be brought on in a south window until they are a mass of bloom, lasting for some weeks when plunged in a north window-box. When, however, these Pelargoniums go out of blossom, they can be taken out, given a rich top-dressing, and set again in a sunny window, while their places are taken by a second set of Pelargoniums or other plants. *Calceolarias*, *Fuchsias*, and many other flowers do well for a few weeks here in the height of summer, if well grown in pots, and plunged to the rim. All window-boxes must be well supplied with water and good compost, this being renewed each spring. Liquid-manure too, once or twice a week, will help the plants when the box becomes full, for they have little room for their roots, and the hungrier plants are apt to starve the rest. Window-boxes need to be thickly planted, gaps of 4 inches or 5 inches being usually sufficient between the plants, and they should receive a mulch of rich compost over the surface whenever the plants appear to need more soil. Vigorous growth will thus be secured, especially if the plants are thoroughly watered every day.

f. L. R.

FUCHSIAS FOR A WINDOW.

THESE beautiful plants, which have for some years been somewhat neglected, have lately become more sought after, and are now largely used for bedding purposes as well as for specimen plants. Few plants are more suitable for cultivation in a window, but they must have plenty of sunshine, as well as air, and a low window suits them best. They are almost continual bloomers, if well supported, only needing to be slightly cut back, and given a small shift, with light, rich soil, good drainage, and plenty of water, to throw out a fresh mass of blossoms many times during the summer. Their chief enemy is thrips, which is apt to attack their foliage if they are kept too dry, or need more nourishment than they can get. Directly the tiny black and white spots which indicate this insect pest appear on the under parts of the foliage, they should be sponged off with soapy water, and if this course is persisted in for a week or two the enemy will soon disappear. The plants should, at the same time, be repotted, or, if in full bloom, supplied with soot-water or other liquid-manure twice a week, when they will recover their strength and throw out fresh growth. Some of the best of the new varieties are as follows: *Countess of Aberdeen*, pure white, rather dwarf; *Shirley Hibberd* with handsome dark blossoms, double; *H. McStainley*, brilliant-carmine, with purple centre; *Dorothy Fry*, semi-double, white and crimson; *Miss*

Lizzie Vidlor, red and mauve, very fine. Many of the older varieties are also well worth growing, and these are very cheap either in small pots or as cuttings. *Fuchsia* cuttings will grow well in a window if given sandy soil, pure sand, or even in a bottle of water. They must never be allowed to want water (if in pots), and are best grown in a cutting-box, which insures damp air, unless grown in water only. A "cutting-box" is easily arranged by procuring a common deal box about a foot deep from the grocer's, and placing in it 3 inches or 4 inches of fine ashes. Having placed the pots containing cuttings in the box, water the ashes from a rosed watering-pot, and cover the whole with a piece of glass. If this should be broken or in two or three parts, all the better, as it is then more easy to supply the light ventilation the cuttings should have. The glass should be removed each morning, wiped, and replaced, all falling leaves or decay of any kind being carefully removed, or they may rot up mildew, and so destroy the young plants. As these become established and begin to grow the glass should be removed gradually, and the little plants placed in small pots as soon as rooted, with leaf-mould, loam, and sand. By means of turning the plants constantly and cutting the points back into shape, handsome plants may be secured, which will need frequent repotting, according to their growth and strength.

f. L. R.

FOXGLOVES AND FERNS FOR THE DECORATION OF ROOMS.

THERE are few more magnificent plants than well-grown Foxgloves, and when the white variety (*Digitalis alba*), or still better the handsome Spotted Foxglove (*Digitalis maculata*), are selected for cultivation, we can hardly have too many of them. Seed sown now will bring plenty of plants for next year, and these can be placed in flowering position out-of-doors, either in October or during the following March. But

but they should not be exposed to too much sun, rather preferring a shady place, and they need good rich soil. They should not be removed to the house until the first few blossoms are open, when they will do well in a window, especially if plenty of air be afforded them. For a balcony or verandah, few plants are so handsome, and they can be induced to throw up a quantity of shorter racemes of blossom later in the summer, by means of cutting the central spike directly it has done flowering, and removing all seed-pods as soon as the blossoms fade. To group with these plants, there is nothing so good as English Ferns, which can also be grown out-of-doors throughout the year. An area is an excellent place for these Ferns, for they enjoy the cool shade there without draughts or direct sunshine. English Ferns have of late years received the attention which is their due, for there are many handsome varieties amongst them, and a few such as *Hart's-tongue* (*Scolopendrium vulgare*) and the beautiful little *Devonshire Fern* (*Asplenium Adiantum-nigrum*) are evergreen, forming excellent decorative plants in winter also. The *Lady Fern* (*Athyrium Filix-femina*) and several of the *Laetrea* group, with the commoner *Male Fern* (*Laetrea Filix-mas*) are very suitable for grouping with Foxgloves in a room. They should be grown in separate pots or boxes if possible, or a few of the smaller varieties may be placed with the plants of Foxgloves in a good-sized box. Drapery of a rich tone, such as crimson or maroon, will look well to hide the box or pots, and the whole effect will be singularly elegant.

f. L. R.

FERNS

ASPENIUM FLACIDUM.

THE plant here figured is one of the forms of *A. flaccidum*, which is one of the most variable Ferns with which I am acquainted. The figure here given is taken from a specimen sent home



Asplenium flaccidum odontites.

those who have no garden may still cultivate Foxgloves in large pots or boxes containing a group of three or more plants, for they are hardy, only requiring slight shelter (for the sake of their handsome foliage, which is sometimes injured) during the severest winter weather, when the plants can be lifted into an out-house, or covered with boards, or a piece of matting raised a little from the leaves by means of sticks or stones. Any place out-of-doors, even the leads of a town-house, where not too smoky, will grow Foxgloves,

from New Zealand, its native country, so that no modification has come about through cultivation. The common form of *A. flaccidum* in English gardens produces long pendulous fronds some 3 feet or more in length, the pinnae being distant, narrow, some 6 inches long, deep-green in colour, and viviparous. It is well suited for growing in baskets in the greenhouse. The form, however, now under consideration is quite unsuited for basket purposes, being erect in habit, and thick and leathery in texture, thus proving that, in spite of what may be said

to the contrary, such a variation deserves a distinct name for garden purposes. The form in question was a few years ago common in cultivation; it is an evergreen greenhouse plant, well adapted for a nook in the rockery, and being so different in habit to the pedunculate form, it may with perfect safety be planted in juxtaposition with it. As a pot plant this form is not one of the most attractive *Ferns*, its rigid habit being against its forming a graceful specimen, but when potted out it is a very charming subject, and well deserves the attention of all readers of *GARDENING*. W.

ORCHIDS.

CATTLEYA SCHROEDERIANA.

IN a brief note from my whilom acquaintance, "Humphrey Clinker," comes a flower of this rare plant, introduced about ten years back by Mr. Sæder, and thus named by Reichenbach, although since it has been reduced to a variety of *C. Walkeriana* by some authors, the last-named plant being found by Gardner in Mirias Gerais, in Brazil, some fifty years ago. This Orchid is said to be spread over a wide area, but I am of opinion that there has been far too much lumping of plants together, and far too little notice or thought taken of its habit and style of growth, &c., and various plants which resemble *C. Walkeriana* in wanting the side lobes to the lip are all classed with it. My friend "Humphrey" does not say whether his plant flowers upon the same growth with the leaves, but from the appearance of the flower I think it does, and, if so, it is the plant named above; but *C. Walkeriana* does not, but it makes a separate growth, which alone bears the flowers, and which dies soon after the flowers have faded. *C. dolosa*, which is classed as a variety of *C. Walkeriana*, produces its flowers upon the same growth as its leaves, whilst *C. sibirica* makes a separate growth, but its flowers are larger, and the side lobes of the lip are large enough to entirely cover the column, with the edges reflexed, and the same thing occurs with *C. dolosa*, whilst in *C. Walkeriana* the side lobes are reduced to half the ordinary size, and in the flower now before me they are merely small appendages, and these differences incline me to the belief that far too much lumping together has been done. However, "Humphrey" having got this plant will wish to keep it, and if it is what I take it to be, it is extremely rare and is worth taking every care of. If he has it in a pot it should be kept just damp through the winter months. It should be kept in a temperature which does not fall below 60 degs., and it must not be allowed to suffer from want of water, because it cannot withstand unheralded either an excess of cold or an over drying. I myself should prefer block culture for this Orchid, but more care is then necessary to keep the plant properly supplied with all it requires. I should like to know from friend "Humphrey" if my surmise is correct—that the plant sent out flowers from the top of the shoot-bearing leaves. MATT. BRAMBLE.

THE BLUE VANDA (V. CÆRULEA).

THIS species, whenever or wherever seen, is always a favourite, even although not of the best blue variety. Such was the case upon the present occasion, when "Sneas Miles" writes, telling me that she saw a plant of this at the Temple Show, exhibited by the Messrs. Lewis, of Southgate, and she thought it charming, and she wants to know where she can get one, where it is from, and how she can manage it? It is now over fifty years since this species was first seen in the Khasia Hills by Griffith, and whenever seen it causes the heart to glow with a desire to possess it; but when obtained there is usually found some difficulty in its management. When Griffith found this plant first, he tells us in his "Itinerary Notes," it was in the month of November, and the climate was really delightful, reminding one much of England, which, however, I should imagine was not England in the month of November, for then it is not usually very delightful. It blooms in its native country soon after the rainy season, which is about the end of September or the beginning of October, and it is in the late autumn it usually flowers, with or under cultivation, so that "S. M." who does not care to visit flower shows at such a distance

has not before had the opportunity of seeing it, for the plant referred to as shown by the Messrs. Lewis was quite out of season. I heard the other day from a celebrated Orchid grower that he had just imported a fine lot of these plants, so that there will be ample opportunities of getting the species, and now for the best means of growing it. Well, there are two sources for this plant, I am told, the first is already named, and from this source I have myself had many hundreds sent to me, but I cannot say that anyone of these turned out a very first class variety, but the Messrs. Low and Sons, of Clapton, and Mr. Sæder, of St. Albans, have been fortunate enough to import some very fine forms, having great breadth of sepals and petals, and of a fine rich blue colour, and these, I am told, come from the Burmese territory. Naturally it is an Orchid that is exposed to great deal of rain, sunshine, and wind, and even in the cool season to frost, so that it appears to be a difficult plant to accommodate in the Orchid-house at home, and to treat in anything like a natural manner, but I have seen it do best and flower most profusely when grown in a hanging-basket, in an ordinary stove-house, near the roof-glass, but near an open ventilator, so that there was a constant supply of moisture rising from the plants below, an abundance of air, and a full supply of sunlight to allow of its revelling in; but care must be taken and not let the leaves get herded with the sun. It must be remembered the plants have a glass covering, which they have not upon their native hills. In the winter season they should be reared in the Odontoglossum-house, and at no time during the growing season should the temperature exceed 85 degs., and at this time the night temperature should fall 20 degs. or 25 degs., so that it will be seen that at no season is an excessive heat necessary; and this often puts me in mind of my old master's saying when a boy. He had bought a lot of imported *V. cœrulea*, placed them in the hottest part of the East Indian-house, keeping them constantly very wet; but as this was in the early days of its introduction, we then know nothing of its natural surroundings—knew absolutely nothing of cool Orchids, and even now that we do know we yet have a difficulty in keeping this plant very long in a good state of health. But my friend "S. M." should invest in a few plants. They are not now expensive, and if she succeeds only for a few years with them she will reap her reward. MATT. BRAMBLE.

DENDROBIUM AMENUM.

FROM "Gerald Walker" come flowers of this plant for a name, which I here give, and as it is a very pretty kind and a very free bloomer, I will call my readers' attention to it, more especially as it is a species that grows and does well in a low temperature. It is a plant which has been known for upwards of sixty years, but which never reached this country in a living state until about twenty years ago, when it appeared in Mr. Bull's nursery at Chelsea. Some plants of this kind were shown at the recent Temple exhibition, but they were in a poor state, and not well done, certainly not in such a condition as to induce an amateur to take up with it. The plant grows on the Himalayas at some 5,000 feet elevation, so that it may be placed in the warm end of the Odontoglossum-house for the greater part of year, but in the growing season it requires more sun than those plants, and therefore may be removed with advantage to the Cattleya-house or an ordinary stove; but after the growth is finished, it should be placed in a light spot in its usual abode, and less water given it; but I do approve of subjecting this plant to severe drying, for this would subject the slender stems to extermination, and instead of their producing their brightly-coloured and very fragrant flowers, produced usually upon short spikes two and three together, but sometimes singly. MATT. BRAMBLE.

The Moccasin-flower.—The North American Lady Slipper (*Cypripedium spectabile*) is one of the finest of hardy Orchids, and not difficult to grow either if the soil and position are suitable. It grows 18 inches in height, and has large, charming coloured flowers, much more attractive than half the tropical and island *Cypripediums* that need a stove for their

culture. The Moccasin-flower is white as regards the sepals and petals, and the lip or pouch, as it is called, is bright-rose, the colour varying in shade in individuals, sometimes almost crimson, and again white without a trace of any tint, whilst the leaves are bold, vigorous, and of a good green shade. It may be grown in pots, and is pretty in the greenhouse. The soil must be a mixture of peat and loam, not too heavy, and good drainage is necessary, also shade. A hot sun is hurtful. In the open the Moccasin-flower thrives perfectly well in a moist, almost boggy, corner, where the *Trillium* thrives. In such a spot, sheltered from keen winds, strong sunshine, and perfectly cool, the plants make good growth. It is a pleasure to see this beautiful Lady in full bloom in the open.—V. O.

British Orchids.—In reference to collecting these plants, our good old friend, "Matt. Bramble," on p. 197, says "The plants must not be taken up now;" in which statement he is both right and wrong—right as regards the careless collector, for whom no time is right, but wrong as regards the true plant-lover, who is always tender and careful in handling his pets. For the latter the best of all times to collect the British Orchids is when it is in flower; then a selection can be made of such varieties as please and the remainder left for someone else. The method that will ensure success is to cut round the plant with a strong blade (a table-knife is an effective instrument) of your pocket-knife, about 2 inches from the stem, and 4 inches or 5 inches into the ground, then lift the plant without breaking the ball, and it will look exactly as though it had been turned out of a 4-inch pot, and will travel well without the plant flagging in the least. Last June I collected several specimens in flower in the manner indicated 200 miles away from home, which were not planted for a fortnight afterwards in the quarters they now occupy, and where they are in full flower.—T. L. C.

SOWING BIENNIALS.

THIS is the time to sow seeds of many beautiful flowers that require a longer season of growth than annuals. The following are especially deserving of culture: *Alyssum saxatile* compactum succeeds well treated as a biennial, although it stands good for several years. Sow at once and transplant as soon as large enough. Its rich-golden head of flowers is very striking. *Antirrhinum majus* (Snapdragon) is a fine old plant that makes a grand display in mixed borders. Canterbury Bells are amongst the finest of tree biennials; sow in beds and transplant in autumn to their flowering spots. *Digitalis* or Foxglove, a stately plant, looks well in beds of shrubs or towering above hardy *Ferns*. Forget-me-not, one of the most lovely flowers in the garden; sow at once and transplant at any time in beds, borders, or edgings. Heartsease or Pansies, although increased in many ways, are best treated as a biennial; sow now in a cool, shaded place, and as soon as the seedlings are large enough transplant. Honesty (purple and white), is valued for its early display of flowers, and especially for its silvery seed-pods that are very valuable for decoration; should be sown at once. *Silene* compacta, with its rosy-pink mass of bloom, is very valuable for spring bedding; sow in August. Stocks (Brompton), that are the glory of cottage gardens, should be sown now and pricked out in a sheltered place before winter. Wallflowers (single and double) in distinct colours are each general favourites that no garden is complete without them. If not already sown do not delay, or the plants will not have time to get strong before winter. J. O., Gosport.

Spiraea aristolobea.—Although not so well or so widely known as its near relative, *Spiraea japonica*, this is in reality a most lovely flower, and when it becomes better known will, I feel sure, enjoy as wide a popularity. It requires similar treatment—viz., rich soil and abundance of root moisture, as drought in any stage of its growth is fatal to it. As a decorative plant it is of the highest value, as large plants can be grown in small pots, and the spikes of bloom are much longer than in *Spiraea japonica*, and the foliage larger and more spreading. Do not think it is so well adapted for early

forcing; in fact, I value it more for coming in after *S. japonica* is over. Potted up in winter and kept in a cool-house, it will be in full bloom about the middle of May, and anyone not having yet given it a trial should include it in their list for next year.—J. G., *Hants.*

FRUIT.

VICOMTESSE HERICART DE THURY STRAWBERRY.

It is to be deplored that so useful and generally excellent a Strawberry as this is should have such a very long name. I think if it were generally written of as "Vicomtesse" only, everybody would recognise it fully. It is not generally known that many years ago, when the late Mr. Thomsen was at Chiswick, he, on the instruction of the Royal Horticultural Society, paid a visit to the French Strawberry gardens and brought over to Chiswick plants of a number of the best varieties. Of all these, the one now mentioned is the sole survivor and affords another illustration, if such were needed, of the undoubted fact that of all the seedling

no breadth endures longer than two years. A short life and a merry one for Strawberries seem to be Mr. Norman's motto at Hatfield. Certainly, he states that the soil there will not produce a good crop the third year, and it is rare anywhere that it pays to allow plants to stand longer when really fine fruits are needed. That in some deep holding soils breadths kept clean and heavily mulched with manure will endure for several years and produce fine crops is certain. Elton Pine will do so, as I have found even in soil that was far from being rich, and give a wonderful lot of fruit for ordinary use and preserving. The plan adopted at Hatfield with Vicomtesse naturally necessitates the putting out of large quantities of runners to cover a given area annually, but then there is the undoubted advantage that every part of the ground is at once fully occupied. After all, the chief consideration is how can the finest fruits be secured? That is an element in Strawberry culture which requires especial prominence.

3930.—Seedling Grape Vines.—With-out the berries from which the seed was obtained

young wood made the previous year, and whether it has had a chance to ripen well. Some Grapes, such as the Muscate, Alicante, and Gros Colmar require quite a hot-house temperature to ripen the young wood and the fruit well, and seedlings from them would do no good in a greenhouse. Black Hamburg and the Muscade Grapes ripen well in a greenhouse, and seedlings from such would have the same character. The only chance to obtain fruit upon the seedlings will be to encourage good strong growth, and expose it well to the sunlight.—J. D. K.

—The probable cause of the seedling Grapes not fruiting was unripe wood. Seedlings would require more ripening than old-established Vines. A little fire-heat would have made a great difference. Keep the young growth stopped back this season, and do not prune too hard when the leaves fall, and they will fruit next year.—E. H.

CULTURE OF MONSTERA DELICIOSA.
The house described by "S. R." should suit the *Monstera* very well. The main elements of success in the culture of this tropical fruit are heat, light, and moisture, and, provided these necessary conditions be one and all supplied, success will be ensured. Any form of training may be adopted which will bring the plant well up towards the glass. It may be made to cover a portion or the whole of the back wall trellis, or, what is preferable, it may be trained round forked tree stumps, a system which suits it admirably. It may also be grown in a tub, but I should prefer planting it out in a good body of fibrous peat and loam in equal proportions, which should rest upon a good drainage of brick rubble. Thus placed, unlimited supplies of water may be given in hot weather, and the fruit will be fine in quality and abundant. Although the *Monstera* will thrive in a low temperature, it will not develop its true character as a fruit-bearing plant, unless a brisk growing heat be maintained during the spring and early summer months. Other plants should not be permitted to crowd it, or in any way obstruct the light from it, and only just enough shade should be given to prevent scorching.



Monstera deliciosa.

3910.—Fruit-trees against a north wall, &c.—Morello Cherries succeed the best of any fruit against a north wall, and almost any kind of Plum will flourish there too, if I except Washington, which is rather a shy cropper against any wall but that with an eastern exposure. Red and White Currants succeed capitally, and will hang much longer there than on the open bushes. In many gardens a few trees are usually planted in this particular spot with a view to lengthening the season of these fruits. Gooseberries may also be satisfactorily managed for the same purpose as the Currants. One of the best kinds for late use is Warrington, more commonly called Rough Red. The skin being tough, the fruit will hang long after any other sort, and really improves in flavour with keeping. Gloire de Dijon is far and away the best Rose for an east wall. Aimée Vibert, the Yellow Bankian, and the China Rose, of which Cramoie, Supérieur is the best, succeed really well. As regards climbers, many kinds will flourish against an east wall. For quick growth and a dense covering, there is nothing like Irish or Ragneriana Ivy. Ampelopsis Veitchi gives an abundant leaf crop, but is deciduous during the winter. If in the south, Escallonia macrantha, Ceanothus divaricatus, and Garrya elliptica will stand almost any winter. Sweet Jessamines, Honeyuckles, and Clematis Jackmani will flourish anywhere. Good soil and abundance of moisture at the roots during hot and dry weather are the essentials to success.—S. F.

—Morello Cherries and hardy cooking Plums are the most profitable trees to plant against a north wall. The spaces between the fruit-trees may be filled temperarily with Red and White Currants. Plant in autumn. Such hardy Roses as Gloire de Dijon, William Allen Richardson, Cheshunt Hybrid, and Jaune Desprez, will do very well against the east wall. Other climbers suitable are Ampelopsis Veitchi, Cotoneaster microphylla, Jasminum nudiflorum, Honeyuckles in variety, Pyreantha (Evergreen Thorn), Pyrus japonica, and variegated Ivies.—E. H.

—Morello Cherries and Black Currants are almost the only kinds that do really well on a

Strawberries put into commerce during the past twenty-five years, very few have been found qualified to out older sorts from popular favour. The Vicomtesse still remains one of the most popular for pot culture; perhaps of early kinds it is the one most widely grown for forcing. It sets freely, is fairly easily managed, produces when the trusses are duly thinned very good-sized fruits of fine form and rich colour, and though not first-class, is perhaps one of the best-favoured of all early forced varieties. With respect to outdoor culture of this variety, Mr. Norman, of Hatfield Gardens, strongly admires the variety, preferring that and Sir Charles Napier to any other two sorts. He treats the Vicomtesse largely as a biennial, for he selects all the best runners not required for forcing and plants them in good, deep, well-manured soil so thickly as 12 inches apart all over. The breadths are kept well hoed, and in the late spring are well mulched with long manure litter. Then the fruits after there has been a good set are hard thinned down to a mere few to each plant, and thus a very fine crop is ensured. So soon as fruiting is over, three-fourths of the plants are cut clean out, and the rest have ample room to develop that season into fine clumps. The following year they crop heavily, then are cut out and the soil

were fertilised with some good kind, most likely the seedlings named will be useless. Raising Grapes from seed is a risky business, and one seldom practised. If "G. L. Butler" persists in growing those now in hand I should advise that they be placed in large pots with a view to cramp the roots somewhat to induce them to give a bunch or two to prove their worthiness of further trial. Vines growing in pots require abundance of moisture at the roots.—S. F.

—Seedling Vines are generally several years before they bear fruit; but, of course, a good deal depends upon the treatment they receive. If skilfully managed they would bear fruit earlier. When I was interested in this subject I used to graft the seedlings on the spurs of established Vines, and they invariably bore fruit the next year. Amateurs, of course, cannot do this. I am afraid there is nothing else for you to do but wait. Meanwhile, do not encourage the seedlings to grow too vigorously, and keep the lateral growth pinched back close.—J. C. C.

—Seedling Orpington Vines fruit as freely as the ordinary named varieties when they have grown strong enough to produce thick well-ripened growths. The fruiting or non-fruiting of Vines depends upon the character of the

north aspect. Some Plums will fruit fairly well, but as a rule the fruit is both late and extremely acid. On an east wall you may plant Gloire de Dijon, the Boursault, and many other Roses, Psefifora aculeata, and P. Constance Elliot (white), Clematises in variety, the Fiery Thorn, and, in fact, almost anything will do well, especially if protected a little on the north by trees, shrubs, or buildings.—B. C. R.

—The Morella Cherry and Victoria and Golden Drop Plums do well on a wall with a north aspect, and so does that well-known Apple, Lord Suffield. East walls are not the best aspect for Roses, as they are very liable to be attacked with mildew in such a position. Gloire de Flijon will do as well as any. Sir Joseph Paxton, rose, and Almés Vibert, white, are also hardy and free-flowering. Amongst other suitable climbers I may mention Clematis Jack-mani, White Jasmine, and Iponeysuckles.—J. C. C.

3920.—Treatment of Peaches.—The young shoots which break away from the current year's wood are termed laterals or sublaterals, and they should be pinched back to one leaf when quite young. But if the trees are young, and there is wall or trellis space to cover, train some of the best of them. There will be time enough to get the wood ripe, and it will tend to equalise the flow of sap, and reduce the strength of the leaders.—E. H.

—What "Anxious" terms successional shoots are usually known as laterals; they should be pinched back to one joint. If the shoots are numerous, and these with laterals as thick as the small finger, I should advise their removal to make room for those of the size of an ordinary Cedar pencil. This latter is a fair size for Peach-shoots to give a full crop of fruit the next year. Extra strong growths do not give much fruit, often none at all. The main point in Peach culture is maturity of the wood; this cannot be secured if the shoots are overcrowded. A space of 4 inches should at least be allowed between the current season's growths. Do not stop the leading shoots if the growth all over the tree is pretty well balanced, but if it is not these strong shoots should not only be stopped, but if depressed they would be all the better, as the flow of sap would be all the more equalised over the tree. The strong shoots may be the result of giving too much manure to the roots or these latter may need checking. The month of October is the best season for that detail to be carried out. Root pruning means covering any strong fibreless roots that have rambled away some distance from the tree. Pruning them within 3 feet of the stem will force them to make fibre, which are really the feeders. Do not supply any kind of stimulative food; clear water is sufficient. Keep the foliage free from insect pests of any kind by timely syringing with soapy water.—S. P.

—The production of lateral growths so freely show that the trees are in good condition. There will be time enough yet for such growths to form blossom-buds. The leading point in their culture is to thin the shoots out well, so that they are not overcrowded, and do not stop the small or slender growths, for they are usually so studded with flower-buds that the only leaf-bud is that produced at the point of the young wood, and if this is cut off the growths will die back. The very strong shoots ought to be stopped, and they will at once produce laterals, which must be treated as advised above.—J. D. E.

3936.—A lean-to Peach house.—The description points to a bad attack of aphid, for which the best remedy is Tobacco, either in decoction or powder; but if this were the case you could scarcely help seeing the insects, and no mention is made of any. I can scarcely imagine it possible for trees to get into such a condition without the agency of insects, though, as even the normal leaves are yellow and mottled, the roots are evidently unhealthy as well. Do the trees get enough water? These are moisture loving subjects, and the weather of the last three months has been most trying to such. Peaches are often planted in a far too light soil, and overdrained, whereas they thrive best in a damp and moderately stiff material. Here the soil is a strong loam on a clay subsoil, yet Peaches planted without any drainage whatever thrive wonderfully, and unless attacked by

insects make a very vigorous and healthy growth.—B. C. R.

—The trees appear to be in a most deplorable state. Removing them in the autumn and replacing with others that are healthy seem to be the most satisfactory method of bringing about better results. In the meantime they might possibly be improved by attention. Dig down to the roots and see if the soil is too wet or too dry. If the former, withhold water until a change is effected in the soil. If it is dry give several thorough soakings of clear tepid water. Do not syringe the trees for a few days until signs of improvement take place if the border should be found in a wet state, providing, of course, the leaves are not covered with red-spider. To that case give the trees a thorough drenching with water overhead, applied with force through a hand syringe. Place a handful of sulphur in a 3-gallon can of water, thoroughly wetting every leaf. Repeat this four times a week in the evening, on other nights use clear water. Should the young leaves be infested with black-fly dip the points of the shoots in a strong solution of Tobacco-water, well washing them with clear water next morning. Ventilate freely when the weather is favourable, avoiding draughts of cold air. If "Percicus" decides to replace the trees with new ones I would advise him to that point later on in the year, say September.—S. P.

—There is something very wrong in the treatment of the trees referred to in this inquiry, and it is very probable that that something is dryness at the roots; at any rate, the information supplied points in that direction as one of the causes of failure, and the description of twisted and distorted branches further proves that the mismanagement has been going on for some time past. Nor are the trees so free from insects as the querist seems to suppose, or the foliage would not be crinkled and bunched, as it is green-fly that is the cause of these distortions. I advise "Percicus" to make up his mind to destroy all the trees in the autumn, and after taking away the old soil and putting fresh in its place to furnish the house with other trees. Meantime, give the present trees sufficient attention to ripen what few fruits they are carrying. I must, however, remind you that ordinary young trees would not have died so quickly if they had been well managed, and, therefore, if you do not improve the management you had better not make any further attempt at Peach-growing.—J. C. C.

Strawberry "Noble."—How well this fine variety (barring the flavour) has withstood the intense drought and heat! Some plants at one end of a long bed planted with various kinds present a marked contrast to the rest, being laden with fruit, while on the others there is scarcely any. This is on a strong clayey loam, and even on light dry land on the opposite I have seen this variety heavily laden with fine fruit, so that it seems to thrive on any soil. In pots under glass it has also fruited better than any other variety.—B. C. R.

CHRYSANTHEMUMS.

BOUQUETS AT CHRYSANTHEMUM SHOWS.

How seldom do we meet with a really good bouquet of Chrysanthemums at the autumn exhibitions. It is surprising how content some exhibitors are to go on year after year in the manner of arrangement of the flowers. Nine out of every ten of the bouquets exhibited outside of the regular trader are simply a mass of Chrysanthemums and Ferns huddled together without any regard to selection of colours or taste in arrangement. The main aim appears to be to see how many blooms can be crammed into a 15-inch space, that generally being the limit allowed for the diameter of each bouquet. Another aim appears to be that of so placing the flowers that not a single floret shall stand outside of the line of its neighbour. Some exhibitors arrange very carefully one large yellow incurved bloom in the centre, making the next row quite even all round with perhaps a rose or lilac colour. How often do we see blooms of the large flat-bone section employed for bouquet-making. Instead of the lumpy incurved blooms and the

stiff Anemone flowers, why cannot exhibitors use more freely such elegant varieties as Source d'Or, M. Garnier, Mme. Lemoine, Avalanche, M. W. Holmes, Mrs. J. Wright, and Bouquet Fait? All the varieties named give flowers of a semi-drooping character, are not heavy in build, but light and graceful when arranged as they ought to be. A few blooms of such bright coloured sorts as Cullingfordi, for instance, when effectively placed do much towards brightening up a bouquet. No variety appears so suitable as Source d'Or for either bouquets, vases, or parasols. The fault appears to lie mainly in two things—wrong selection of blooms and the want of method in preparing the flowers before making up the bouquets. It is surprising what a difference is made by fixing a small piece of wire to the peduncle of the flower. When the flowers are treated in this way they can be placed exactly where wished. There should be no pretence to formality of arrangement; the lighter and looser the flowers are arranged the better they look. The spaces between the flowers can easily be filled up thinly with suitable greenery. Maiden-hair Fern and Asparagus plumosus are both suitable. Every bouquet should have a base of greenery of some sort, nothing being better than the Asparagus named. B.

3927.—Pigeons' manure for Chrysanthemums.—I should prefer to use this manure in a liquid form, after the pots in which the plants are to flower are full of roots, rather than to mix it with the soil in a dry state. Manure from fowls or pigeons is very strong, and when it becomes wet it swells into a much larger bulk, and is liable to burn the roots of the plants when they come in contact with it. To make liquid-manure will be a simple affair. Place the manure in a sack, to prevent its mixing with the water, as in that state it would seal up the pores on the surface for future waterings. When put into a sack, and soaked in a tub, holding, say, 40 gallons of water to every peck of manure, useful liquid can be made. This is a safe and economical manner of making liquid-manure. Given to the plants three or four times weekly, pigeons' manure will prove a good stimulant. If the manure could have been mixed with the loam two months before being used for the final potting, the rank strength would have passed away, and the manurial properties have permeated the soil, but as no time should be lost in potting the plants I advise using it in liquid form later on.—E. M.

The Variegated Hop.—Humulus variegatus, or the White and Green-leaved Hop, is a very pretty addition to the list of climbers or creepers that are now so much in use for covering arbours, arches, trellises, or walls that are so unsightly in villa suburban gardens, but which, by the aid of creepers, may be made to play a very considerable part in the attraction of small gardens. Everyone is familiar with the Common Green Hop, and this one has the additional merit of variegated leaves, thereby giving more variety to the collection, and as it comes true from seed there is little difficulty in getting a stock of it. Climbers of this kind can hardly be overdone, as their graceful, twining habit of growth renders anything like stiff formalism impossible.—J. G. Jants.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruits and vegetables for drawing. The drawings so made will be engraved in the best manner, and will appear in due course in GARDENING ILLUSTRATED.

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London, 27, Northampton Street, Strand, W.C.

INDOOR PLANTS.

LESCHENAUTIA BILOBA MAJOR.

ESQUIRIES come from a "Young Gardener" as to how he shall grow this plant? I am not surprised that its lovely deep flowers caught the eye and caused him to purchase it, for there are not many gardeners now living that remember seeing the grand specimens being brought to the exhibitions at Chiswick by Mrs. Lawrooce, of Ealing; Mr. Green, of Chesham; and many others. These plants were gems of the first water, far exceeding anything that can be grown in a 48-pot. Leschenautias are generally considered hard to cultivate, and I do not think in and about London it would be found possible to grow them, as in my young days, but you, away down in Hampshire, should be able to secure a good atmosphere suitable for them. One of the worst enemies is damp in winter, to avoid which I need to always keep the plants well up to the glass, and to have them placed in well-ventilated houses, so that a constant removal and renewal of the atmosphere was maintained, and unless this is well attended to the shoots will become mouldy and unhealthy. These are soft Heath-like plants, and they do not like to be exposed to the open air during the summer time, or rather, I might say, without some of protection; but if fixed in the summer-time they do like all the fresh air that blows; but their tops cannot withstand any rough treatment, so that I used to have these plants moved into the open air every genial day, and placed under cover again each night. This, when the plants become large, was attended with some risk, so that I had a framework made, which I could run over them at night, and wherein I had some other choice plants, such as Erica Massoni, and some others, and in this way I used to keep them well ventilated, and without ever exposing them to cold currents of air or to wet. They should be potted in well-drained pots, and as much care bestowed upon this as is done with any Orchids, being for soil good fibrous peat, made sandy, potting firmly, soil watering carefully and regularly, never letting the roots suffer for want at any time, nor upon any account to become "sogged" by overwatering. This is particularly to be noticed in the winter, and in dreary, wet, or dull, heavy weather a fire should be lighted, and extra air be put upon the house, having everything in good condition by night. Three of the best kinds are given below, and, when well grown, these plants are lovely in the extreme, and fit for any place or any situation where they may be used without accident: *L. biloba major* (lovely rich bright blue), *L. Baxteri* (of a rich bright salmon-red), *L. formosa* (rich vivid scarlet). J. J.

3909.—**Treatment of Liliun Harrisii.**—When the plants are out of bloom the leaves remain green for some time afterwards, and they must have a fair supply of water at the roots until the leaves become yellow, when dryness at the roots is necessary, else the plants will again start into growth. When they have passed through the season of rest repeat them. I do this in September. The treatment afterwards is to plunge the flower-pots in which the bulbs have been potted over the rim in Cocoa-nut fibre refuse. I protect them from heavy rains and as soon as the plant has pushed out of the ground an inch or two it should be placed in a glass-house.—J. D. K.

— Give plenty of water to keep the growth green till it ripens naturally. This means that the plant should be gradually dried off. It will do very well plunged outside in Cocoa-nut fibre, or even on the border.—E. H.

3918.—**Painting hot-water pipes.**—Mix lamp-black with linseed-oil to the consistency of paint, and coat the pipes over with it, using an ordinary paint-brush, except the evaporating-troughs; these should have two coats of paint; lead or stone colour is best. The continual filling them with water is apt to rust the iron if they are covered with the first-named mixture. If the pipes themselves are coated with any lead paint the pipes do not give off the heat as freely as through the lamp-black and oil.—S. P.

— A mixture of boiled linseed-oil and lamp black is much the best thing for this work. Tar or black varnish is injurious and destructive to plant life.—D. C. H.

— There is nothing better for covering than lamp-black and oil. Anyone can apply it, and it is perfectly harmless to vegetable life.—E. H.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in *GARDENING* free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of *GARDENING*, 37, Southampton-street, Covent-garden, London. Letters on business should be sent to the Publishers. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as *GARDENING* has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by defining, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in *GARDENING* should mention the number in which they appeared.

3911.—**Ferns and out flowers.**—Will someone kindly tell me which are the best-keeping Ferns (other than Adiantums) for mixing with cut blooms?—L. K. S. W.

3915.—**Anemones at Mentone.**—Will someone kindly tell me the names of those lovely pale-pink and scarlet Anemones which grow so beautifully at Mentone, Cannes, &c.?—E. H. N.

3916.—**White Campanulas.**—I am anxious to grow single White Campanulas for greenhouse work. Can seed now be sown? What is the right kind to buy? Do they flower the first year?—S. P.

3917.—**Chrysanthemum seedlings.**—I shall be much obliged if someone would give me a little advice as to the culture of Chrysanthemum seedlings, which are now about 1 inch high?—J. W. P.

3918.—**Good lawns.**—What is the best method to produce good lawns? To destroy weeds without damage to the Grass? Is it to use acid or any similar "destroyer" for the weeds?—G. W. J.

3919.—**Unhealthy Tomatoes.**—I am trying to raise Tomatoes under glass with heat. Very many are going blotchy and black. Would someone kindly inform me in what way I fail?—J. J. SMITH.

3920.—**An unproductive border.**—Will someone kindly tell me what I can do with a hard, stony border, facing south, under Fir-trees and Laurels? Will any sort of flowers do well in such a place?—R. W. H. AINS.

3921.—**Gardens.**—Will someone kindly tell me how to treat Cardoons? I got some seed from France. The plants are about 4 inches high now. Are they to be treated like Celery? Full instructions will greatly oblige.—AMATEUR.

3922.—**Evergreens under Limes.**—I should be much obliged if someone would name the best evergreen shrub for a background to grow underneath Lime-trees? They are wanted to grow to the height of 10 feet. Clayey soil.—A READER.

3923.—**Sulphur for mildew.**—I find putting sulphur on the hot-water pipes is recommended as the cure for mildew on Grapes. Will anyone kindly tell me how to use sulphur for the same purpose in an unheated greenhouse?—LEOPOLD DROWN.

3924.—**Philadelphus microphyllus.**—Can I propagate this with cuttings, or must it be layered? I quite agree with "V. C.'s" opinion of it, as being a most charming small deciduous shrub; the sprays of bloom are naturally formed shoulder sprays.—W. B.

3925.—**Powdery mildew.**—I shall be glad if anyone will tell me what proportion of lime-manure I can put in a 35-gallon tub of water to make liquid manure for Cucumbers and Tomatoes, and is it better than that made from the cow-dung and stable?—DENYHILLER.

3926.—**Moss litter for Mushroom-beds.**—I should be much obliged to any one who will kindly inform me if this moss litter is well adapted to prepare a Mushroom-bed with? And, if so, a few hints how to set about it would be most acceptable.—P. SANDERSON.

3927.—**Fruit-trees and insects.**—My wall fruit-trees are infested with insects, which destroy the fruit before it is ripe. The Peschea, Nectarines, and Apricots suffer most. Will anyone kindly give me a recipe for solution to rysting them to destroy these pests?—W. B.

3928.—**A rusty plug in a boiler.**—I shall be glad if anyone will tell me how I may remove the draw-off plug in my Horse-shoe boiler, which I have inadvertently allowed to rust in? I have tried a wrench, but cannot move it. Will it be necessary to have it bored out?—DREYFUSIER.

3929.—**Carnations, &c.**—Which plants of the Carnation Souvenir de Malmaison—old or young—are the best for winter and early spring blooming? My gardener tells me that the reason the flowers are so small (not much larger than the common Carnations) is that they are young plants.—E. H. N.

3930.—**Malmesion "Carnations."**—Will anyone kindly tell me what to do my "Malmesion" Carnations? The flowers are green and hard in the middle, and the plants are always covered with green-fly. I have a vineery where I keep them in the winter. Is that too hot for them?—M. H. A.

3931.—**Blood as manure.**—As I have the option of having the blood from a slaughter-house I should be glad to know if I could use it with advantage on such plants as Chrysanthemum, Cucumbers, Tomatoes, Vegetables, &c., and what would be the percentage of water to be used with it?—W. SPARD.

3932.—**Allotment garden.**—I have an allotment garden of ten rods in the neighbourhood of Kilburn, which I have just started turling. Will someone kindly tell me whether it would be best for me to burn the turf or let it lay in a heap and rot? Also, what vegetables I could grow this year? The earth is good maiden mould. I have plenty of stable-manure.—BONLUS.

3933.—**Flowering plants for a conservatory.**—Will someone kindly let me know what are the best kinds of flowering plants for a lofty conservatory, where the Palms are grown, also Ferns and Moss on the walls? These are syringed every day to keep them growing. By doing this the plants are always damp. What kind of plants would flower best in this kind of house?—S. P. C.

3934.—**Treatment of Indian Azaleas.**—I should be much obliged if anyone would give me some information as to the treatment of Azaleas? I have had two—in the house during winter—and repotted them, and they have grown, and are continuing to grow fine healthy plants, but not a single flower is on either. They are, and have been, in a warm room with plenty of light, air, and sun.—R. A.

3935.—**Shrubs near a drive.**—I have a quantity of Rhododendrons, Laurels, and Box bordering a drive which have been allowed to grow wildly and projecting too far. When should I cut them back, and will it prevent the Rhododendrons flowering next year if cut hard back this? Can Syringa be cut back without harming it? This is for the south-west coast of Scotland.—O. H. W.

3936.—**Marshall Niel Rose in a greenhouse.**—Will "J. C. C." or someone else kindly say what should be the treatment of a Marshall Niel Rose in a span-roofed greenhouse? The root is outside, and was planted in the early spring. Since then it has made a number of new shoots, and has now six Roses on it. It is syringed night and morning, and liquid manure given once a week.—S. P.

3937.—**Treatment of a Myrtle.**—I bought a Myrtle about 2 feet high, but fleggy and thin at the base, so I cut it down this spring and have repotted it since, and it is doing well. I have put it outside now. Is this the right treatment? I should like to get it to flower next year. Of course, I intend keeping it inside a cool-house during winter. What is the best soil for it?—L. H. B. SCHMIDT.

3938.—**Treatment of Tigridias.**—Do Tigridias require any special treatment or soil? I have planted the bulbs both in autumn and spring in the open ground, and have seen them planted in a pot in spring and placed in a cold frame. None of them have succeeded, and I should like to know the reason? No special instructions for treating them are given in the seedman's catalogue.—A. S. M.

3939.—**Unhealthy Cucumber, &c.**—What is the cause of many of my Cucumbers going off yellow at the end when about 4 inches to 6 inches long? Are some kinds more disposed to this than others? What is the best sort to grow for market in hot-houses? How can the plants be raised from seed? What kinds of manure are best for the plants? Is it advisable to thin out the fruits besides cutting them when fit? How many fruit can be expected on each plant?—D. J.

3940.—**"Geraniums" for winter flowering.**—I believe that "Geraniums" (rooted cuttings) can get to flower in the winter and early spring by taking the cuttings at the right time of year. I have a greenhouse which keeps out the frost, but never is much above 50 degs. temperature in the winter. I shall be very much obliged if anyone will tell me at what times I ought to take cuttings, so as to have small plants in bloom in January, February, March, and April.—CHANNERY.

3941.—**Caterpillars in a shrubbery.**—I have some trees in my shrubbery that are a mass of caterpillars and web. Will anyone kindly let me know how to destroy the caterpillars, so they look so unsightly? They are in little lumps rolled up in the web, and don't seem to care about any other tree but this special sort—some people call it Paper-moss. Is this the right name? It grows about 10 feet or 12 feet high, bears a few red little berries (four together in little lumps) in winter.—ENGLEND.

3942.—**Treatment of a Cherry tree.**—Will someone kindly tell me what will be best to do with a Cherry tree that has been planted six years on a house wall facing due east? It is in very good health, and makes due shoots every year, but never brings any fruits to perfection. Trees, as soon as turned, all drop off. Soil rather light. I should mention that the garden is enclosed by three low walls, independent of house wall about 5 feet from house, and a great many young plants spring up each year. I shall be very glad of advice.—M. A.

3943.—**Marshall Niel Rose in a vineery.**—Last November (twentieth) I planted a Marshall Niel Rose on the back wall of my vineery. I keep just enough fire-heat during winter to exclude frost. In the spring following it made three long shoots, which ran to the top of the house. I cut at the top of these in the autumn. This spring these three shoots made other growth, which I expected would have flowered, but they did not show signs of a bloom at all. Should I cut back these young shoots, or should I train them in?—YOUNG GARDENER.

3944.—**Grubs and green crops.**—Will someone kindly reply to the following?—All my Cauliflowers, Savoys, Brussels Sprouts, cabbages, Onions, Turnips, &c. are attacked with grubs. They are most destructive, killing all the plants. I find them thirty to fifty grubs at a plant. I try and, the garden has been well limed this winter, and is of fair quality. I have also watered the plants at the roots with soot and lime-water, but it seems to have had no effect on this destructive pest. Which is the best way to get rid of them?—H. C. CHISHIRE.

3945.—**Roses, &c. in a greenhouse.**—I have a greenhouse (about 7 feet square), in which I have a few miscellaneous plants and the following Rose—viz., Star of Waltham, La France, and Grace Darling in pots. I want to grow a few more, which would be the best sort in the space given? I would also a Gloire de Dijon, William Mitchell, or some other climbing rose do better? I want a Rose or Roses to give a succession of blooms for many months. If, if grown in pots, when would be the best time to pot them, in what size of pot, and how often should they be repotted? If, in repotting should the soil be chosen from the pot, or only put in the next size larger pots? Is yellow loam essential to grow

Roses well? 6, Would it injure Roses to winter them in a cold frame and then bring them on in succession, and which would be the best to bring in first, and when? Also would it be best to prune in autumn or spring? Locality: A manufacturing town a few miles north of Manchester, exposed to north and east winds.—L.A.S. to KNOW.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

3074.—**Sycamore-leaf (Quercus).**—The red excrescences are caused by a little insect which has punctured the leaf, and all the leaves which appear to have been so unaccounted should be collected and burned.—J. J.

3077.—**Selaginella lepidophylla (Arabis)** is the correct name of the specimen sent, but its more popular name is "The Rose of Jericho," and again it is also known by the name of "The Resurrection-plant." This species of Selaginella may be bought living from any nurseryman.—J. J.

3078.—**Cattleya Mosses (J. Alder).**—The flowers sent are of very inferior quality, and my opinion of them is simply that they are not worth the space they occupy. I can not how large the plants are, nor the number of flowers they carry; it only serves to aggravate their worthlessness.—M. B.

3079.—**Aeride Lindleyanum (A. Galt).**—The specimen you send I recognize at once as this plant, and I have received a quantity from the Madras Presidency from time to time, where it appears to grow in abundance. It is more robust in growth, and the spikes are always branched, as you say yours are.—M. B.

3080.—**Madeoivallia (F. W. Vere).**—I am unable to express any opinion as to your flowers, as when I got them they were past recognition, but as you say you have M. Harryana with thirty-four flowers open, I should suppose you have quite a grand lot of these plants; they cannot be equalled for brilliancy of colouring.—M. B.

3081.—**Acanthophippium bicolor (Eumophry Clunker).**—This is the name of the second Orchid you send. These plants cannot be called showy Orchids; the flowers, however, are of good size, and to me they are most interesting. I used to grow this and several other kinds some few years ago, and they were of as much value to me as any other kinds.—M. B.

3082.—**Aplidystum Findlaysonianum (G. Taylor).**—This is the name of your No. 2. From the Malay Peninsula. It has the veins netted towards the margin, and it would appear to come in with *Hemidictyum*; but in the present plant the veins are very obscure, and I quite agree with the late J. Smith in establishing this genus for it, which he did in 1854.—J. J.

3083.—**Neotipteris Grevillea (G. Taylor).**—The frond you sent for name appears to me to be of this species. I recognize it particularly in winged alder. You said you got it from Burnham. There are many fine Ferns in that country which would well repay the cost of introduction. It has been returned, as requested, but upon another occasion please enclose stamp for postage.—J. J.

3084.—**Grubs and Ornatone (Miss Forster).**—The so-called grubs are one of the Snake Millipedes, the spotted Snake Millipede (*Julus guttatus*). They are very annoying pests, and are very difficult to get rid of. When beneath the soil it is almost impossible to make most insecticides reach them in sufficient strength to injure them, but strong salt and water is said to be effective. Trapping them by burying small slices of Mangolds, Turnips, or Potatoes near the plants so much or so below the surface is very useful. Pieces of cotton-wool also form good traps. A small wooden skewer should be stuck into each trap to show where it is. Laylog small pieces of slate or tile about is also useful, as the Millipedes creep under each thing for shelter.—G. S. B.

NAMES OF PLANTS AND FRUITS.

Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the Editor of Gardening Illustrated, 37, Southampton-street, Strand, London, W.C.

Names of plants.—D. K. F.—Send better specimen.—F. W. Dwyer.—Specimen too much dried up to name. Pines send a better one.—Mrs. M. Banks.—Insufficient specimen.—Hay.—Wo do not, as a rule, name them, but the one sent is no doubt W. A. Richardson.—Denby Court, Harrogate.—*Cyrtus Adami*.—Mrs. Burne.—*Justicia carnea*.—J. A. Espinasson.—Probably *Calceolaria violacea*, but much dried up.—*Misc. Utricularia*.—*Elaeagnus variegata*.—J. J. C.—The Rose had all been to pieces.—E. G. C.—The numbers of specimens all detached, and you do not give your name and address.—J. J. Hantle.—Specimens quite rotten from being soaked wet, so cannot name.—C. F. Sharp.—We should say that it is *Schmrock*, certainly.—Iera.—So-called Lily *Fritillaria Kamehobuta*. Other specimens too much dried up to name.—A. H.—Your Orchid flowers came to hand in a very bad state, some with numbers and some with none.—Amongst them I recognize *Epistadium vitellium*, *Odontoglossum albostriatum*, *Demodromium amoumum*, an *Oncidium* which looks like *supplantum*, *Brassia caudata*.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

Winford.—Punneta Apply to Messrs. Draper, gardeners, Centre Avenue, Covent-garden market, London, W.C.—**Erin.**—"Dictionary of Gardening," by W. Nicholson, published by L. Upcott Gill & Co., Strand, London.—**Aderson.**—Wo do not remember having received any flowers from you.—J. N. S.—"Vills Gardening," E. Hobday, Macmillan & Co., London.—**Mildred.**—The best plan will be to write to the people from whom you bought the material.—F. S.—We do not know the plant you name, but if you will send a portion of it (in flower, if possible) we will tell you its name and how to treat it.

F. Fane.—It is not unusual for Foxgloves to sport as the specimen sent has done.—*Louisa Dennis.*—Apply to Mr. W. Paul, Waltham Cross, Herts.—*Mrs. Jackson.*—Apply to Messrs. G. Bonyard & Co., Maidstone, Kent.—*Charley Davice.*—Most likely the Vines were weakened with the petroleum dressing. It is a very dangerous thing to use on Vines. Send more particulars, please.—*M. J. Mactaggart.*—We do not think that *Fritumula ohonocia* is an objectionable plant to have in a window garden.—*A. W. E. Weston.*—Please say what plants you wish to use the soil for, and then we will endeavour to advise you.—*Zonic.*—The Kals is correctly named as "Euda."

BEEES.

SEASONABLE NOTES.

COMB being very valuable to the Bee-keeper on account of the quantity of honey consumed by the Bees in the elaboration of the wax, it should not be taken from the hive, except in the case of section honey. The honey extractor leaves the combs uninjured, so that they can be returned to the hive to be refilled by the Bees, and not only are the combs preserved and more honey obtained by extracting, but more room is thereby given the Bees for brood rearing. By extracting the Bee-keeper is also able to secure honey even in a poor season, when little or no section honey is to be obtained, and, if it be wished to work for honey instead of increase of colonies, swarming can be avoided by the use of the extractor; but honey should be extracted from store combs only, not from any combs that may contain brood.

EXTRACTED HONEY.—In working for extracted honey, the method called doubling is sometimes practised. Two strong colonies are selected, and from one of them all the brood combs are taken, and the Bees brushed back into the hive. The combs are placed in an empty hive, which is put on the top of the other stock so as to form a second story. By this means a double set of combs is given, and the hives are soon full of Bees, the hatching taking place above and below. As the brood hatches out in the upper story, the cells become filled with honey, and as fast as filled the combs are placed in the extractor, emptied of their contents, and returned to the hive to be refilled, the brood being then reared in the lower hive only. The hive from which the brood combs are taken is filled up with bars of comb foundation. As the Bees collect honey they put a little in each cell, so as to expose a large surface to the influence of the heat of the hive, and during the night, if warm, the moisture has evaporated sufficiently, to enable the Bees to carry the honey to the upper cells, where it is permanently stored, but if more honey has been collected through the day than can be evaporated during the night, and all the cells are in use, the Bees returning the next day with stores have nowhere to put it; they, therefore, convert it into wax, which they add to the cells, and make preparation for swarming; removing surplus honey from the hive by means of the extractor will, therefore, frequently be the means of preventing swarms leaving, while the Bees will be stimulated to greater activity to refill the empty combs. In the ordinary way, the heat of the hive assists in evaporating the superfluous moisture, and when the process of evaporation is completed the cells are sealed over.

INTRODUCTION OF QUEENS.—A frame of comb containing brood and eggs introduced into a queenless hive is one way by which a colony can be saved, as the Bees will immediately begin to fashion royal cells round some of the worker grubs or eggs, and rear queens from them; but the best way of setting up a queenless colony is by giving it a fertile queen. In order to introduce a queen successfully it is necessary to use a queen cage in which to confine the queen when first placed in the hive, otherwise the Bees are liable to destroy her. The cage containing the queen is pressed into a central comb as far as the base of the cells, if what is called a pipe-cover cage be used, great care being exercised not to injure the queen. The comb selected should be one containing honey, that she may be supplied with food; the Bees are now sprinkled with syrup, and the hive closed till the next day, when the Bees are again sprinkled with syrup and the queen released from the cage, and watched to ascertain if the Bees take to her. Should they seize her by the wings and treat her somewhat roughly, she is released from the cage and the experiment tried the next

day. If it is wished to exchange an old queen for a young one, the old queen is searched for and removed, placed in a cage and introduced between two of the combs for about six hours, then removed and the young queen placed in the cage, and in two days released, when she is, as a rule, favourably received by the Bees. In the case of a hive having been queenless for some time the introduced queen may be caged for three days. There are several kinds of queen cages; a very good one is made of wire net and formed to fit between two combs, having a flange on the top to prevent its entering the hive too far, and can be inserted through a hole in the quilt. It has an entrance on the top in which to insert the queen, and by pressing down a wire, a door is opened at the bottom which allows the queen to escape into the hive. Difficulty is sometimes experienced in introducing queens into hives which contain no young Bees, the old Bees being liable to encase and destroy the new queen; it is, therefore, advisable to insert, if possible, some frames of hatching brood on which to rear the new queen.

S. S. G., Parkstone.

POULTRY & RABBITS.

3875.—**Fowls losing their feathers.**—There can, I think, be no doubt that the quierist's fowls are troubled with the vice of feather eating. It is, of course, possible that insect pests are at work, and they may both destroy the plumage themselves, and also by the irritation caused by their movements over the skin of the fowls cause the latter to pluck the feathers in their search for their enemies. I do not, however, think that insect vermin are often so plentiful as to cause the feathers to fall off, particularly round the thighs, as in the case mentioned by "Belle Cherie," and so we must fall back upon the first solution of the mystery. It may be asked why feather-eating should develop itself to such an extent in the quierist's run, where the birds are seemingly well cared for, and yet no trace of the habit should have been apparent when the birds were purchased. The explanation, I feel sure, is not a difficult one. I have no doubt the fowls were formerly provided with a free range. Here they could be constantly on the move, and be moving to fresh sights and sounds all the time. They would thus get no opportunity for standing still moping. In a confined run the case is altogether different. The fowls have not the opportunity for much running about or something to divert themselves, and so it comes to pass that feather-eating is resorted to, and if not checked at once is soon carried on to such an extent as to become a very bad nuisance. As to a cure, I am afraid it is impossible to name one when the fowls have become thoroughly addicted to the habit; but it is possible to check the vice a little. This is done by paring the edges of the upper portion of the beak of the fowl, which prevents it taking a firm hold of the feather. The trimming does not make the bird unsightly, nor is the operation attended with any pain, and it undoubtedly puts a stop for a time to the plucking; but, like our nails, the horn of the beak soon grows again, and the operation must be repeated. Some good may be done by giving the birds occupation of some kind. Corn may be thrown down in the runs and covered with soil for them to scratch over; Cabbages may be suspended from the sides of the run, and an occasional ramble may be permitted. I believe the habit is found more frequently in some breeds than in others, and I also am of opinion that a single bird will soon contaminate a whole flock. Not only is feather-eating objectionable because it disfigures the fowls, but it makes them more susceptible to cold.—**DOULTING.**

How to hold a fowl.—Few persons know how to secure a fowl properly. Never seize a fowl by the tail, if a fine bird, nor touch the back, but grasp both legs at once with a firm, tight, quick hold, and then raise free from the ground or perch and hang the body down clear of any obstacle. This method does not ruffle the plumage or turn a feather, which in a fine bird must be avoided. When the web of the feet is once broken it can never be united again, and where much handled this often occurs, giving the bird a ragged appearance.

GARDENING ILLUSTRATED.

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CHRYSANTHEMUMS.

CHRYSANTHEMUM NOTES.

WATERING THE PLANTS.—I fear this is a detail of culture not well understood by the ordinary amateur cultivator. They either give too much or too little or at the wrong time. Although Chrysanthemums are moisture-loving subjects, it is a mistake to suppose they cannot have too much. Never ought the plants to be watered without the attendant is positive of their condition. Every plant ought to be tested for supplying it with water. There is no better method of doing this than by rapping the pot with the knuckles. If the soil is dry the pot has a peculiar light ring, if wet a dull, heavy one. If found in the former state water should be given in sufficient quantity to thoroughly wet every particle. If in the latter state wait until the soil approaches dryness. To give a small quantity because the soil is moist, or not dry enough to receive a full watering, is a practice that should be condemned, because it is misleading for future test. While the soil on the surfacing is moist enough, that in the middle and near the bottom is quite dry. The dripping system is bad in every respect and should be rigorously avoided. Although water may be applied in a methodical manner, another source of injury to the plants may exist. I allude to the employment of water in an unfit state. That coming direct from wells, tanks, or water-companies' pipes is not in a fit state to be given to plants without first having been made warm by exposure to the sun and air for at least twenty-four hours. If doubt that quantity of time could be allowed so much the better. Water used in such a cold state must cause a check to the roots, and thus to the even progress of the plants, which cannot fail to be injurious. Cultivators who have not the command of rain-water are also heavily handicapped as compared to those who have an unlimited supply. Water that is impregnated with lime, as that coming direct from chalk wells, is injurious. Even though Chrysanthemums may be calcareous-loving subjects they can have too much of it. Plants supplied with water of this character generally have pale-coloured foliage; at least, where no amelioration of its natural tendency to lime is practicable. It comes within the possibility of everyone to soften the water, where thus hard, by artificial means, so readily can this be done now by the aid of Anti-calcaire, commonly called milk of lime, or even common washing soda will effect the purpose, rendering the water quite soft by precipitating the chalk which is held in suspension to the bottom of the tank or tub. A quarter of a pound of ordinary washing soda is sufficient to soften 40 gallons of water. Dissolve the soda in boiling water, and add it to the bulk named, say, an ordinary petroleum cask full, for instance. In twenty-four hours' time the water will be quite fit for use. Do not disturb that at the bottom, which is so heavily mixed with lime through the precipitation of the chalk, as this would be injurious

to plant life if it came in contact with the roots. If tubs were kept constantly in use according to the quantity required, soft water could always be had for the plants. Where a larger quantity of water is required Anti-calcaire gives the least trouble in preparation; 1 lb. will be sufficient for 250 gallons of water. All that is required is to dissolve the powder in the bulk of water by stirring it well, when the chalk will be precipitated to the bottom of the tank, and the water rendered soft. If the tank were fitted with a tap 4 inches from the bottom the softened water could be run off into other vessels without fear of disturbing the objectionable sediment at the bottom of the tank. Another tenkful of water could be prepared also while the former one was being used, thus keeping up a constant supply of softened water. Even if lime in excess be added to chalk-water, the water becomes turbid, and the carbonate of lime, formerly held in solution, is precipitated, rendering the whole soft. In this way ordinary quicklime is valuable as a softening agent. E. M.

3947.—Chrysanthemum seedlings.—If the plants are still in the seed-pan lose no time in placing them in 3½-inch pots in a compost of two parts loam and one part horse-manure, with sufficient coarse sand to keep the whole porous. A cold frame stood in a sunny position affords the best site for the plants for a time, until they are firmly established. A bed of coal-ashes will keep the pots cool and prevent the ingress of worms. Water carefully with tepid water, and give no more than is required to keep the soil moist. Admit air freely to induce a stocky growth. Place alongside of each plant a stake, to this secure the single stem to prevent its being broken. When the plant reaches 1 foot high most likely other shoots will push from the main stem. With a view of thoroughly testing each plant, retain five of the side growths of each as well as the leading shoot, allowing one bloom to develop on each. By encouraging these side shoots as well as the leader, a better opportunity is provided of testing not only the form but the colour of the flower; seldom does the leader and the side shoots produce exactly similar blooms. From the pots named the plants should be shifted into those 7 inches in diameter; in these they will flower. A position in the open where they will obtain abundance of sun and air, but be sheltered from north and south-westerly winds, will be the most suitable after they receive their final shift. After a hot day syringe the foliage thoroughly well over in the evening, and keep the leaves free from insect pests. When the pots in which the plants are to flower are full of roots, weak liquid-manure given twice a week will prove advantageous.—E. M.

—The seed has not been sown early enough to obtain strong flowering plants for this year; it should have been sown in heat in January or February, and the plants would have been now half-a-yard in height, and would flower with the named varieties in November. The plants now about an inch high should be potted on in larger flower-pots, and some of them may yet chance to flower. At this time of the

year all the flowering plants are out-of-doors, where they make a cleaner, healthier growth than they do under glass; but small plants an inch high should be grown in frames until they are 6 inches or 9 inches high.—J. D. E.

FERNS.

3944.—Ferns and out-flowers.—Except the Adiantum, few Ferns are of much use for cutting. Pteris serrulata and P. cretica are useful to some extent, and I used to grow Nephrolepis exaltata for this purpose also. The most useful by far of all Ferns (perhaps excepting Adiantum cuneatum) for cutting and decorative purposes is the Black Maiden-hair Spleenwort (Asplenium Adiantum-nigrum), a hardy British species. This is precisely the same thing as the so-called French Fern, of which such immense quantities are annually sold in the flower-markets and shops. It grows freely in any light sandy soil (peat or loam), and I should think would be worth cultivating on a large scale in this country. There are parts of Surrey where one could almost cut this Fern with a scythe; at least, such was the case a few years ago. A third invaluable plant is the elegant and lasting Asparagus plumosus, which thrives in any warm greenhouse.—B. C. R.

—There are few Ferns better adapted to mix with cut flowers than the old and well-known Adiantum cuneatum, but the fronds do not last long in a cut state. An excellent substitute now much used is the Asparagus "Fern," as it is termed. Of course, it is not a Fern at all, but an exotic species of Asparagus—botanically, A. plumosus nana. Adiantum formosum is an excellent species for cutting; the fronds last longer out than any other Adiantum I know. I also use a quantity of Davallia Mooreana, a handsome species, the fronds of which last a long time in a cut state.—J. D. E.

—When you except the Maiden-hair (Adiantum) you dispose of some of the best kinds for cutting, as their elegant character fits them well for association with flowers. The Asparagus plumosus lasts well when cut and is very charming, its feathery character being most marked. You must get good specimens of the plants if you wish to cut much from them, and nothing is better than Adiantum cuneatum, which is sold largely. I know one unscrupulous man who has two large houses filled with nothing else, all for cutting, and the plants are grown cool, not in too much heat, which makes the fronds more tender. Pteris serrulata is a good Fern for cutting, and the fronds stand well, but they are not so graceful as those of the Adiantum, whilst mention may be also made of such pretty things as Pteris Mayi, the fronds quite silvery, but you must place chief reliance upon the old Adiantum cuneatum, which is quite the best Fern to supply fronds for cutting.—C. T.

—Several of the Pterides are very useful for cutting, notably cretica and serrulata. Oxychilus japonicum and Phlebodium aureum also keep well, though the fronds of the last named are too large for small vases. What are called the Asparagus Ferns are very useful for cutting, and will be more useful than the plants are more common,

GARDEN WORK.

Conservatory.

Specimen Heaths now in flower should occupy a light, open position. With careful management, Erica, Davallia, and the varieties of variegated may be kept in the conservatory as long as their flowers keep in condition without injury. After flowering, pick off all seed-pods, or leaving them on only a short time has a very exhausting effect. The same course should be pursued with Acaules and all hard-wooded plants. Epacris will now be growing freely, and as soon as growth is completed, move to a cool, airy house or pit, and to July place outside in some sheltered position to complete the ripening. I must hardly say that all plants placed in the open air must stand either on coal-ash bed, or some impervious material where worms cannot work into the pots. The early-flowering Azaleas may soon be placed outside, and if the plants have not been reported, clear, weak liquid-manure will assist greatly in plumping up the buds. Abutilons in pots, which have been flowering some time, may be pruned hard back, and the cuttings put in to make young shoots. The shoots which break away from the pruned plants will produce flowers in autumn. Set the plants outside; they will come early enough. I have planted them out and lifted them again in autumn. They do very well so treated, but the lifting must be carefully done not later than the first week in September, and the plants must stand outside in the shade for some time to get established in the pots before housing them. Keep Kalanchoes in a light position. The tops which are removed from young-growing plants will make good cuttings, that will soon strike. Continue the shifting of Chrysanthemums into their blooming pots, which should not be less than 9 inches in diameter, using rich, rough, turfy soil, leaving room in the pots for a top-dressing later on. Do not be tempted to use stimulants of any kind till the pots are well filled with roots. The soil, if of the right quality, will furnish sufficient food for growth till the buds are forming. Late Chrysanthemums are so much thought of now as early autumn ones. And young plants are out down now and lifted into 5-inch pots when the growth starts, they will be time enough for winter blooming for cutting, or to furnish plants for the rooms with suitable sized plants. Salvia of several kinds are useful for winter flowering. These may either be grown on in pots or be potted out. Larger plants are obtained by the planting-out system, and Salvia will soon get established after lifting, if the latter process is not delayed till too late. Give them room enough for full development. Many of these of the hardier winter-flowering plants may be planted out with advantage. This is by far the best way of treating Eupatoriums, and if this is followed for a few years, the plants being pruned back after flowering, immense bushes may be obtained that will continue in flower a long time. Saw another frame of Cinerarias for blooming in spring, and those plants which have been set in a cool, shady place may be divided, and the suckers potted off as soon as the latter can be safely taken off. Pot off Primulas, both the Chinese and also the obsolete varieties. Pot out Arum lilies as soon as there are any signs of growth. These are sometimes planted in trenches, but where many plants are grown the trench system involves more labour, and takes up more space.

Stove.

Winter-flowering stuf will require shifting on now, and if a small, low house or pit can be secured, move in there after repotting, and keep close for a time, applying no thin shade when the sun is bright. I am not in favour of permanent shading, though I am obliged to use it more or less. We never have too much light for plant growing in this country when the sun is not actually shining. Perhaps a few of the largest plants in this house may be moved to the conservatory, and this will give a welcome relief. See that all the plants under glass are free from insects. If there should be any, the best way is to use weather any falling off in atmospheric humidity, red-spider and thrips will soon make their appearance. The latter choky attacks hard-leaved plants, such as Crotons, India rubbers, Marantas, and things of that type. Fungating with Tobacco an successive evenings will destroy them; but it would be necessary to follow it up till the insects are all destroyed. Sponging with soft-soap and water will do very well, but it takes up more time than fumigating. Use the shade only when it cannot be dispensed with. Such plants as Crotons, Dracenas, &c., will not lay in colour if too much shaded. Pot off cuttings of Bourardias. These will do best in a warm, loose frame till established. Older plants of Bourardias will now be under cool treatment. Many people are bethered to get good loam for plant growing. I never could do much with loam from a limestone soil; it is generally too poor and hungry. Many things will grow in Wimbledon loam that would be miserable things in inferior loam. If such loam as afore-said must be used, mix with it a larger proportion of peat and leaf-mould or mid manure than the customary in using the better class loams. There is a great deal in getting the right kind of soil for plant growing. Succose hinges upon it. Stove Palms may be repotted, if necessary, though, in a general way, the difficulty is to keep the plant small enough.

Ferns.

These should now be in good condition; but Ferns can never be seen at their best if crowded together. Each plant requires room for the full development of its fronds, and one really well-grown plant is worth half-a-dozen stunted and stunted things. But though we may talk and write about the desirableness of plenty of room, how few of us can give it where anything is doing. In a collection now grown. New species and varieties are introduced, and old forms are retained until at least it blooms—a question of building new houses to hold the stock. Well, glass is cheap enough, and Ferns are exceedingly attractive at all seasons, and where one has plenty of room it is easy to brighten up with a few foliage plants, such as Crotons, Dracenas, Marantas, &c. The fine-leaved Begonias too, associate well with Ferns. Continue to pot on young

plants for specimens, and if more room cannot be afforded, throw out the old plants. There comes a time when even old Ferns are on the decline, and will not pay for keeping, and I never recommend an old plant, except of a very scarce kind, to be broken up for propagating purposes.

Melons in Frames.

This is splendid weather for Melons on manure-beds. One can feed advancing crops without any fear of canker, and bottom-heat can be maintained without a continual renewal of the linings. Ventilate freely during these hot days. I generally draw the lights up before inserting the props, so that a chink of air can be given at the bottom of the light. Where there is a gentle circulation the leaves will not scorch so long as the roots are in a moist condition. Keep the growth thin, but never out of an old leaf after the crop is set and swelling. Melons do not make much growth, and a light spray, should it make its appearance, should be cut away. Give a chink of air early in the morning to purify the atmosphere in the frame from the accumulation of the night.

Window Gardening.

Where well-filled, window-boxes will now be in good condition, and will utilize profitably weak stimulants once a week or so. Remove dead flowers and leaves frequently. Plants on balconies must have regular attention in watering. Climbing growth round window-boxes and on trellis-work should be regularly trained. Room plants now are composed chiefly of foliage plants. When there are plenty of flowers outside, a graceful Palm or a delicate-tinted Fern finds more favour as a room plant. Cooco Weddelliana is a graceful Palm for a small vase on the drawing-room table, and though considered so a stove plant, I have known it wintered in good condition in a sitting-room. Careful management will do much in plant culture.

Outdoor Garden.

This has been the most trying season I remember for newly-planted evergreen trees and shrubs, and many deaths have occurred, especially where the watering has been intermittent, and not of a thorough character. The value of mulching is great, and more than one valuable specimen has been saved by the use of the garden-engine or syringe over the foliage in the evening. When the rain comes in a shower, it is a relief, but all things will save life, although I do not look upon the use of the syringe over the foliage after a hot, drying day as a small matter. It is like the bath to the weary traveller after a day's journey through a hot, dusty country. It will be a difficult matter to grow good Peaches in the south during a season like the present. The beds must be mulched with old cow-manure, and if the precaution was taken to bury some old cow-dung in the soil things might be so bad as to be a serious matter. I have seen, through different gardens and notes the flowering of hardy plants. In poor ground, where the plants are crowded, and have had no manure, and the borders but little preparation before planting, there is not much success to chronicle; but in good land, well manured and deeply worked, things are doing well, though the development may be rather less than usual. Recently-planted Ferns and alpine plants will require water, and in some cases a little Coccolite will be useful. The same kind of mulch will save watering of flower-beds in a dry spot. Straggling plants must be pegged down soon after planting, before the growth gets firm. Tenulewms may be sown now, where there is a good supply of water. The turf, if kept moist, can get established at this season.

Fruit Garden.

Condense layering Strawberry runners for forcing. Let the main reliance be placed on the best old sorts with a reputation for size and quality. Nowadays there must be size. Vicomtesse Hericard de Thury is too small for some. This variety is otherwise a splendid forer (none better), and good sized fruits may be had by severe thinning, which is a necessity in fruit growing. It was fully recognized in the past by leading men, and nothing has required to prove that even by the use of artificial stimulants can a tree be enabled to carry more than a reasonable amount of fruit. The application of stimulants requires judgment. This has often been carried too far in the case of Grapes, and the large, gouty berries, the outcome of a too stimulating diet, have worn a foxey appearance in consequence. What is termed fish in Grapes (colour and bloom) cannot be obtained by excessive feeding at the same time. More can and will be done in the use of stimulants in the future than has been attempted in the past. Many men are experimenting, and something definite will grow out of it. Stone fruits on walls may be gone over, and the breast-wood shortened to three or four leaves, and the young shoots retained for extension laid in. The young wood of Peaches is easily damaged by the wind if not secured in good time to the wall. Some effort should be made to clear Plum-trees from insects. When there are to be done on a large scale expense has to be considered. It is a question if anything is obtained, it is cheap, a self-soap, with a dash of Tobacco powder or paraffin in it, and the trees sprayed with the mixture. Quassia is a very good insecticide, and moderate in price. Peaches under glass, from which fruit has been gathered, must be syringed freely, and water given when required.

Vegetable Garden.

Tomatoes outside, where mulched, and the roots kept moist and cool, are growing freely. Surplus growth must be removed when the finger and thumb can do all the work. Under glass the fruits are colouring up well. It is a common practice to cut the fruits as soon as they begin to colour, and ripen them in the sun; but it is better to let them ripen on the plants—at least, so far as regards the flavour and condition, though gathering the fruit before it is ripe saves the plants. This is just the weather for Cucumbers, where well cared for, either in houses or frames. Plenty of moisture, and to do all the spheres and at the foot a little stimulant to be added to the water for the beds, frequent top-dressings of rich soil, constant stepping of the young shoots, and no fruit left to get old, with a thin shade in bright weather, and just a little artificial heat at night till the nights get warm enough to maintain a temperature inside the Cucumber-house to something over 60 degs. It is a very trying time for vegetables, especially in the eastern counties where the rainfall has been so light. Yet where the land has been

done well the crops are looking well. Potatoes are growing freely, dry though it is, and are all now, except those planted very late, earthed up. This earthing up keeps the roots cool, and if we should get a wet autumn it will facilitate the escape of the water. The question is, is it a good idea to give the ridges a pronounced slope. The green-crops are suffering. A Cabbage or a Cauliflower spreads out a large surface of leafage, which on a dry, hot day will evaporate a great deal of water, and when scarcely any rain falls for months, Cabbages and Cauliflowers must be poor in size and quality if left to themselves; but if mulched and occasionally soaked with water they will enjoy the sunshine. The question arises—Can we flood the Cabbage-bed? It can be done, of course, if we do not mind the expense. E. HODDY.

Work in the Town Garden.

Watering is a terrible business now, and in many places the difficulty is to get enough of the precious fluid. Day after day passes and no rain comes, although it threatens frequently, but we only get a few drops, and then it all passes away and the hot sun and wind together drink up the moisture faster than it can be supplied. In any case, watering by dribsles is worse than useless. Give a thorough soaking or none at all; mere surface sprinklings only excite the plants and their roots, only to disappoint the latter. Newly set out bedding plants, especially if small, must be kept close to the roots, at least until they are thoroughly established in the ground. The Tuberosa-rooted Begonias especially are very exacting in this respect, and in a dry time like this small plants from boxes will not move or make a leaf unless abundantly supplied with water. Verbenas are apt to suffer from extreme drought also, especially a B. Bet, and if kept short of water the foliage often becomes infested with aphids, and Dahlias also must be liberally watered during the early stages. Chrysanthemums ought now to be placed in the beds of pot in which they are to flower, those 84 inches to 9 inches or 10 inches across (inside the rim) being the best size for plants grown in the ordinary way with three or four stems apiece. When growing for exhibition, or to obtain flowers of the largest size for any purpose, the last shift ought to be given not later than the middle of June, but for ordinary decorative purposes, or supplying out-flowers, any time up to the end of the month will do. Of course, after potting less water than usual must be given for a time, but do not let the plants dry or wilt badly. Plants that have been out down to reduce the ultimate height must not be repotted until the young growths are 2 inches long; if these are numerous, thin them down to three, five, or seven per plant, according to the size of pot and number of flowers desired. Tomatoes under glass are setting and ripening their fruit well, but require plenty of water and nourishment, particularly when carrying a far too heavy crop; if started in any way the upper branches will drop their flowers instead of setting them. In such weather as this it is advisable to syringe the plants lightly overhead once a day—certainly when they are growing in a light, sunny, and well-ventilated house. Window-boxes must be liberally supplied with water, though where small plants have only recently been put out in a box full of sand soil it will not do to make this very wet until the roots are running freely in it. But the daily overhead is quite indispensable. B. C. K.

THE GOMING WEEK'S WORK.

Extracts from a garden diary from June 17th to June 24th.

Busy thinning late Grapes; shall bring it to a close this week. This is a very tedious work, and one always feels relieved when the scissor can be laid aside for a time. It is always necessary to look over Grapes a second time; there may not be much to do, but a small berry here and there may be taken out and the light places in the bunches opened out a little. But Grapes should never be cut down as to look over them in a dish. Give a sprinkling of artificial manure and watered it in with the hose. Finished gathering the last of the earliest Peaches, but late's Early, a free-bearing kind, will be ready in a week. It takes a good deal of Peach to exceed 8 oz., but it pays to have them not less than that size, and the thinning must be pretty severe to average that. Planted Melons for late summer crop, shall plant a few for autumn, or possibly take a second crop from some of those plants now starting. This can be done if I am not over-topped; though I seldom rely upon this crop, I often get a second crop from the same. It is merely a question of keeping out red-spider. If that little pest gets a footing in the Melon-house or frame there will be no second crop of fruit. Tomatoes, where largely grown, furnish a lot of work now and it must be done promptly; growth running to waste takes a good deal out. I have mulched all the beds in the Tomato-house with stable manure; this has many advantages and saves a deal of labour, and cost is economical. Tomatoes will take a good deal of support where the fruits are growing rapidly. Tomatoes will not set very well if dry at the root in hot weather. In dull weather do not water if it can be put off, but during a hot day if the roots are dry the blossoms drop unset. Picked off Chinese Primulas. Shifted Solanums into fruiting pots. A little pinching by-and-by will keep the plants in shape. I want to get the plants a good size as before thinning them out to set their fruit. Cut down the early-flowering Peargonium and put in the cuttings; the old plants will be kept quite dry till they break. Potted Chrysanthemum I am getting through. Planted out more Leeks in shallow, well-manured trenches. Sowed Vetch's Perfection and No Plus Ultra Peas. The bottoms of the trenches were soaked into puddle before the Peas were sown. The Peas under such conditions will germinate immediately. Shifted the earliest struck Potatoes into 5-inch pots; they are growing in a close, warm pit for the present just to stimulate root action, but as soon as that object has been accomplished free ventilation will be given to build up sturdy growth with substantial healthy foliage down to the bottom. Made a last sowing of Cinerarias for spring blooming. The early sown plants will now be ready for 3-inch pots. Sowed Parsley and Early Horn Carrots in south border. Put in cuttings of Pinker under bench. Prepared beds of light, sandy

* In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equally good results.

soil. Layering Strawberries for forcing is being continued as fast as the time devoted to other work will permit. Sowed Endives; probably a few of the plants may bolt, but shall sow again in ten days, and I want Endives as early as it can be obtained. Planted out a lot of young Pinks which were struck early in heat; they are intended for potting off in autumn for forcing. Planted out Autumn Lilies. Only a few of the stock is planted; a few dozen plants will be grown in pots for early bloom. Made a sowing of Rosette Colewort; these plants will come in useful to fill up vacant plots for winter use. Watered wall and other fruit-trees which are carrying good crops. Turned the hoes on the Raspberry plantation. The ground had previously been mulched with manure. Shifted Cockscombs into flowering pots and returned to hot-bed.

INDOOR PLANTS.

FINE STOVE PLANTS.

ANTHURIUM.

Of these there are several that will bear a favourable comparison in their flowers with the best plants brought into the country in either recent or bygone times. There are some that especially deserve a place in even the most select collection of blooming stove plants; but as they require somewhat different usage as to soil, it



Part of a fine plant of Anthurium Scherzerianum.

the spring, when they have made a few roots from the base. That these exist before the crowns are separated from the parent plant is essential, as, if taken off before they have formed roots independent of the plant that has produced them, they will be long in growing away freely. When taken off, place them in pots just large enough to permit of the roots being inserted without injury. They are surface-rooters, requiring an abundance of water, consequently they do not need a great depth of soil, but must have plenty of drainage material. Half-fill the pots with crocks. The soil should consist of fibrous peat three parts, to one of flaky rotten dung that has been well dried. Such as has lain exposed on the surface for moulching a Vine-border or an Asparagus-bed is in the best possible condition for the roots of these Anthuriums. Add to these a fifth part of leaf-mould, a good sprinkling of crocks, broken the size of Horse Beans, and a fair quantity of silver sand, mixing the whole well together. Do not, even whilst the plants are small, sift the soil, but pull it to pieces with the hand; press moderately firm, and pot the crowns an inch or so down, just covering the roots a little; put a small stick to each for support, give water, and place them in a brick heat of 65 degs. in the night, with an increase during the day. Keep them a little close until they begin to grow, but not so much confined as would be requisite in the case of ordinary cuttings. Raise the temperature both day and night as the season advances, giving air in the daytime when the weather is such as to require it, and shading slightly when the sun is upon them. When a fair amount of roots have been formed the plants should be moved into pots 2 inches larger, using similar soil to that in which they were before placed. Continue to treat through the summer as already advised, syringing them freely every afternoon, and also giving plenty of water to the roots. Reduce the temperature, and discontinue shading as the weather gets cooler, keeping them through the winter in a temperature of 55 degs. in the night; but do not let the soil get dry. Repot in April, giving 2 inches or 3 inches of a shift, still half-filling the pots with drainage, and using the soil in a more lumpy state as the plants get larger. This season they will push up flowers from all the strongest leaves, but it will not be advisable, even whilst in bloom, to move them out of the stove, as a lower and drier atmosphere would interfere with their growth. Continue the summer and winter treatment in this and subsequent years as already recommended, giving more pot-room when it is wanted. They will go on for years increasing in size as long as required, and, when they get larger than desirable, they may be reduced by division of the crowns. These Anthuriums can be increased from pieces of their rhizome-like stems cut in bits an inch or 2 inches in length, inserted in soil such as that advised for potting the crowns in, and treated similarly afterwards. They can also be grown from seeds managed as hereafter detailed for the propagation of *A. Scherzerianum* and its white variety by this method.

A. SCHERZERIANUM (here figured) is now well known, and is undoubtedly one of the very finest and most distinct flowering plants ever introduced to this country. By judicious treatment in recent years it has been grown to a size, of both leaf and flower, such as was never anticipated from the small examples produced when first bloomed after its introduction. It is from Costa Rica, and can be readily increased from seeds. For a considerable time after it was brought to this country few persons succeeded in seeding it, simply because they did not allow time for the seeds to get matured; they are borne on the outside of the spadix, in compressed globular, pulpy masses about the size, and when ripe of the colour, of pale Red Currants. To produce good seed flowers should be selected that open towards the close of summer; about August, when the spathe decays, they must be cut off, leaving the twisted spadix growing upon the peduncles: These will remain through the winter in much the same condition as they appear in the autumn, quite brown, with little apparent vitality in them, but in the spring the spadix will entirely or partially untwist, and the seed-vessels will begin to swell, being at first of a green colour, afterwards becoming orange-red as they ripen. When fit to gather they are sown in shallow trays, and will part

3917.—Lilies and Irises for market.—The common White Lily is much grown for market round London, and I believe pays fairly well where the soils suits it, but it is liable to go off wholesale, being attacked with a kind of fungus. The Tiger, the Orange, and some varieties of umbellatum, are also grown to a certain extent. I should not advise the culture of these in heavy soils that retain much moisture in the winter. Iris Germanica and the English and Spanish Irises are grown for market, but the prices for outdoor flowers is low, and only growing them in quantity will pay.—By C. B. G.

will be necessary to treat of them separately. Amongst the more recent introductions of Anthurium is the white-spathed *A. candidum*, from the United States of Columbia, a plant of somewhat slender habit, with rather small, erect, ovate, lanceolate leaves, on proportionate foot stalks; the spathe is about 3½ inches in length. It associates well with *A. floribundum*, a new Grenada species, which has much broader, slightly lanceolate leaves, dark-green, and of compact habit: the spathe of this plant are also white, and it lasts long in flower. Both may be increased by division of the crowns taken off in

readily from the spadix. They should then be removed, washed out of the pulp in the way usual with Melon or Cucumber seeds, and set once sown. **Pearse**

LARGE-SIZED SEED-PANS, in which place an inch of drainage; then get some clean Sphagnum Moss, free from Grass or weeds. Chop this quite fine with a pair of scissors or hedge-shears, and add to it one-fifth of clean sand and some corks or charcoal, broken about the size of smelt Pass. Fill up the pans with this mixture, pressing it firmly down, and water the surface, sprinkling a little more sand if that which has been already mixed with the Moss is washed down. Damp the surface again and sow the seeds thickly and evenly over it, pressing them gently down with the hand, but not covering them in the least. Put a prepaeting-glass over the whole to keep in the moisture, as this will prevent the necessity for giving much water; if this is given in considerable quantities it has a tendency to wash the seeds overhand into the material, which must not occur, as they vegetate much the best when on the surface. Keep the whole quite moist; it must never be allowed to become dry, but, when water is given, let it be applied with a fine rose, so as not to disturb the seeds at all. Place in a night temperature of 65 degs., and 10 degs. more in the day; in a few weeks they will begin to grow. Let the

YOUNG PLANTS, from the time they first vegetate, have plenty of light, but do not allow the sun, when at all powerful, to come upon them without shading; give air in the middle of the day, and syringe overhead in the afternoons. By the beginning of September they will be large enough to prick out, several together, into 3-inch pots, half-filled with drainage. Material similar to that in which the seeds were sown should be used. Keep the soil well moistened, for this Anthurium is a swamp plant, and cannot endure to be dry at the roots. Keep through the winter in a temperature of 55 degs. or 60 degs., and a few degrees warmer in the day. This is considerably hotter than is requisite for them when they get larger; but the object now is to push them on without loss of time. About the beginning of March move singly to small pots, in material such as used before, with a little fibrous peat added; through the spring and summer keep at about 60 degs. or 65 degs. by night, with a proportionate rise in the day. Treat as to moisture, light, air, and shade as advised for last summer. By the end of June give 4-inch or 5-inch pots, according to the size they have attained; the soil they now require is one-half the best fibrous peat to about an equal quantity of chopped Sphagnum, with a liberal addition of sand and broken corks or charcoal, half-filling the pots with drainage. Treat as hitherto recommended up to the end of September, wintering as before. Again pot them in the spring, giving pots 2 inches or 3 inches larger. This summer they may be allowed to open a few flowers. Most of the plants will differ more or less in the size, shape, and depth of colour in the blooms. Remove them before they form seeds, as the progress of the plants will be stopped if they are allowed to do so. Those that have the largest and best formed flowers should be marked, and have special encouragement. As they grow up into a useful decorative size they may be kept at a temperature of 50 degs. in the night during the winter, and should not receive so much water, but still enough to keep them growing. They will make the strongest leaves in the winter; through the spring and summer let the temperature be 10 degs. or 15 degs. higher in the night, and proportionately more in the day. They will go on making larger leaves and flowers until they get five or six years old, as well as forming numbers of crowns, increasing the bulk of the plants for an indefinite time, provided the soil is never allowed to become sour and adhesive—in which case the roots are sure to perish. To avoid this, each year, when repotting, get as much of the old exhausted material away as can be done without injuring the roots. From the time the plants have got to a useful flowering size, the best time to repot is in the summer, after the principal blooming is over; when this is will depend upon the temperature they are kept in during the early spring, as the warmer they are the earlier they throw up the main lot of flowers. Thrips and green-fly are both partial to the leaves and flowers; but the continuous syringing is a general sufficient

to keep them in check, otherwise they may be killed by fumigation. Brown scale thrives upon the leaves, and must be kept under by sponging; so may mealy-hug, should they become affected with it. The

WHITE FORM of *A. Scharzianum* requires treating in every way like the red variety. Both can be increased by division of the crowns, and by pieces of the rhizome in the manner described for *A. candidum* and *A. floribundum*. *A. Andreanum*: This is a most beautiful species, quite distinct from all others. The spathe is large, heart-shaped, corrugated on the surface like the cartilage of the human ear, bright scarlet in colour, and shining as if newly varnished. The lower portion of the spadix is white, towards the extremity yellow; it droops in front of the spathe, and by the contrast in colour seems to intensify the brightness of the latter. It is one of the most remarkable and beautiful plants that has appeared in recent years. It will require keeping somewhat warmer than *A. Scharzianum*. From Colombia. *A. oreatum* has medium-sized leaves. The spathe is 6 inches long, white in colour; spadix purple. A native of Venezuela. *A. Scharzianum* *Wardi* is a very distinct and desirable form of the red species, with immensely broad spathe, which are bright-scarlet in colour. B.

3934.—Treatment of Indian Azaleas.—The very probable reason why the plants are not flowering is owing to their not having sufficient light and air in the room of a dwelling-house. The only chance to get them to flower next year will be to place both plants in a light position out-of-doors when they have made their young growth. Keep the plants well watered, and the leaves free from red-spider. The buds will set well in the open air, and they should have as much air as possible after being taken indoors. The Indian Azalea is not at all a good window-plant. Now is the time for the plants to make their growth, and those who have the means should place them in a hot-house, and keep up a minimum temperature of 60 degs. to 65 degs. at night, shade from hot sunshins, and syringe them well twice a day. This will keep the leaves free from thrip and red-spider; both parasites are very fond of the leaves. A surface dressing of powdered bones is excellent to give colour to the leaves. They also require a plentiful supply of water at the roots when in full growth.—J. D. E.

3370.—“Geranium” for winter flowering.—Do not deceive yourself. To bloom Zonal Pelargoniums successfully in winter a temperature of 60 degs. is a necessity, liquid-manure twice a week, each plant in a well-drained 6-inch pot standing upon an inverted pot, with plenty of spears round each plant for air and light, careful attention to watering without overdoing it. All these are necessary to success, and I have proved (by repeated attempts in past years) that it is useless, no matter when the cuttings are started, to hope for bloom in the dull, cold days of mid-winter, unless a summer temperature can be artificially provided. Do not waste time in attempting it.—A. G. BUTLER.

3960.—Malmeson Carnations.—Plants that are always covered with green-fly, whether Carnations or anything else, as you say yours are, are not likely to be satisfactory. Cannot you adopt one of the many simple remedies so often recommended in GARDENING for destroying the flies? Your plants are evidently in a poor way. They are badly nourished, and from the information you send I should say they get too much water. A cool, light vinery is a very good place to keep this Carnation through the winter.—J. C. C.

—If the plants are always covered with green-fly it will be quite a struggle with them to exist at all, let alone carry flowers of good quality. All the varieties of *Souvenir de la Malmeson* and seedlings from it have a tendency at times to produce green knobs in the middle of the flower. I had at least ten per cent. of my flowers like that this year. I pulled the faded petals from one and exposed five of those knobs, like so many flower-buds; but it is a mere freak of nature, and may not occur again on the same plant. A vinery in the winter should not be too hot for them, if the Vines are at rest. It is about the right place. Put them near the roof-

glass, and if green-fly appears, and it is not convenient to fumigate, dip the plants in a solution of 2 oz. of soft-soap to a gallon of water.—J. D. E.

3963.—Flowering plants for a conservatory.—Fuchsias trained up pillars, if there are any, are graceful free-flowering subjects. Camellias are useful for the winter, and as there would be but little syringing them while they are in flower, they would be suitable. The syringing during the spring and summer would be beneficial to the growth of the Camellias. Chorozeamas are useful conservatory subjects, as are *Daturas*, double and single. Acacias in variety are showy. For suspending from the rafters *Bignonia Cherere* and *Tecoma Van Volxemi* are graceful and free-flowering. If room can be found *Maudevilla eucalyptus* is worthy a place.—S. P.

—Amongst Palma and such things you would not get permanent flowers—that is, of the ordinary conservatory type; but if the house is very lofty and provided with abundance of heat, you could grow such things as the *Brownias*; but they require heat, and attain considerable height. If you would say the dimensions of the conservatory, the degree of heat that may be obtained, I should advise you better. I should not really advise you to get such things as *Brownias*, if you have neither the space nor the means at command to grow them satisfactorily. Such climbers, however, as *Bignonia venusta*, *Bougainvillea glabra*, *Jasminum gracillimum*, *Passiflora princeps*, *Plumbago capensis*, and its beautiful white variety, *Stephanotis floribunda*, and the *Tecomas*, would also succeed as climbers if there is a fair amount of heat; but if it is a cool conservatory the *Hebrethamnus* would do well, *H. elegans* in particular, and such very beautiful things as the *Lepagerias*, both alba and rosea, which succeed well under ordinary conditions and give welcome sprays of white flowers in the former kind and in the latter rose. They want a border of peaty soil, and will grow in a quite cold house. You should be able to succeed well with these climbers, that will cover the roof in time. In a constantly damp place, shady too, nothing will grow well. *Pelargonium*, *Hestbe*, *Chorozeamas*, and other things cannot stand such conditions, nor the varied coloured-berried *Per-nettyas*. They all need a drier atmosphere than you can apparently give them, but Ferns may be encouraged more. If you wish the place to be gay you can fill it from another house with things in season, or plant out *Camellias*, *Azaleas*, the very beautiful *Acacias*, such as *A. dealbata*, perfect mountains of flowers in spring; but these require more a temperate house than a damp conservatory. Send a few more particulars as to the heat maintained, and then I can advise you better as to the selection of stove plants.—C. T.

3958.—A rusty plug in a boiler.—I do not know what object you have in wishing to take out the rusty plug, except it is for the purpose of cleaning out the boiler. If that is the only reason I advise you to leave it alone. It may be desirable to clean out the sediment that collects in a boiler, but I do not think it is so necessary as to require you to have the plug bored out. It may be neglected, but I have known the plugs inserted in many different forms of boilers, but somehow or other they never get used; yet the boiler has been none the worse for it.—J. C. C.

—Try giving the head of the plug a few blows with a rather heavy hammer. If this does not loose it, hold a red-hot piece of iron to the plug for a few minutes. A few drops of paraffin-oil poured round a rusty bolt or screw will also often loosen it in the course of a few hours.—S. C. R.

3967.—Treatment of a Myrtle.—A mixture of loam, leaf-soil, and peat, two parts of the former to one of the two latter combined. Plunge the pot in coal-ashes, extending the bottom on tile or piece of slate to make sure the worms do not enter the pot. Supply the roots with water as required, and syringe the leaves nightly after a hot day. By exposing the plant to the full sun's rays the wood will be matured and possibly give a crop of flowers next year. Plants that make strong shoots from the base, however, do not always flower from this part for a year or two until the wood has become thoroughly ripened.

—You may stand the plant out during the summer, and the specimens in tubs are very

handsome, and well adapted for terraces, especially if Agapanthus are also used. In quite the southern counties of England the Myrtle will succeed in the open, but even then gets cut in winter. You may put out the plant during the next few months, keeping the soil moist, and stand it in a moderately shady position. There are several varieties, but no doubt yours is the type. As regards soil, a light loamy compost, not too heavy, but medium in texture will suffice, and put a few crocks in the bottom of the pot for drainage. The variegated varieties are pleasing. Take in the plant early in September, and keep it through the winter in the greenhouse or conservatory. It is a pity such fragrant-leaved things are not more grown in gardens.—C. T.

3912.—Painting hot-water pipes.—Jamp-black, mixed (as paint) with boiled oil. Two thin coats will dry hard and bright in four or five days.—Knox.

3953.—Sulphur for mildew.—The only certain way to cure mildew on Grapes in either a heated or unheated structure is to dust the affected parts with sulphur. If the bunches are badly infested with mildew over those parts with sulphur. That of a brown colour is best, it is less seen than the ordinary kind. In a few days the mildew-spores will be killed. A few sharp puffs of wind by the aid of a pair of bellows will generally dislodge the sulphur. The stems of the Vines should be coated over with sulphur also, made into the consistency of paint by dissolving it with cold water. If the mildew is perceptible on the leaves dust the

COUNTRY HOUSES.

OLDSWINFORD CASTLE, STOURBRIDGE.

ANYONE who admires fine country houses will find pleasure in a ramble in the vicinity of Stourbridge, a town that has in itself many quaint and interesting features. Oldswinford Castle, the home of J. Evers Swindell, J.P., is placed in this picturesque portion of the once-beautiful county of Staffordshire. A glance at the accompanying engraving will show that it is a house of solid architecture, many-angled, and far more imposing than some of the erections of recent date that are often purrile imitations of the most famous "homes of England." There is something more than architectural beauty in Oldswinford Castle, and that is in the many kinds of creepers that hide the bareness of the walls. A house without greenery to relieve its harsh, cold outlines loses much of its old-fashioned aspect; but here we have Jasmines, Roses, Japanese Honeyuckles, the pink and white-flowered Pyrus japonica, and last, but not least, the glossy Ivy; that, as will be seen by reference to the illustration, has overgrown completely the two outside chimneys. We wish that Ivy were more used to hide ugly angles, chimneys, and unsightly corners, as there is certainly nothing that can be used with better effect. Some, let us hope, from a mistaken notion of the character of the finest of overgreen climbers, tear it from the walls, and we could cite instances of folly of this kind. But it neither promotes damp, dry rot, nor any other evils that are supposed to accrue

ORCHIDS.

THE TWO BUTTERFLY ORCHIDS (O. PAPILIO AND O. KRAMERIANUM).

THESE two plants are called Butterfly Orchids, and they will maintain the appearance of those insects. My friend, "O. Hedley," seems to be somewhat mixed in these matters, and he sends me what he calls "the true Butterfly-flower," but I must set him a little bit more straight than he appears to be in this matter, because the flower sent is *O. Kramerianum*, which, although one of the discoveries of the famous Polish explorer and collector, Warszewicz, is not the original Butterfly Orchid, and, consequently, cannot be called the true plant, for *O. papilio* was introduced into our gardens just upon seventy years ago from the Island of Trinidad, I believe. And although the plant may have become established in the woods of that island, I think it is open to very great doubt if it is really a native of that place, as I was told many years ago by a friend who travelled in Venezuela and Caracas, and sent many *Cattleyas* and other Orchids from these regions, that he found many *O. papilio* in the latter country, and who also told me that communications with the mainland and the Island of Trinidad were very frequent, and it, therefore, causes me to doubt if the plant is really indigenous to the island; but if it is so or not does not detract in the least from the beauty of the Orchid. I must say that it really is one of the most beautiful forms of the flower which has come under my notice. Now I must say a few words about the management of these plants, and I know only of one other Orchid that can be associated with these, and that is the little *O. Linningsholi*, of which not much is known. The other members of this section of the genus have great attractions for the amateur Orchid growers, and I have observed many to select good and brilliantly coloured forms with much keenness. Now the first kind named, *O. papilio*, requires a greater amount of heat than many plants from about the same latitude, and I have found them to succeed best when grown in the East Indian house, but they require a nice moist atmosphere, and I like to grow them upon a good-sized block of wood or in a shallow basket, and to keep it from being overloaded with mould about its roots the plants should always be hung in the sun, but do not let the sun, when too powerful, shine full upon it. The other species, *O. Kramerianum*, which my friend appears to be so proud of, I have always found to succeed best when grown a good hit cooler, and I have found it to thrive best until it has become established if treated to more shade than *O. papilio*, but this plant also is best when grown upon good-sized blocks of wood. Avoid the thin, cut-down blocks which have become so very popular with a great many in the trade.

MATT. BRAMBLE.

COMPARETTIA MACROPLECTRON.

THIS very beautiful Columbian plant was introduced here by Messrs. Lowe and Co., of Clapton, some fifteen years ago, and now I have an excellently-coloured variety of it sent me from the West of England from "M. J. T." asking me to say a few words about it? Well, I can say that it is a very free-flowering plant, and the flowers last a considerable time when they have expanded, and, moreover, that it is the largest-flowered kind in the family, so that I cannot say anything against the plant whatever. The plant usually flowers about the month of July, so that the specimen of "M. J. T." is flowering a month before its time, which, I suppose, however, is caused by the earliness of the season. This plant grows upon trees in its native home. It is an evergreen, and it produces its drooping spike from the base of its small bulb, which usually bears a single leaf some 4 inches in length. The flowers are about 2 inches across, and of a beautiful soft rose-colour, spotted and tinged with rosy-purple. The best plan to grow the plants is to use for its accommodation small, shallow, earthenware pans, drained well, using soil some good peat-fibre and chopped Sphagnum Moss; but do not use much soil about their roots, and this should be changed annually just before the plants begin to grow. They should be hung up in the full light; but they should not be exposed to the sunshine, but a light



Oldswinford Castle, Stourbridge.

affected parts also with sulphur. Mildew in vinerias is generally caused by draughts of cold air. Opening both top and bottom ventilators when the Vines are in bloom is the most frequent cause of mildew. If this be the case with "Leopardtown's" Vines I should advise him to close the front ventilators for a time and keep the atmosphere inside the house as dry and as buoyant as possible, so as to avoid a stagnation. Sulphur sprinkled about the floor and border of the house will assist in driving away the mildew pest.—S. P.

—Sulphur dissolved in water and applied with a brush to hot-water pipes will destroy mildew, but the pipes must be made so hot that the fumes will be strongly felt in the house; it will in this condition destroy red-spider on the leaves as well. As the house is unheated the sulphur must be puffed upon the leaves with an appliance the seedsman sell for the purpose. There are various kinds of sulphur dustors, but a good thing may be made by putting some in a muslin bag, and as the bag is shaken the sulphur flies out in a fine dust on to the leaves where the mildew is. It will kill the parasite wherever it touches.—J. D. E.

—In an unheated house dust the sulphur on the parts affected with mildew. In bad cases this is the best way of applying it. Where the attack is slight mix sulphur in water and syringe the Vines with it. Mix the sulphur with a small quantity of water first, and then fill the pot with water. When the mildew is destroyed the sulphur can be washed off with the syringe.—E. H.

—Scatter the sulphur on slates or sheets of iron or tin, and place them where the sun shines full on them, and the house will soon be filled with the mildew fumes.—E. C. R.

from its use. The widespreading lawn in front of the house is another feature we are pleased to see, but would rather have had the mass of shrubs in front of one of the principal rooms removed; it looks like a patch on a beautiful carpet, and hides a full view of the house. Travellers by rail to Worcester will have an excellent and picturesque glimpse of Oldswinford Castle between Stourbridge and the famous cathedral city.

3959.—Carnations, &c.—Young plants of *Souvenir de la Malmaison* produce quite as large flowers as the old plants if they are well established and grow under the same cultural conditions. The plants may have been poor weak things, and have not been long enough established in the flower-pots. They should be well established in flower-pots early in the autumn, and if good soil is used and the plants are repotted into larger flower-pots in the spring, in a compost of good yellow loam three parts, one part decayed manure, one part leaf-mould, and a good sprinkling of sand, the results will be highly satisfactory.—J. D. E.

—My experience of Carnations is that the young plants produce fewer but decidedly finer blooms than the old. This holds good with many other perennials; for instance, the year-old plants of *Delphinium formosum* produce flowers at least half as large again as well established clumps.—A. G. BURLING.

3961.—Blood as manure.—Blood is a powerful stimulant, but it does not mix well with water unless obtained quite fresh. Should be very much diluted. I have used it at the rate of one of blood in six of water for Vines, Tomatoes, and other things growing in borders, but I think it should be still further diluted.—E. H.

shades should always be in readiness to be run over them in the case of sunshine. They enjoy a moist atmosphere, and during the summer season they enjoy an abundance of water, and even during the winter season this beautiful little plant requires careful watching, and should be kept just moist. A great mistake used to be made in the management of this pretty, and, for the most part, gay-coloured family of plants, by growing them in too hot a temperature; but I have found them to succeed best and to flower freely when grown in an ordinary stove, and this plant in particular enjoys a cool temperature and grows well enough if it is kept free from a little white scale which is apt to get down into the sheathing bases of the leaves, when if this is allowed to remain undisturbed, it will soon undermine the health of the *Compansettias*.

MATT. BRAMBLE.

ROSES.

A HARDY WHITE ROSE.

DURING the past three winters I have had a plant of a White Rose that has braved the cold weather unharmed on the north front of my house, where the sun never shines; and as I write, on the first of June, it is as vigorous and as full of flowers as ever I saw the same Rose in any other position. Its name is *Mme. Plantier*, an old Rose that, for fragrance and the purity of its colour, is not surpassed, if equalled by, any other, new or old. I do not wish to claim that I have discovered anything new in the behaviour of this Rose; its hardy character may perhaps be known to some people. I do, however, say that until the last two years I should have looked with suspicion upon the advice had I seen it recommended for planting in a north aspect. There could not be a colder position than the plant I refer to occupies. So that no one need fear to plant it for covering a north wall or fence, and if they are fond of sweet-smelling Roses they will not forget it. By the way, there is another old Rose that has delighted many of my friends lately on account of its exquisite fragrance and delightfully-formed flower-buds. I allude to *Blairi No. 2*. The colour is pink, and it does well for covering low walls, or as a standard, if not hard pruned.

J. C. C.

3973.—*Marechal Niel Rose in a vinery*.—I can only suppose the reason that your plant did not flower was the wood was insufficiently matured. When growing on the back wall of a vinery the dense shade afforded by the vines in such a late house as yours would preclude an early ripening. Probably, too, you started fire-heat late in the autumn to assist in finishing off the Grapes. If so, you naturally kept the sap in the Rose on the move more or less all the winter. The strong growing Roses all want a short period of complete rest. I would advise your letting the plant grow at will, and trust to its getting better ripened owing to such an early ripening.—P. U.

—When you better understand the behaviour of this Rose, you will not regret that your plant did not flower this year. Had it done so it would not have made the long shoots of which you speak. If you can get the growth it is now making well ripened you will get a flower at every joint the whole length of these shoots next spring. From this you will learn that the young shoots should not be cut off. I am afraid, however, that you will have some difficulty in ripening the growth, as unripe wood was the cause of its not flowering this season. The same thing so often happens when the growth of this Rose is trained on the back wall of a vinery that I never recommend it being so trained. A good deal, however, depends on the amount of light that reaches it.—J. C. C.

3975.—*Roses, &c., in a greenhouse*.—As you want Roses for cut-flowers only, I would discard both *La France* and *Star of Waltham*. Replace the former with *Mme. Falcot*, and the latter with *General Jacqueminot*. These are really good. Here are a few more good varieties that are not climbers: *Niphetos*, *Anna Ollivier*, *Homère*, *Luiole*, *Safrano*, *Sunset*, *Innocente Picola*, *Mme. Hoste*, and *Perle des Jardins*. If you have a back wall it would be best to use a climber. In that case *William Allen Richardson* or *L'Idéal* should succeed your present

admirably. Purchase them in pots, and pot on according as your judgment guides you—say, every two years after they have attained to a 10-inch pot. The health and size of the plant must be taken into consideration, and it is not safe or easy to lay down a hard-and-fast rule. Do not shake the soil from the roots. Remove the bottom crocks, also any loose soil, and as much from around the crown of the plant as is possible without disturbing many of the roots. No; it is not essential to have yellow-loam. This is excellent, certainly, but difficult to procure. Almost any good loamy soil containing a fair mixture of decayed vegetable matter and dung will do as well. A cold frame, such as you suggest, is the best place of all to winter them in. Bring in the most forward first, but in such a small structure I would use them in one batch, and as the varieties I have named continue to bloom in successional crops I think you will find that a much better plan in your case. Prune at the end of November; stand them in the frame to keep them there until the middle of January. They will then be swelling out, and come on rapidly when introduced to heat. Your house is very small for miscellaneous plants, and Roses will need a lot of attention to keep them free from insect pests under such circumstances.—P. U.

3976.—*Marechal Niel Rose in a greenhouse*.—You are treating your Rose very well indeed, and may continue on the same line for some time to come. Confine the new growths to three shoots, and get these as strong as possible; you can soon see which are going to grow away the strongest. By the end of September let your plant have as much air as possible. This should not be difficult, because your house will be comparatively empty until such subjects as *Azaleas*, *Bouvardias*, &c., are housed again from the open. If you can secure wood fairly well stored you may be certain of a good crop next season.—P. U.

—I do not see that your treatment can be improved upon, and I should say you are likely to reap a full measure of success with this Rose. Seeing that it has made good growth already, continue to give manure-water in dry weather up to the end of August. The young shoots should be trained to wires, which should be about 9 inches apart and 1 foot from the glass. Before winter sets in you must protect that part of the stem that is outside the house. This is best done by wrapping some haybands round it. The surface of the border should also be covered in the winter 3 inches thick with long dry litter or tree-leaves. You may leave the shoots their whole length or cut off the soft-green tops about the end of November.—I. C. C.

The Hybrid Perpetual Rose.—I have been sometimes asked to define a Hybrid Perpetual Rose—to say what it is and where it comes from. This is a very natural question, as it is more largely grown than any other section, although the Tea-scented flowers are strong rivals in popularity. It may interest readers of *GARDENING* to know that Mr. Wm. Paul, of Waltham Cross, in his lately-published "Contributions to Horticultural Literature, 1843-1892," mentions: "I do not think it is possible to say when the first Hybrid Perpetual Rose sprang into existence. It is much easier to speak as to the origin of the group. It is descended from the Four Seasons' Roses (*R. damascena*), through the *Damask Perpetual* on the one side and the *Gallica*, *Hybrid China*, *Bourbon*, and almost every other group on the other side. If we go back to the year 1812, when the *Rose du Roi* was raised in the garden of St. Cloud, near Paris, we shall find in that variety a marked divergence from all pre-existing kinds, and the compilers of catalogues of that day must have been puzzled where to place it. Apparently a hybrid between the *Damask Perpetual* and the *Gallica*, it was grouped with the former because it produced flowers in the autumn. M. Vibert's catalogue of 1820 offers eleven varieties of Four Seasons' Roses, among which is *Palmyre*, raised in 1817, and following, except in point of colour, the *Rose du Roi*. Then and later on a few others might have been called Hybrid Perpetuals. In 1844 was published '*La Rose, &c.*', by J. L. A. Loiseleur Deslongchamps, in which 'Rose Perpetuelle remontante' figure as a separate group by the side of *Damask Perpetuals*. These and others form the Hybrid Perpetual of

the English catalogues." Thus in a nutshell is given a brief outline of the beginning of the splendid race of flowers that attract thousands to the Rose shows held throughout the length and breadth of England.—C. T.

FRUIT.

3957.—*Fruit-trees and insects*.—First go over the trees and take off a few of the badly attacked shoots and leaves, and then dust the affected parts with Tobacco-powder. Syringe with soap-suds or soft-soap and water in twenty-four hours after the Tobacco-powder has been used. This will clear off a good many of the insects, but not all. Repeat the Tobacco-powder dressing and syringing until the trees are quite clear. There is no better or cheaper way of cleansing fruit-trees.—E. H.

—If you had mentioned the name of the insect that you say spoils your fruit, one might have helped you with some useful advice. It seems to me that it is woodlice that eat your Apricots, Peaches, and Nectarines. These break the skins, and then ants follow them in their work of destruction. If it is woodlice you will find them in the crevices of the wall, from which they should be dislodged. Hollow Bean-stalks placed amongst the branches will afford these insects shelter, and if the stalks are examined once a day you will be able to kill a good many of your enemies.—J. C. C.

—I presume the felix is attacked mainly by the aphid family. This pest is the most troublesome this year, and decidedly the worst to get rid of. Syringe the trees in the evening with the following mixture, thoroughly wetting every part, and well wash the foliage the next morning with clear water. Well soak 2 lb Tobacco-paper in hot water, pouring off the liquid several times to extract all the strength from the paper. Dissolve 3 lb. soft-soap in hot water to the ingredients named, add 40 gallons clear water, apply with a fine-roset syringe in preference to the ordinary rose, with a view to economising the mixture. If used at a low temperature of 60 degs., it is more effective than when used cold.—S. P.

3972.—*Treatment of a Cherry-tree*.—The tree is making growth too fast; it needs root-pruning to check its progress. At the end of September is the best time for this treatment to be carried out. Dig out a trench 1 foot wide all round the tree 4 feet away from the stem, and as deep as roots are found, cutting all off that are come in contact with. This will have the effect of inducing fibrous roots to be made, which are really the feeders of the tree. Long fibrous roots only tend to luxuriant growth, and as this cannot ripen thoroughly the tree cannot produce a crop of fruit. Maturation of the wood is of the first importance in all fruit cultivation, and without it no hardy fruit can be a success. Do not allow the shoots to over-crowd each other, but give all space to mature in the autumn. Nothing less than 2 inches ought to be allowed for new growths. Do not give manure in any form to the tree as it is too luxuriant already, but if there is any suspicion of the roots being dry, give them a thorough soaking of clear water. Remove all suckers from the base as fast as they show above the surface. When root-pruning in the autumn, if no roots are found within 6 inches of the surface, the soil ought to be removed and the roots lifted, so that they have the benefit of warmth from the sun.—S. P.

Strawberry "Noble".—This would be indeed a fine variety, "barring the flavour," as expressed by "B. C. R." in *GARDENING*, p. 212, but it is precisely flavour that one wants. I do not care whether a plant is phenomenally productive, vigorous, and with large, handsome fruit; if it does not possess fine flavour it is comparatively valueless. I have just tasted some fruits of this variety, but they were far from satisfactory—watery, and without the true Strawberry flavour that one gets in British Queen, for instance, or even President. Noble is early, and to be got under circumstances quite against other kinds, but flavour is certainly the more important consideration. Perhaps Mr. Laxton, who, I believe, is the raiser, will in time raise other Strawberries with all the good qualities of Noble, and of brisk, pleasant flavour.—C. T.

TREES AND SHRUBS.

THE MAGNOLIAS.

There are about a score species of Magnolias known to botanists, and all but some half-dozen or so are in cultivation in this country. The head-quarters of the genus are in China and Japan, a few are peculiar to the Himalayan region, and a few more to North America. All are handsome and desirable trees or shrubs; some, indeed, may be classed with confidence amongst the most beautiful objects to be met with in the gardens of temperate climates. A glance at the accompanying engraving, representing a very fine specimen of the Yulan (*Magnolia conspicua*) of China and Japan, will show what glorious effects may be obtained in spring in the South of England, at any rate, by its use. It is true enough, unfortunately, that frosts sometimes injure the flowers, and change their snowy whiteness into an unsightly brown. Perhaps the reason that this Magnolia and its allies are not more frequently met with in gardens is owing to the fact of their not transplanting readily. The best results obtain if the plants are procured and planted just as growth begins in spring. The fleshy roots when injured rot rapidly, and when autumn planting has been practised, very many individuals succumb to the ordeal, those that do not do so outright often struggling on in a pitiful plight for years. A little care in transplanting in spring, in sheltering with mats from dry winds or hot sun, and in syringing the wood to prevent shrivelling until the plants are thoroughly established, would do much to prove that the Magnolias can be planted with every prospect of success. Some species occasionally ripen seed freely in this country, and it is well worth while to sow this seed at once. If dried and kept like other seeds until the following season, all chance of germination will have passed. All the species of the natural order Magnoliaceæ have seeds which retain their vitality but a very limited period.

M. ACUMINATA (the Cucumber-tree of the United States) makes a noble specimen when planted singly in the park or pleasure ground. It is deciduous, the leaves varying from 5 inches to 1 foot in length, and glaucous green, the flowers yellow-tinged, bell-shaped, and slightly fragrant. There are fine examples of this tree at Kew, in the gardens of Syon House, Claremont, &c. In its native habitat it attains a height of from 60 feet to 90 feet, with a trunk from 2 feet to 4 feet in diameter. The Yellow Cucumber-tree (*M. cordata*) is regarded by Professor C. S. Sargent in his magnificent work, "The Sylva of North America," as a variety of *M. acuminata*. It is a rare plant in a wild state, as it does not appear to have been collected since Michaux found it in Georgia.

M. CAMPBELL, one of the most gorgeous of Indian forest trees, has not fulfilled the expectations of those who took so much trouble in introducing the species to British gardens. In a wild state it attains a height of 150 feet, and the fragrant flowers, varying from deep rose to crimson, are produced before the leaves appear. Probably the finest specimen in the British Islands is the one at Lakeland, near Cork, which ten years ago was 35 feet high. Perhaps Mr. Gumbleton would be good enough to inform us what progress the tree has made since then. In 1884 it flowered for the first time, and a figure was prepared for the *Botanical Magazine* from

material forwarded to Kew by the late Mr. Crawford. Considering the beauty of *M. Campbell*, it would appear worth while to treat it as a well plant against some high building in a warm, sunny position. As it occurs in a wild state along the outer Himalayas, at elevations of from 800 feet to 1,000 feet above sea-level, there seems every probability that the treatment suggested would prove successful.

M. CONSPICUA.—In its typical form this has snowy-white flowers, which are produced in the greatest profusion in the latter part of April and beginning of May. Splendid specimens of this beautiful Chinese and Japanese tree are to be seen at Gunnersbury House, Syon House, Kew, &c. *M. Yulan* and *M. precis* are names under which this is found in some books and gardens. Several hybrid forms between this species and

creamy-white in colour, and are produced inter than those of any other cultivated species. In a wild state the tree attains a height of from 30 feet to 50 feet.

M. GLAUCA, the Laurel Magnolia or Sweet Bay of the Eastern United States, is a delightful sub-ovogreen shrub, with oblong or oval leathery leaves, bluish-green above and silvery below. The flowers are globular in shape, very fragrant, opening of a rich cream colour, and gradually acquiring a pale-apricot tint with age. In a wild state this species occurs in swamps, and attains a height of 20 feet. A large-flowered form (*M. Thompsoniana*) originated, according to Loudon, about eighty years ago in the nursery of a Mr. Thompson at Milo-end. It is figured in the *Botanical Magazine* as *M. glauca* var. *major*, and in other publications.

By far the most faithful and characteristic representation, however, is given in *Garden and Forest* for 1888. Professor Sargent there says: "It has been considered a large-flowered variety of *M. glauca*, and by some authors a hybrid between *M. glauca* and *M. umbrellata*. It is probable that the latter supposition is correct, as, although the leaves of *M. Thompsoniana* cannot be distinguished from those produced on a vigorous plant of *M. glauca*, the leaf-buds are quite glabrous and destitute of the silky hairs which cover those of that species, while the broad, strap-shaped reflexed sepals and obovate-oblong petals, contracted into a narrow oval, distinctly belong to *M. umbrellata*; the flowers, rather more than 6 inches across when fully expanded, being intermediate in size between those of the two species. They have, on the other hand, the delicious fragrance peculiar to those of *M. glauca*. So far as I know, *M. Thompsoniana* does not produce fruit, and it is a curious fact that it is much less hardy than either of its supposed parents, suffering here always unless carefully protected in winter, and rarely rising above the size of a small bush, although Loudon, . . . speaks of trees at Milo-end more than 20 feet high. I shall be glad to see fruit of this plant, and to learn if it grows more vigorously in Europe than it does in this country."

M. GRANDIFLORA, the great Laurel Magnolia of the Southern United States, is in England best treated as a wall plant; under these conditions it thrives well and flowers freely. In order to form some idea of the beauty of this species it is necessary to see it in large symmetrical, stately trees in the West of France, &c., where climatic conditions obtain which more nearly approach those of its native habitat. In *Bartram's Travels*, that enthusiastic lover of Nature exclaims: "Behold yon promontory, projecting far into the great river, beyond the still lagoon, half-a-mile distant from me: What a magnificent grove arises on its banks! How glorious the Palm! How majestically stands the Laurel, its head forming a perfect cone! Its dark-green foliage seems silvored over with milk-white flowers. They are so large as to be distinctly visible at the distance of a mile or more. The Laurel Magnolias that grow on this river are the tallest and most beautiful that I have anywhere seen, unless we except those which stand on the banks of the Mississippi. . . . Their usual size is about 100 feet, and some greatly exceed that. The trunk is perfectly erect, rising in the form of a beautiful column, and supporting a head like an obtuse cone."

In the *Garden*, Vol. II., page 205, there is a fine illustration of the (*Magnolia grandiflora* at



OUR READERS' ILLUSTRATIONS: The Yulan (*Magnolia conspicua*) in the garden at Gunnersbury House. Engraved for GARDENING ILLUSTRATED from a photograph sent by Mr. J. Weston.

M. obovata occur in gardens: of two of these, *M. Lenné* and *M. Soulangeana nigra*, coloured plates have been published in the *Garden*. *M. Soulangeana* has flowers similar in shape and size to those of typical *M. conspicua*, but they are deeply tinged with red; *M. Soulangeana nigra* has dark, plum-coloured flowers. Both these bloom a week or ten days later than the type. Other seedling forms or slight varieties of the Yulan are *M. Alexandrina*, *M. oyathiformis*, *M. speciosa*, *M. spectabilis*, *M. superba*, *M. triumphans*, and *M. Yulan grandis*.

M. FRASERI, a native of the Southern United States, is easily recognised by its light green spatulate leaves, varicled at the base; they each measure about 2 inches or 1 foot in length, and about 3 inches or 4 inches across at the widest part. The flowers, each of which measure 2 inches or 4 inches in diameter, are

Horns." Professor Sargent, in his "Sylvia of North America," adopts the name of *M. foetida* for this species. In *Garden and Forest* for 1883, one writer urges the claims of this species as the national flower, and states that it "was among the favourite trees, if not the special one of Washington. An imposing specimen over 75 feet high, known to have been planted by his own hands, still flourishes at Mount Vernon, and every year, since this modern Mecca has been accessible to the public, each fallen petal of its laded blossoms, every glossy leaf of its rich foliage, and every seed that drops from its fruit pods, have been carried away as precious souvenirs by the visitors to that hallowed spot."

51. *HYPOLEUCA*.—So far as we have been able to ascertain, the only figure of this beautiful species (excepting one in a Japanese publication which is not easily accessible) is in *Garden and Forest*, Vol. I., page 305. From an economic standpoint *M. hypoleuca* is perhaps the most important of all the Magnolias; the wood is straight grained, easily worked, and dull yellow-gray in colour. It is the wood commonly used by the Japanese in the manufacture of objects to be lacquered; it is preferred for sword sheaths, and the charcoal made from it is used for polishing lac. In the southern part of Yesso it is abundant in the forests, and forms fine trees 60 feet or more in height, with a trunk diameter of 2 feet. The leaves are broadly obovate, a foot or more long, and 6 inches or 7 inches wide, dark-green and smooth above, and clothed with white hairs beneath. The flowers are creamy-white in colour, deliciously fragrant, and when fully expanded measure 6 inches or 7 inches across, the brilliant scarlet filaments forming a striking contrast to the petals. There are no large specimens as yet in this country, but as the species thrives well in the North-eastern United States, it is fair to assume that it will do well in Britain.

M. KORUS, a Japanese species, grown in the United States under the name of *M. Thunbergii*, is as yet very uncommon in this country, and we have not yet seen it in flower. In habit it seems to approach dwarf-growing forms of *M. conspicua*.

M. MACROPHYLLA.—This, unfortunately somewhat tender in a young state, is worth growing simply for its beautiful leaves, which are green above and clothed with white hairs beneath; they attain a length of upwards of 3 feet. The open bell-shaped fragrant flowers are white, with a purple blotch at the base of the inner petals, and measure 8 inches or 10 inches across. In its native habitat, the Southern United States, it forms a tree from 20 feet to 40 feet in height, with a trunk rarely exceeding a foot in diameter.

M. OBOVATA is a native of China; in Japan it only occurs in cultivation. It is a dwarf-growing bush, perfectly hardy in the South of England, and bears freely its purple, sweet-scented flowers, though not in the same profusion as are those of the white-flowered *M. conspicua*. This species has a number of synonyms. Amongst these are the following, which are the most frequently met with in books and nursery catalogues: *M. diicolor*, *M. decudata*, *M. hilsifera*, *M. purpurea*, *Talauma Sieboldii*, &c. There are several varieties, but these differ so slightly from each other and from the type, that descriptions without good coloured figures would be next to useless. The best are *Borreri*, *angustifolia*, and *erubescens*.

M. STELLATA.—An excellent coloured plate of this very beautiful Japanese shrub was published in the *Garden* in June, 1878, under the name of *M. Halleana*. This species is the earliest of the Magnolias to flower, and it should be extensively grown for the beauty of its starry-white flowers. A variety with blue-coloured flowers, sent from Japan by Mr. Marles, has not yet been sent out by Messrs. Veitch, but it grows freely in their Coombe Wood Nurseries, and will doubtless become as great a favourite as the type. Both are dwarf-growing deciduous shrubs.

M. TRIPETALA, a native of the Southern United States, has large, slightly-scented white flowers, from 5 inches to 8 inches across, and obovate-lanceolate leaves from 1 foot to 3 feet in length; in a wild state the tree rarely exceeds 40 feet in height. Philip Miller was the first to introduce this fine species to British

gardens. Other names for it are *M. umbrella* and *M. frandosa*.

M. WATSONI.—A coloured plate of this very beautiful Japanese species was published in the *Garden* in December, 1883, under the name of *M. parviflora*; at that time it had not flowered in British gardens. It is quite hardy. It has large, creamy-white, fragrant flowers, with petals of great substance and deep-red filaments, which add materially to the beauty of the blossoms. The true *M. parviflora* is probably not in cultivation in Britain. N.

WHITE AZALEA INDICA AT COOLBURST.

THERE are few plants or shrubs in our gardens that will produce such an intensely white mass of blossoms as this; consequently, the effect which it creates when seen flowering as shown in the engraving on p. 223, is to a great extent different from most of the things usually met with. Few plants give so little trouble when once established, and even though the late frosts may now and again spoil the beauty of the flowers, yet in the intervening years it is something to be grateful for. I have before this called attention to its habit of growth when planted out and left alone, not much more than 3 feet or 4 feet in height, dense-growing and spreading, neither suggestive of a white umbrella lined with green nor of a gigantic sugar-loaf which has been packed in coloured wrapper, as some of the much-praised inhabitants of the Azalea-house usually are. The engraving shows part of a bush 10 feet across with a shadow thrown over the upper part by a tree of *Magnolia acuminata*, which grows at the side. On the south-east is a large clump of *Rhododendrons*, &c., completely cutting off the morning sun, and behind it are *Hollies*, *Rhododendrons*, and *Spiræa flagelliformis*. This, perhaps, may give some idea of the position it occupies and apparently is satisfied with—namely, shelter from cool winds and too fierce a sun on the flowers or on the roots. Anyone who intends to plant this Azalea should remember that it flowers naturally at a time when there may still be late frosts and cold winds hovering about, and that it would be a mistaken kindness to choose any place, such as under a south wall, which would tend to make the blossoms open earlier in the season. We have some plants under a north wall which do admirably, but they seem to like association with other things, and not to be spotted out by themselves in the open. The variety which does best here is the old typical white. Overgrown plants of other colours from the greenhouse have been turned out sometimes, but they do not seem so happy or produce so good an effect. I cannot but think that a good race of hardy sorts might be raised either by hybridisation with some other species or by careful selection of sturdy growers. It would be worth while, as the effect produced by *Azalea indica* is far more distinct from that of *mollis* or any similar variety than one might expect. The photograph from which the engraving is made was taken last year, not because the bush was flowering more freely than usual, but because an opportunity presented itself by the kindness of a worthy friend. C. R. S. D.

3952.—*Evergreen under Limes*.—I am afraid you will not get Evergreens to grow under Lime-trees if the latter are already established in the soil. The case would be different if the trees and the Evergreens were planted at the same time. The Common Laurel is the only subject likely to suit you; even for that you ought to put a loam in depth of good soil over the border to plant them in. If you would be content with shrubs of a lower stature you would be more likely to succeed with such Evergreens as *Aucuba*, *Green Holly*, *Box*, *Yew*, and *Euonymus*.—J. C. C.

—There is nothing so good as Common Laurels for planting under trees where an evergreen growth is required. It would be useless, however, to plant even Common Laurels if the site was not well prepared for them. For every tree a hole 2 feet wide and 18 inches deep should be taken out, thoroughly breaking up the bottom of the hole. Add manure freely when planting, and mulch the surface afterwards with well-decayed manure, not only to keep the soil warm during the winter, but also in the

summer, and to prevent the evaporation of moisture. Early in October is the best time to plant, the roots then have time to make a start before severe weather sets in, especially the cutting winds of March.—S. P.

—Hollies would make a splendid background, but would be a long time in growing to the height of 10 feet. If the Limes are not crowded, the Lawson Cypress or *Thuja gigantea* might do. Portugal Laurel or Evergreen Oaks will also be suitable.—E. H.

—Hollies, Myrtles, and Privet will answer your purpose; but you must not expect them to grow to the height of 10 feet in one year, or to leave off growing when they attain that height.—A. G. BERRER.

3963.—*Shrubs near a drive*.—If the shrubs have much over-grown the drive they should be cut back in the spring, about the end of March—that is to say, if you have to cut back to the old hard wood. But if a slight trimming will get them back efficiently they may be dealt with at once. Whether you cut back the *Rhododendrons* little or much it will certainly prevent their flowering the next year. The syringe can be dealt with at the same time and in the same way as the others. As a rule, it is better to do such work in the spring.—J. C. C.

3971.—*Caterpillars in a shrubbery*.—If I am afraid you cannot get rid of the caterpillars other than by hand-picking, no ordinary syringing will do any good, as the water will not penetrate the web. I fancy a smouldering fire made up under the trees which will give off an obnoxious smoke would be more likely to penetrate the rolled-up webs and dislodge the insects. The plant you allude to must be, I think, the Spindle-tree (*Euonymus europæus*); in some districts this is also called Squaw-wood. Although a native, it is a very pretty tree in early winter.—J. C. C.

—The caterpillars are doubtless, from your description, those of the Lackey moth, and half the battle in dealing with such pests is to destroy the eggs that circle the young branches. You can see them in the spring, and then is the best time for action. I should give the bush a thorough syringing with paraffin, say, an ordinary wineglassful mixed into about five gallons of water. It is necessary to thoroughly dilute the paraffin, and I think this will be proved a remedy; but possibly the caterpillars have by this time devoured the leaves. This is the pest that proves so mischievous to Hawthorns, and also the Apple. A quick way is to handpick them, dropping the webs into hot water; but this is not, of course, so cleanly a process as syringing.—C. T.

3925.—*Gardening for profit*.—Presuming that you intend to dispose of the produce in the neighbourhood, you must in the first place make yourself acquainted with its requirements. Vegetables of all kinds are, of course, in demand; fruits are sure to be wanted, and you cannot err in planting a good breadth of such Strawberries as Noble (early), Paxton (main crop), and Marshal McMahon for late bearing. Black Currants are always wanted for preserving. I should also grow some of the best hardy flowers for cutting, such as Pinks, Carnations, Roses, Cornflowers, Pyrethrums, Perennial Asters, &c. The profit per acre will depend on the culture and prices obtainable.—J. C. B.

Gathering flowers.—There is a right and wrong way of gathering flowers. As a rule, they should be gathered before fully expanded, especially in the case of such things as the Iris, which, when picked quite in the bud state, open perfectly in water, and the same remark applies to the Peony, not a very likely flower from its aspect to open in water. Cut the flowers of all plants early in the morning when the dew is upon them, as if picked in the midday, when dried by the sun, they soon fade in the house. Always keep the water constantly changed, and remove a little bit of stem each day. Avoid crushing them in any way, and though a good bowlful is attractive, there is no need to press the flowers close together so as to bruise them. They will keep fresh longer in a cool room than in one that is hot, dry, and lit up at night with gas. These few hints may be of use at this season, as the garden is now gay with colours, and everyone tries to have flowers in the vase. Sometimes they are purchased in the market, and it is wise to avoid the expanded flowers. Buy those that look fresh, even if not fully open. V. C.

OUTDOOR PLANTS.

THE PLANTAIN LILY.

FOR gardens in general, whether small or large, and especially those near large towns, where it is difficult to get anything to grow satisfactorily, the Plantain Lily or Funkia is of great service. It withstands with impunity the trials of town-life, and their fine foliage is always a pleasure to look at. I remember two specimens of *F. ovata* that stood for years in a garden at Lexington, and increased in beauty each season, although very little trouble was taken with them in the way of culture. The leaves were kept sponged occasionally and the plants kept well watered, a necessary thing in a hot and dusty forecourt. The flowers are not so noteworthy as the leaves, and the finest kind is *F. grandiflora*, on which several notes have recently appeared in GARDENING. The Funkias are natives of Japan, and good, bold groups are made of them in some of the London parks,

of note, the leaves being well marked, not spotty or blotched, a very objectionable type of leaf-colouring. *F. Fortunei* reminds one strongly of *F. Sieboldi*, and is strong in growth, whilst the leaves are glaucous in colour, and very pleasing. Of course, one does not want a large collection of Plantain Lilies in a garden, and there is *F. subcordata* and *F. lancifolia*. Of the latter there are several very good variegated kinds, such as *undulata variegata* and *alba variegata*, which are very pleasing in petal. A few of these plants in a greenhouse are an attraction, making good tufts of foliage, and they look well in the lower parts of the rock garden. It is difficult to know why the Funkias are not more grown in small gardens. They are not well grown, I think, but when in gardens it is found difficult to get plants to grow well. The Funkias should be thought of *F. ovata* or *F. Sieboldi* to begin with. They require ordinary soil. C. T.

3950.—**Unproductive border.**—If the border could be broken up and the soil improved

Asphodelus luteus, Violets, Snowdrops, and many of the spring-flowering bulbs. A large number of things would grow in partial shade if the soil is fairly moist and of a substantial character. But stones will not support life, except a few weeds that one does not care for. If the ground is good and kept moist, not overrun with Laurels, you might make an interesting spot of this border. The Christmas Rose would succeed, and this is a host in itself, with its many charming varieties, whilst you could also have several kinds of Primrose, good, brightly-coloured forms; but you must remember that this cannot be attained if the soil is hot, dry, and the border absolutely covered in with trees. —C. T.

—The best thing you could do would be to throw the soil out against a coarse sieve, and thus get the largest stones out of it. As it is, you can grow Solomon's Seal, German Iris, Brocken (if planted in a little peat), and various Stonecrops; but if you get rid of the larger stones many other things will do well in it.—A. G. BURTON.

3948.—**Good lawns.**—To have a good lawn you must first have a good soil from 9 inches to 1 foot in depth. Having secured a good soil, the next thing to do is to get turf with a fine herbage and to lay it down in a proper manner, or, after the land is well prepared, you may sow Grass seeds in the spring. In either case coarse Grass and weeds must be weeded out, but first bear in mind you cannot have a lawn that will appear in good condition in all sorts of weather without a pretty good depth of rich soil on the surface. Such weeds as Plantains and Dandelions should be first dug out and the hole so made filled up with petroleum, which is just as effectual as using any kind of poisonous acids, without the attendant risk. In every case where the Grass is thin owing to the poverty of the soil, a good dressing of rotten-manure laid on in November will do much good.—J. C. C.

—After repeated trials with various suggested remedies I find that digging up the weeds by the roots in the easiest way is the best plan. Fill up the holes caused by the weeds with fine soil, in which at the time drop a few seeds of suckling Clover; this quickly germinates and makes green the bare patches. If the lawn is infested with Moss, scratch the surface with an iron-toothed rake, sow on wood-ashes, soil, and lime, two parts of the former to one each of the latter. Cut the Grass weekly with a lawnmower and roll it down as often as possible when the weather is favourable. Lawns are like gravel paths—they cannot have too much rolling, provided it is done at the right moment—directly after rain.—S. P.

—To get a good lawn, the ground must be thoroughly well drained and the turf of the best; also it must be well laid. Half the questions received about unsatisfactory lawns may be answered by saying they are badly drained. You complain of weeds—Daisies, Moss, Dandelions, &c., I presume. As regards weed-destroyers, acids and like applications, they must be used with extreme care, otherwise havoc will ensue. Vitriol I should never advise being used on a lawn, although it is efficacious on garden paths that are very weedy. The old-fashioned plan of digging the weeds, Daisies, &c., out by the root with an old knife or bit of iron is excellent. To get out the root, the surface may be scratched with a rake and the ground sprinkled with wood-ashes or leaf-soil. Of course, the spring is the best season for this work, and any serious alteration in the turf now would prevent its use for this season. A good thing is to sprinkle over some well crushed nitrate of soda, as doubtless the reason of the Daisies coming up is poverty of the soil. If the lawn is very bad, but you want to play tennis upon it for the summer, I should thoroughly overhaul it this winter, relaying the turf and putting down good drainage of coal-ashes.—C. T.

—I am not sure there is much gain in using sold after digging the weeds out. A boy or woman can do the work. But what ruins lawns is neglect in the mowing, leaving the weeds to seed. Let the Grass go without mowing for a month, and there will be weeks of labour in weeding.—F. H.

3962.—**Allotment garden.**—By all means bury the turf as digging proceeds; it will be far more beneficial to the land used in that way than either burning or stacking in a heap. The land ought to be trenched 2 feet deep, to commence with, taking care not to bury the turf more than 9 inches deep from the surface. Keep the soil from the bottom of the trench still in the same position when broken up, and preserve the



The White Indian Azalea in a wood at Coolhurst. (See page 222.)

where they make fine features, as the foliage, whilst broad, is of a charming glaucous colour, with a delightful silvery tint. Then there is the additional feature of the flowers, which vary from white to soft-lilac. The Funkias, especially the better variegated kinds, are useful to make edgings to large beds, and their hardiness is such that if there is no greenhouse or even garden, merely a backyard, the plant may be grown to perfection. A very fine kind is *F. Sieboldi*, which will grow between 2 feet and 3 feet in height, and the cordate, silvery leaves are very broad. The flowers are very tender lilac in colour, and carried in tall spikes. Of this, as of most of the other kinds, there is a variegated variety, which has the broad leaves edged with a yellow colour. One of the best kinds is *F. ovata*, and may be recommended, as the growth is unusually robust, therefore it is better adapted for town gardens than the others. The leaves are large, ovate in shape, as suggested by the name, and of a good shade of green in colour, whilst the flowers are very pleasing, being of quite a lilac tone. *F. ovata variegata* is worth growing for its distinct variegation, and the variegated forms of the Plantain Lily are for the most part

hardy bulbs might be planted in autumn. Rose of Sharon (*Hypericum calycinum*) would do, and so would the Periwinkles (the small-leaved variegated kinds make a prettiness), Woodruffe, *Anchusa italica*, Foxgloves, Honeysuckle (*Linnaria biennis*), Rudbeckia Newmani, Lupinus polyphyllus, *Hieracium rigidum*, and some of the hardiest Peonies would do if the soil is trenched up and made suitable.—E. H.

—Your border is certainly not an ideal spot for flowers, but you may make it more suitable for plants by making it up with some good loamy soil, which will improve matters somewhat. If it is not too shady you might grow hardy Ferns of many kinds, as they like a shady position if not too dense, and in light shade also will succeed well the Spanish Squills, Anemones of many kinds, the beautiful varieties of *A. nemorosa*—in particular Solomon's Seal, a very graceful, hardy plant, with slender stems of white flowers; Winter Aconite, Foxgloves, which look very handsome in full bloom, whilst the leaves are attractive; Daffodils, Day Lilies, the tall and elegant *Polygonum cuspidatum*, Ivies in variety which may be pegged down on the surface of the soil), Lily of the Valley, Iris,

surface-soil exactly in the same place. Now is a good time to put out Brussels Sprouts, Broccoli, Savoys, and Kalas for winter use. Cauliflowers for the autumn may still be planted. Celery, tob, is all in good time. Beetroot and even Carrots may still be sown. A row of Spinach in August would be useful for the winter, and so would Leeks. French Beans, if sown at once, would give a good crop in September; add plenty of manure when planting.—S. P.

— Unless you want the turf for anything particular, the best way will be to dig it in. If the ground is to be trenched, pare the turf off thinly, lay it on one side, and bury it just below the top "spit" of soil; otherwise it may just be turned in, using a long spade, and burying every bit of grass right out of sight. In any case do not burn it. On such ground anything might be grown. Plenty of Scarlet Runners and Dwarf Beans should be sown, also Turnips, Lettuce, Spinach, and Endive. Part of the ground should be planted with Brussels Sprouts, Savoys, Kale, and Broccoli, for winter use, and some autumn Giant Cauliflowers also should be got in at once. It is not too late to sow a row or two of the Ne Plus Ultra Peas, and a few good second-early Potatoes may still be planted.—B. C. R.

— Burning turf is a useful plan. Better trench it in, chopping it up well with the spade.—E. H.

3933.—*Centaurea candidissima*.—This is charmingly effective in the flower garden, and may be used in combination with any other bedding plant. A single specimen in the centre of a small bed, and surrounded with *Alternanthera* and variegated *Mesembryanthemum*, would look very nice indeed, or a row of plants as a bordering to tall growing things will do equally well. This *Centaurea* is one of those things that never seem out of place in any kind of floral arrangement. Cuttings strike very well put in in August or early in September.—J. C. B.

3946.—*White Campanulae*.—The variety you require is the Chimney Bell-flower (*C. pyramidalis alba*). A packet of seed will give upwards of 100 plants, costing but 6d. Sow the seed at once out-of-doors on well-worked soil. If the weather be hot and dry, water the seed-bed the day before sowing the seed; this is much better than watering the bed after the seed is sown, as the soil is rendered hard and caked, making it difficult for the seedlings to push through the crusted surface. Provide some shade for the bed until the seedlings appear above the soil, when the shade should be removed to afford all the available light to the plants to induce a stocky growth, which will enable them to withstand the winter better. When the plants are large enough to handle, transfer them carefully to the position where they are to flower the next year. At the back of the herbaceous border this *Campanula* shows to advantage, or amongst shrubs, where the associated green of the latter harmonises with the pure-white blossoms. This *Campanula* succeeds well in pots and will flower freely in the window or greenhouse, or even under a verandah, or anywhere that provides light and shelter from heavy rains. For pots select the strongest plants, placing them in 5 inch pots; when the roots fill these pots shift the plants into those 10 inches in diameter; in these they will flower. Any ordinary garden soil, with a small quantity of partly-decayed manure, will suffice. Abundance of water is required at the roots when growth is being freely made, and occasional doses of weak liquid-manure will be of service.—S. P.

— There are many beautiful varieties of Bell-flowers bearing white flowers. Taking them in alphabetical order, the white variety of the Carpathian Bell-flower (*C. carpatica*) is very charming, the flowers pure-white, and they look well in pots, whilst it is also excellent for the border. It makes very free growth, and blooms abundantly. Seeds will not bloom the same year, and they may be sown in pots filled with light soil, and placed in a cold frame. You could sow now, but this applies more to the type. Such a variety as *alba* should be raised from the cuttings, which atrika readily in a cold frame, or the plant may be divided. What a lovely thing *C. fragilis* is in pots, which will strike readily from cuttings early in the year. It makes a valuable pot-plant, and I lately recommended it for baskets in windows, than which nothing could

be more suitable. *C. gargaucica* should be propagated by cuttings, or the old plants may be divided to give increase of stock, and is a delightful plant; so as you want white flowers you must get this form. Another fine Bell-flower for the greenhouse is *C. isophylla alba*, which is very charming when on the greenhouse stage, its slender little shoots hanging over and quite covered with the pure-white flowers. And I may here remark that as regards soil it should be made up of light loam and leaf-mould, mixed with sufficient sharp silver sand to keep



Fig. 1.—Turnip "Early Munich." (See page 225.)

it moderately open. Pot moderately firmly, and especially if in baskets in the greenhouse or window, be careful that they do not suffer from want of water. During the winter less water is required than in the summer, but more may be given in the spring, when the plant can then be divided if considered necessary. Plants of *C. isophylla alba* suspended in pots in the greenhouse are beautiful. The shoots droop over gracefully. The Canterbury Bells are very useful for pots, and you may get white forms amongst these. There are biennials—that is, bloom the year after sowing. Remarks have recently been made respecting these in GARDENING. A very handsome *Campanula* for growing in pots is *C. pyramidalis*, and the white and blue when associated together make a charming contrast in colour. It is not necessary to refer again to this type, as it will be found fully described, also treatment given, in GARDENING of June 3, page 191. Then you may add the white forms of *C. persicifolia* and *C. pumila*, synonymous with *C. nepitosa*. I used to grow many pots of it for the greenhouse, and it is quite a gem of its class, the flowers pure-white, quite of a bell shape, and the plant easily divided. A good panful of it in bloom is sure to give pleasure, and it does not exceed 4 inches in height.—C. T.

— *Campanula isophylla* is a real gem for the greenhouse, and the only white variety I should care to cultivate. It is of drooping habit, and a well-established plant will produce a large number of its pure-white flowers for a long time. I do not know if seed of this one can be obtained, but even if it could it would take some time to raise strong plants. The young shoots that spring up in the crown strike root freely, and will flower the same year. Suspended in a light window, there is no more suitable plant for the purpose.—J. C. C.

3998.—*Treatment of Tigrdias*.—These are most unsatisfactory bulbs to grow; they either do very well or fail utterly. I believe it is entirely a question of soil, and that in a good fibrous loam with a little admixture of sand they would flourish. I tried them some years since in a prepared bed of peat, leaf-mould, well-decayed manure, yellow loam, and silver-sand, and from a dozen picked bulbs of the lovely *Tigridia pavonia grandiflora alba* I had one miserable bloom, which half opened and then faded. What made matters worse was the fact that at that time the bulbs of this *Tigridia* were decidedly dear, and every one rotted in the earth.—A. G. BUTLER.

— These bulbous plants do not require any special treatment. Here, in the West of England, I can get them to grow and flower in the open air as easily as the *Gladiolus*. It is, however, necessary to start in the spring with sound, plump bulbs; if they are shrivelled through being kept in paper bags or drawers all the winter they will not flower. If they are grown in pots the bulbs should remain in the soil until it is time to repot them in the spring; but from November to March they should be kept pretty dry and away from frost. When *Tigridias* are grown in the open they should be taken up in the autumn, and the bulbs kept in boxes of dry soil until the middle of

April, when they may be planted again. They require a rather light, rich soil, and plenty of water in dry weather through the summer.—J. C. C.

— Perhaps your soil is heavy and retentive, therefore cold; in such soil *Tigridias* will hardly live, let alone flourish. A warm, sandy soil suits them best. In this no special treatment is necessary. Plant the bulbs 3 inches deep early in April; on the surface give a light mulching of leaf-mould to keep the roots cool during the summer. In the case of heavy soil, remove it 18 inches deep from the site where the *Tigridias* are to be grown. A hole 1 foot wide will accommodate three bulbs. Place a layer of broken bricks or clinkers, 3 inches thick, at the bottom, filling up with light soil freely mixed with leaves and sand. In this compost place the bulbs, taking them up again in the autumn when the leaves have turned yellow.—S. P.

— The Tiger-flowers, or *Tigridias*, are a very interesting class of plants, and the time to plant them is in March; the soil should be of a moderately rich, loamy character. The position for them must be thoroughly well drained, and not too sunny, although I have seen the *Tigridias* bloom splendidly on a warm south border where the soil was light, and here the plants made a delightful show, as they were disposed in little groups so as to give an effect in colour. The best soil for them is a mixture of loam, leaf-mould, and sharp silver sand. Plant the bulbs not later than early April, as they suffer from being kept too long out of the ground. Put them in at a depth of 3 inches, and it is a good plan, as in the case of other choice things, to put some silver sand under each root. The flowers are very gorgeous, and the type is *T. pavonia*, and if you wish to indulge in a good assortment of the Tiger-flowers you may select the following (I may mention that *Tigridia* is synonymous with *Torrusis*): The Shell-plant (*Tigridia conchiflora*), the flowers yellow, spotted with red; and there is a variety of it named *grandiflora alba*, the bold flowers white, with spots of crimson. The ordinary Tiger-flower has scarlet blooms, enriched with orange spots; they measure about 6 inches across, and although lasting but a brief time (a few hours), a succession appears over several weeks. *T. canariensis* has yellow flowers, spotted with scarlet, whilst those of *T. speciosa* are yellow, with red spots. A new species is *T. Pringlei*; it is very brilliant in colour, taller in growth, and not difficult to grow if treated the same as the type. Begin first, however, with the typical plant, and then add the others as desired. If the position is warm and the soil light, the bulbs may be left in the ground during the winter; but if not considered advisable, lift them when the foliage has died down, and keep them in a cool place during the winter, as in the case of the *Gladiolus*. Plant out again in spring. One does not see much of the *Tigridias* in gardens, but when in full bloom their gorgeous flowers are sure to please.—C. T.

— *Campanula isophylla alba* is very pretty for basket work, or to hang down from the edge of the stage in greenhouses. It is quite hardy in sheltered spots on the rockery. May be raised from seeds or cuttings, or by division.—E. H.

Carnations.—The fearfully dry weather we have experienced now for so long has had a very bad effect on some plants growing on a light soil, and amateurs have found, no doubt, many of their plants have begun to turn yellow, and what the gardeners call "give up." In these cases it is no use to water, but I have been able to save a great many plants, by, directly I have observed any change in the tint of the foliage, at once taking away the old soil immediately round the plant in this condition, in the form of a basin, and refilling the vacuum with a compost of fresh damp leaf-mould and sand, cutting out all flowering-shoots, and layering the sickly-looking "grass" into the new fresh compost. This has, in most cases, been successful, though the old root may have died; the shoots layered into the new compost have revived, and grown away at once, and thus many valuable varieties have been saved.—H. W. WERUEN, *Shaldon, Triggmouth.*

Spotted and Yellow Foxglove.—The spotted varieties of the common Foxglove are very handsome. Stately of growth they are, very effective, and being of such a robust, enduring nature, they will thrive in positions

where many hardy flowers would perish. They look well among hardy Ferns and low-growing shrubs, and if once allowed to scatter their seeds, young plants will spring up every year. The yellow kind is distinct and pleasing in colour, but not quite so robust as the spotted form. It likes a somewhat elevated position where superfluous moisture drains away in the winter.—B. FLEET.

THE KITCHEN GARDEN.

EARLY TURNIPS.

To get Turnips fit for eating in May, and even early in June, sometimes is not an easy matter in some seasons. I have read with interest the notes at various times on early Turnips, and though I had little doubt which was the best Turnip for early sowing, I thought it best to give the matter a fair trial, so last season on March 30 I sowed several lots, such as Snowball, Early White Stone, or Six-weeks, Early Munich (Fig. 1, page 224), Early Milan, White Dutch, and White Strap-leaf (Fig. 2, on this page) on the same quarter, giving all the same treatment. Extra Early Milan was fit for use on May 29, whilst the others are from ten days to a fortnight later; indeed, two of them will not be ready then, so that I strongly advise the sowing of Early Milan where early Turnips are required, sowing others at the same time to form a succession. The Turnips are much appreciated as early as they can be obtained, as there is some difficulty in keeping up the supply of good solid bulbs as spring advances, as they become soft and useless, no matter how carefully stored. For late keeping, to eke out the supply till the earlier kinds come in, there is none better than the yellow-fleshed varieties, Golden Ball being a fine winter kind. Those of the round or globe section keep much better than the flat or strap-leaved kinds. The value of Extra Early Milan is its earliness and its freedom from bolting, which are so characteristic in other early kinds. Scarcely a plant bolts on our light soil, while on heavy land it is equally good. I would draw attention to the value of plenty of moisture on light soils, as then there is no trouble in securing an early crop. For keeping I do not advise Early Milan. Those who have movable frames at liberty in the early part of the year would do well to give this variety a trial. (1.)

3911. — **Rhubarb from seed.** — The young plants should be transplanted next March. The ground ought to be trenched 2 feet deep, putting in an abundance of good manure. Set them out 3 feet apart, and keep the surface well stirred through the season. If the weather should happen to be very dry a good watering now and then will help to promote rapid and strong growth. With really good culture the plants will be strong enough to allow of pulling from the third year from seed. This must, however, be done with moderation.—J. C. B.

3912. — **Moss litter for Mushroom beds.** — I have often used this for Mushroom beds, but prefer straw litter for the purpose. If the manure is fresh mix one barrowful of loam with every five barrowful of manure, and blend the whole together. Let it be in a heap, sheltered from rain, till the heat rises, then shake over again and make up the bed firmly. The loam will prevent overheating, and the bed may be spawned as soon as the temperature is steady at 55 degs. to 60 degs.—E. H.

— This substance is not well adapted to make Mushroom beds with it; heats too violently and the heat does not last very long. I have tried it, but with little success, and sometimes the bed has borne an abundant crop of stinking Fungi. Mushrooms can sometimes be obtained, but the manure should be mixed with a portion of dry loam and turned over every day until the rank steam has been given off. There is always a danger of the mycelium of poisonous Fungi being in the peat.—J. D. E.

3951. — **Cardoons.** — Make trenches same as for Celery, only a little wider apart, as the plants will grow taller and require more earth for blanching. Plant out at once, and if you have any seeds left another row may be planted with seeds in the bottom of the trench, dropping in two or three seeds at intervals of 12 inches or 15 inches or so. Keep well watered

with water, and when the plants are full grown draw the leaves together, and cover them with hay or strawbands, and earth up like Celery.—E. H.

3949. — **Unhealthy Tomatoes.** — Your description is rather vague, but no doubt the plants are affected with one or other of the Tomato diseases, and probably by that known as *Cladosporium fulvum*. You must cut away and burn the worst leaves, dust all the rest well with sulphur, ventilate the house freely, and maintain a dry atmosphere, especially when, or if, the house is closed at night; a little sulphate of ammonia will also be useful.—B. C. R.

— The plants are apparently attacked by the same disease which is so destructive to the Potatoes—*Phytophthora infestans*. I do not think it worth while trying to eradicate the disease if the plants are badly affected; it is better to burn them up, and after thoroughly cleaning the house and lime-washing the walls start again with a fresh lot of clean plants.—J. D. R.

— I should say you do not give air enough, but keep the house too close and stuffy, and perhaps give too much water. Keep the house drier by ventilation. Not much fire heat will be required now, only just a little warmth in the pipes on damp days or cold nights. Leave a little ventilation on at night.—E. H.

3969. — **Unhealthy Cucumbers.** — Too much or too little moisture at the roots will turn the Cucumbers yellow at the point. Although they are moisture-loving plants, they must not have sufficient to render them waterlogged at the roots, owing it may be perhaps to insufficient drainage. The best means of knowing whether it is owing to either of the causes named is to dig down to the bottom of the border, and if the soil is found to be in a medium condition—neither wet nor dry—the cause must be searched for elsewhere. A check may have been given to the plants through supplying them with water too cold. If it is given direct from wells, tanks, or water companies' pipes, without being aired, such conditions are not congenial to success. Overcropping will cause the points to turn yellow. It is a bad plan to overcrop the plants; far better to grow a limited number of fruit, and have them good. Very often as many as three and four fruits will show to a joint; it is not wise to leave more than one to develop. Telegraph, when true, is one of the most reliable varieties for producing a succession of well-shaped fruit. Danie's Doñanae is also another good kind. Cucumbers are easily raised from seed. Sow one seed in a 3-inch pot, placing the pot in a warm house. If the soil is moist, as it ought to be, when sowing, the seed will germinate before water is needed. Train the plants to one single stem until the desired height is attained if for a house; if for a frame, pinch out the point at the second rough leaf, to induce side shoots to form to spread over the bed.



Fig. 2.—Turnip "White Strap-leaf."

Partly decayed horse-manure is the best material for stimulating the growth of Cucumbers. A compost of three parts loam to one of manure will grow good Cucumbers. When the roots show out on the surface cover them with a similar compost. After the plants have been fruiting a month or so cover the soil an inch thick with manure only. Abundance of moisture is needed atmospherically in the house, not only for the benefit of the Cucumbers, but for the prevention of insect pests. An arid atmosphere will encourage the spread of red-spider.

If the leaves become infested with this insidious pest they are bad to cleanse from it. Syringe the plants every afternoon about four when the weather is fine. In regulating the shoots keep them rather thin; it is a mistake to overcrowd the plants. Pinch out the point of every shoot above the second leaf, and remove the fruit above that leaf, allowing that below to develop. Another shoot will spring from the uppermost joint. When this has grown two points serve it in the same way.—S. P.

HOUSE & WINDOW GARDENING.

3931. — **Insect pests.** — The brown spots on window curtains, cushions, &c., are most probably caused by bluebeetles. An "unusually large quantity" possibly is not present, as half-a-dozen will make a window filthy in a day or two. The only remedy I have ever known successful is to grow strongly-scented Geraniums in the room. Peppermint Geranium, if not objected to, is the best. Fly-papers can, of course, be used, and any eggs that may be found should be at once destroyed.—M. A. W.

Mossy Saxifrage as a window flower. — When at a friend's house recently I was charmed to see a departure from the orthodox type of window-box. It was filled with the Mossy Saxifrage (*S. hypnoides*), and the flower-spangled growth hung over the sides. The plant has quite established itself, and the centre was occupied with Mrs. Sinkins Pink in full bloom. It would be easy to get many pretty effects from window-boxes if suitable things were selected and not grown in a formal way. The Pink looks remarkably well thus used, and keeps in bloom some time, the effect of its flowers against those of a Blue Bell-flower being most pleasing. *C. fragilis*, *C. gargaricus*, and many of the other trailing or creeping kinds could be used. It would not be necessary to remove the Saxifrage for summer. Its mossy growth is always welcome.—C. T.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of GARDENING, 37, Southampton-street, Covent-garden, London. Letters on business should be sent to the Publishers. The name and address of the sender will promptly be added to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent in press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by adding, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appeared.

3925. — **Budding Roses.** — Would anyone kindly give me a few hints on budding Roses?—S. H. BAKER.

3926. — **Plants for Sheffield.** — What plants are likely to thrive best in the town of Sheffield?—F. T. W.

3927. — **Soil for Petunias.** — Would someone kindly tell me the best soil in which to pot Petunias?—LAUREL.

3928. — **Peach-tree branch withering.** — What is the reason of a branch of a Peach-tree withering? It is in a cool-house.—H. G. W. G.

3929. — **Macaya Bella.** — A friend has given me a plant labeled Macaya Bella. Will someone please advise me as to treatment, &c. ?—Novice, Nonmouthshire.

3930. — **Early Potatoes.** — I shall be obliged if any of your correspondents will give me directions for sowing seed of the very early Potatoes (Ashleaf Kidney) for next year?—STAMPS.

3931. — **Creepers for walls.** — Would someone kindly advise me what creepers to plant for north-east and south-west aspects? Also what plants to put in boxes for those aspects?—G. CUBERT.

3932. — **India-rubber-plant.** — The leaves of my plant all died off in the winter. There are now seven or eight young shoots on the old stem. Should any of these shoots be removed? If so, could I strike them in an ordinary greenhouse?—L. Q.

3933. — **Tuberous Begonias.** — I have several of these in pots, which I propose to transfer to an outdoor bed in about ten days' time. I shall be glad of any advice as to treatment, especially as to what should be done to them after they have bloomed?—WINDMILL HILL.

3934.—**Plumbago capensis**.—I have a Plumbago capensis about 2 feet high, well branched, and nice and green, but the leaves are very small. It is in a 7-inch pot. There is no sign of it flowering. Will Clay's Fertiliser be useful to it? And a few hints as to its treatment, soil, &c., will oblige?—LATAIS.

3935.—**Flowering shrubs**.—Will anyone kindly let me know the names of four or five good hardy flowering shrubs (worth growing near the front of my house), height about 12 feet or 14 feet, and evergreen if possible? Also best soil to grow them in, and best time to plant?—Locality, Ireland.—ENGLAND.

3936.—**Planting Rhododendrons**.—Will any person please let me know when is the best time to plant Rhododendrons, and shall I likely be likely to grow them in a good loam (limestone land)? I have been told that they will not grow in this soil—that I must prepare a peat bed for them. Is this so?—ENGLAND.

3937.—**Climbing Peas**.—Being down in the country the other day, I had my attention drawn to some Peas, which had proved to save the trouble of staking them, and I was told that they would bear just as well as if they had been allowed to climb. Being about to stake some Peas, I should like to have an opinion on the subject?—J. H. GRAY.

3938.—**Marchal Niel Rose**.—Last autumn I bought one of these Roses having two stems, each about 10 ft. long, and put in a cool lean-to house, planted in the border. Has this year borne seventeen blooms. What is the proper treatment now? Should it be let alone or cut back? If the latter, how and when? Any information will be grateful to a—CONSTANT READER.

3939.—**Manure for Cockscombs**.—Will someone kindly give me a little idea of what quantity of manure to use for Cockscombs? They are in 6-inch pots, with combs 4 inches over, and I should like to get them for show on the 20th of next month. I also have some nitrate. Would that be of any use to them? I do not know how to use it. Answer to this would oblige.—AMATEUR.

4000.—**Zonal Pelargoniums**.—I have some nice rooted cuttings of above in pots buried in ashes out-of-doors. I have planted in the house, and in the garden, as I wish them to flower in the winter, in my greenhouse. Will some kind friend advise me as to treatment, what manure they require, etc., to produce fine flowers? Also some good varieties.—NORTH, Monthshire.

4001.—**Unsatisfactory Cucumbers**.—In January last I planted several houses of Cucumbers, "Sutton's Improved," they fruited very well for a little while, now they seem to have gone off, scarcely producing any fruit; as they make their breaks the fruits go yellow and die. I have pulled some of the plants out and find their roots knotted. What is the cause of their being knotted, and is this the cause of the mischief?—E. B.

4002.—**Paraffin-oil and water for plants**.—Will someone kindly tell me what quantities each of paraffin-oil and water would be safe to apply to dip the plants into from a small greenhouse to remove green-fly and other insects from such things as the Aбуtillions, Chrysanthemums, Fuchsias, and Nicotianas? Also state if the same would be either destructive or injurious to the flowers and foliage?—M. Y. M.

4003.—**Blight on Apple-trees**.—I should feel much obliged if anyone will kindly let me know what is to be done with Apple-trees which are covered with a white stuff similar to mildew in appearance, but underneath the bark is broken and a gum-like substance oozes out. I am told it is "American blight," and that it will eventually kill the trees. Is this so? The soil is gravelly. The trees have not been pruned for some time.—A CONSTANT READER.

4004.—**Orchids in a greenhouse**.—I shall esteem it a favour if anyone will let me know if I can grow Orchids in a greenhouse where the temperature is never under 45 degs and seldom above 75 degs to 80 degs? If so, if someone will kindly mention a few varieties, not very costly, suitable for cultivation by a beginner? The house is divided into two portions, each 16 feet long by 12 feet broad, and outside air is considerably cooler than the other.—GROUNDS.

4005.—**White Banksian Rose**.—I have a specimen of this Rose planted this year since it has made vigorous growth from the first, and now covers the space with an abundance of short lateral growth. It has never bloomed, but this year it has produced flower-buds, but instead of being in clusters, they are formed singly, and few and far between, and none seem likely to develop, but drop off. I have never pruned it, having been advised not to do so. Should it be pruned, and if so, how and when?—E. L.

4006.—**Tomatoes not setting fruit**.—Will anyone kindly inform me as to the reason of my Tomato-plants not setting fruit after the flowers have fully developed and bloomed? They are being grown in a spanned greenhouse, which gets the sun upon it all day. I planted them out in April, and they have now grown about 4 feet in height. They look very healthy and strong. I have also thinned out the foliage by keeping back all side shoots, and also cutting away some of the leaves, and new water the foliage, but give them plenty of water at the roots. Am I right in treating them in this way?—X. Y. Z.

4007.—**A plague of rats**.—I live in a detached country house where I have a garden. Rats are a perfect plague; in winter they infest the house, devouring stored fruit, and potatoes of all kinds. In summer they dig up potatoes, devour Cabbages and Strawberries. I have kept cats, but they prefer rabbit to rat hunting. I fear to use poison about the house on account of danger of putrifying carcasses being left under the floors. We have no professional rat-catchers in Ireland. Will anyone kindly advise on the subject, giving experience as to poison, &c. I may say that I have used various traps, but the vermin avoid them either one or two have been caught.—B. W. F.

4008.—**Rose Gloire de Dijon, &c.**—I have a large Gloire de Dijon Rose, two of the shoots of which forced their way some 20 inches to the ground, and they though I pruned it closely last spring. It has since the first blooms were out now grown so rampantly that it has completely covered the glass of half the house (a lean-to, 28 feet long), and I shall be glad for advice how to manage it? Am I to cut it in closely, or let the shoots remain?

It was covered with its lovely blossoms. I cut hundreds off it. It is planted outside, and I have frequently given doses of liquid-manure made from horse-droppings. I syringed it inside frequently with soap-suds from the laundry, and it is quite free from green-fly, and appears in splendid health. Also please say how I am to treat a Marchal Niel Rose in a pot after flowering? There were eleven good blooms on a small plant in an 8-inch pot. Should I repeat it now or cut it back? Any advice will be gratefully received. I manage the greenhouse myself, potting, etc. I have other Roses after flowering, and have put them (they are in pots) outdoors. Should I repeat them?—A. M. G.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

4009.—**Budding (H. Shepherd)**.—At this season it would be a failure, I should say, because the bark would not run well, and without it does so you cannot hope for success. You must wait until we get some more wet and favourable weather.—J. J.

4010.—**Pins-ouss (Charles Pope)**.—I have named them and returned them, as you desired, by rail to Exeter. Most of them are apparently *Pinus*, great American species, or Californian; but I do not find the West Wellingtonia giganteum amongst them.—J. J.

4011.—**Peas, early (George Pile)**.—I am very much obliged for the nice dish of Peas sent by Percival Post. They were certainly a very fine sample, and I should like them for William L. They were quite right sent in the pots. It gave me a better opportunity of judging them.—J. J.

4012.—**Paraguay Tea**.—C. Jenkins asks if this can be obtained in England, and from what plant it is obtained? Yerba, as it is called, is prepared from the leaves of an overgrown tree of Southern Brazil, called *Ilex paraguayensis*, and it is largely used in South America. I do not know if it can be procured in this country, but I do not think it can.—J. J.

4013.—**Madevalla (T. H. B.)**.—The two blooms sent are magnificent flowers of *M. Veitchii*, which is yet the grandest of all this family. When I knew Mr. Bateson, who was so fond of this family, and he used to describe them to me in such glowing colours, this, the finest of all, was unknown; they are two distinct forms, and both very fine, but neither of them can be called *Veitchii grandiflora*.—M. B.

4014.—**Soil for Orypidium Insigne**.—G. Rathwood complains that I should have recommended charcoal and living Sphagnum for this plant, as I have done on page 179. Upon looking at the page indicated, I find it is not my article at all. I quite agree with "G. E." that half good light truly loam suits this plant well. The plants should have been potted before this, if it was required.—M. B.

4015.—**Soil for Gesneras (G. Helmsley)**.—Use tuff-peat, fibrous manure, good leaf-mould, and sharp sand in about equal parts, drain well and water freely, but do not syringe at any time. I like to maintain a good moist atmosphere, but totally object to syringing overhead, on account of the woolly nature of their foliage. You may give the plants another shift, as you say the tubers were started in the middle of April.—J. J.

4016.—**Luffa sponges (C. Jenkins)**.—These are sold by the chandler, and are the internal fibre of a Gourd called *Luffa sycylifera*. The plant is really a native of Egypt, but it is cultivated in many parts. They are sometimes sold as West Indian bean sprong, where they are largely grown, and I have grown the plant at home, and used it for the same purpose. I find, however, that the plant, when grown at home, has softer fibres, which does not last so well.—J. J.

4017.—**Miltonia vexillaria**.—George Thompson sends, in No. 1, a very good variety of this Orchid; it is a plant that naturally gets a great deal of wet and a very agreeable temperature, and although not found until about 1859, the plant has a wide distribution in New Granada, so much so that reasonable hopes remain that there are yet more new species to find in various parts of the mountainous regions of New Granada. No. 2 is very like the form called *vaucoulesii*, with the sepals and petals pale rose, and the lip white.—M. B.

4018.—**Palms in pots and tubs (J. Cradock)**.—These plants should be kept in their pots as long as possible. Indeed, I cannot understand why it is that English gardeners appear to put specimen Palms into pots of such large size, whilst on the Continent the opposite case is maintained, and with much better effect. Drain well, and set them firmly, and in the spring or early summer they should have the old surface soil taken away and renewed, using for this purpose old, but not spent, cow-manure, and water the plants freely.—J. J.

4019.—**Lælia purpurata**.—J. Foster sends me flowers of this species, which are they not beautiful? and have no doubt when seen on the plants they were very beautiful; but as these flowers had been out two days when I got them, and moreover, as they were put into a perfectly dry wooden box, which had sucked the life out of them, they appeared to have narrow, ill-formed sepals and petals, and so much of their beauty was gone. I have had a lot of flowers of this species sent me this season, and yours, although good, do not exhibit anything above the average.—J. J.

4020.—**Lælia Cattleya**.—J. Johnson asks my opinion respecting this style of naming, saying he does not like it; I can quite agree with him. It is all very well now in the first instance to name such nearly allied genera, but if this sort of thing is persisted in we shall not only be in trouble in pronouncing the names in the third and fourth generation of crosses. These names may be all very well to have the plants registered under, but they should not be used as common garden names. What, for instance, would look more ridiculous than *Lælia Cattleya Susan Brown*, and why such an absurd Latin generic?—M. B.

4021.—**Madevalla finestrata (T. Jackson)**.—This is a very nice flower, but I have not known this species, but well I had not seen a flower for a long time. When I did know it, I found the plant to do well at the warm end of the Odontoglossum-house; but liked the Cattleya-

house in the winter. There is another species belonging to the same set of plants called *Dayaum*, and to these two little plants the unpronounceable name of *Cryptophloeanthus* has been given, and which I should imagine was given in order to make the study of Orchids easy and popular.—H. B.

4022.—**Bonia megastigma (J. Earl)**.—If your plant has done blooming I would cut it back rather hard, putting it into a shady spot until it begins to get out, and do not set in the open at any time, for it does not thrive so treated. For soil use good brown peat, chopped up, mixed with sand, and be sure and drain well. Then even if you should give too much water at any one time it will drain away. Stop the young shoots to make the plant grow uniformly and to balance. One of the results of this species is that it runs up thin and tall unless proper attention is given to this (the plant which should be grown by everyone for the sake of its grateful perfume).—J. J.

4023.—**Tabouros Begonias (B. Jones)**.—Well, this query just indicates the exact state of some of my own things for I have a double yellow, and some others which have never started yet; but I suppose they will do so, as upon looking at them, which I have just done, I find they are alive and sound, whilst my others are growing nicely, some showing flower; but I am rather later than last year, for my Begonia had then begun to flower in the first week in June, and the same plants continued gay until the end of October, which filled my house with beautiful flowers for five or six weeks. You may, if you do not keep on hoping for them to break away, which, while there is life, can be expected. As for myself, if I had the convenience of a little fire-heat, I should give it them. Named kinds are all very well; but for an amateur, the colours are all that is necessary. See Mr. Laing's and Mr. Cannell's; these are the two best collections in the country, undoubtedly.—J. J.

4024.—**Maggots on Parsnip (J. F.)**.—The Parsnips are no doubt attacked by the grub of the Celerly-fly, which also attacks Parsnips. They will not injure the roots, except that by despoiling the foliage they also injure indirectly the roots, which would not come to perfection if there were no leaves. Pinching the hillocks where the grubs are, or picking off and burning the leaves are the only remedies. Scattering soot, quinine, or finely powdered soot over the leaves on a dowy morning or after rain is useful. When the crop is pulled up, all affected leaves should be burnt, and the ground deeply trenched, taking care that the surface soil is put at the bottom of the trench, as the chrysalides may be found 2 inches or 3 inches below the surface, and being deeply buried, the flies will not be able to escape.—G. S. B.

NAMES OF PLANTS AND FRUITS.

* Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 87, Southampton-street, Strand, London, W.C.

Names of plants.—A. W.—1, *Blechnum occidentale*; 2, *Asplenium Fabianum*; 3, *Campylopusium angustifolium*; 4, *Hymenophyllum dilatatum*; 5, *Adiantum albidum*.—Send again when in flower or fruit. *Vicia*—cannot name from such small, miserable specimens. *Britain*.—1, *Dryas octopetala*; 2, *Rhinanthus cristata-galli*; 3, *Plantago Coronopus*; 4, *Hieracium glabra*.—Canon.—Cannot distinguish it. *Fern.*—1, *Platyloca Browni*; 2, *Leptogramme tatarica*; 3, *Balanium outlets*; 4, *Lomaria discolor*; 5, *Lomaria speciosa*.—*J. Childs*.—1, Fair form of *Lælia purpurata*; 2, *Cattleya Mossii*; 3, *Cattleya speciosa*; 4, *Odontoglossum albidum*.—*G. Everett*.—Send again when in flower. *H. Waller*.—1, *Papever dubium*; 2, *Crocus deturmei*; 3, *Prunus Pallas*; 4, *Orchis mascula*.—*G. C.*—*Orchis foliosa*; 2, *Orypidium arcticum*; 3, *Orypidium pubescens*; 4, *Saxifraga longifolia*; 5, *Dielisya eximia*.—*J. Gelsleri*—Specimens too poor to name.—*Zelding*.—*Oranula* (*Kalosanthes*) *ococma* apparently; but if you could send a head of *Bowers* we should be quite certain of the matter.—*M. Briggs*.—We cannot name a seedling Begonia. Call it what you like. We should say that it will probably flower this summer.—*J. P.*—*Lonicera* (*Honey-suckle*) species; but spelled by being packed in wet Moss.—*G. J. Creny*.—We do not recognize the plant from dried-up specimen sent.—*Hayford*.—The iris flowers were completely spoiled by being packed in dry rotten-wool. This is the worst of all packing material when allowed to touch the blossoms, and the foot has been pointed out many times in GARDENING ILLUSTRATED. Please send fresher specimens, and they should be better packed.—*Mrs. Craig*.—*Lilium giganteum*.—*T. M.*—*Hareford*.—Plant *Sedum Fernaldii*. Strawberry crushed up.—*Trosack*.—Numbers detached. Cannot name.—*Yielding*.—*Veronica subciliata*.

TO CORRESPONDENTS.

We should be glad if readers could remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

A. M. G.—The Cherry-trees are evidently in bad health, probably from age, and the roots getting down into unsuitable soil. Please state nature of subsoil, &c.

POULTRY AND RABBITS.

4025.—**An incubator**.—Will someone kindly tell me the best lamp to use to heat a home-made incubator to raise chickens in? The boiler is 23 inches by 23 inches long, and I should like to have the best 8 inch boiler plates high only. Any information will be gratefully and thankfully received.—GARDENER'S WIFE.

4026.—**Unhealthy fowl**.—I should be glad to know of a cure for a complaint among fowls, in which the body becomes covered with bladders? Also the name? The fowl in question has been well fed.—E. M. B.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of new and rare flowers and good fruit and vegetables for drawing. The drawings so made will be engraved in the best manner, and will appear in due course in GARDENING ILLUSTRATED.

GARDENING ILLUSTRATED.

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A FREE USE OF MANURE.

Those private gardeners who have only previously seen but little of what is going on in the market gardens and farms round London and other large towns are invariably impressed with their first glimpse into the ways of these market men. Especially are they surprised at the quality and quantity of manure that is used. As a rule, private gardeners fail to get enough solid manure, and in very many instances have to be content principally with what has previously done duty as hot-bed material. Very poor stuff the latter is, or little better than a mass of humus, and as such ought always to be supplemented with fairly liberal supplies of chemical manures, that most generally needed being potash in some form. To all appearance market growers apply their cheaply-obtained and really good animal manure—the principal fertilising properties not being either washed out by rains or dissipated by undue fermentation—at the rate of not less than 30 tons, and not unfrequently nearer 40 tons, to the acre. The ground being in a good condition for receiving this, it both can and does produce enormous crops in close and rapid succession. Good stable manure, such as can be obtained in the neighbourhood of large towns, and also any from a mixed farmyard, more especially where the fattening of beasts is going on, is as near perfect as can be mentioned. In this case it would appear next to impossible to overdo the ground with this in a semi-decayed state, always provided the cropping is close and heavy. It is very different with the rotten stuff that has to do duty in very many private gardens. This contains but few constituents of a plant-sustaining nature other than moisture, and which humus both holds and absorbs from the atmosphere. In the course of a few years this kind of manure soils soils, especially those of a clayey nature, and this can best be corrected by a dressing of lime instead of manure applied at the rate of 2 bushels per square rod. The lime most to be preferred is that obtained from the magnesia limestone rock, and this ought to be applied direct from the kiln. It can be most simply slaked by being laid in small heaps and covered with soil for a few days, and should then be spread over the surface of the previously dug ground and forked in. The effect of this dressing on manure-soil ground is almost magical. It has the effect of liberating food previously locked up, and enters into combinations with other constituents required for the invigoration and sustenance of vegetable life generally. It was not, however, my original intention to discuss the

NATURE OF MANURES, but rather to touch upon what crops stand most in need of rich food at the roots. All things considered, the most liberal use of solid manure is advisable in the case of Globe Artichokes and Rhubarb, as it is scarcely possible to grow these too strongly. On dry hot soils and poor ground generally, the former fails badly in a dry season, and at no time are the heads so large and succulent as desirable. For these crops resort to trenching or double digging,

mixing manure freely with both spits, while if the nature of the ground renders trenching impossible, increase the depth of surface-soil by means of additions of compost in which strong loam and manures figure largely. In my case Globe Artichokes are of such importance that I would deny any other crops solid manure in order to let the former have plenty both mixed with the soil and in the form of a mulching. Rhubarb is not nearly of such importance, but pays well for liberal treatment. Onions, if wanted of large size, must have plenty of solid manure in the soil in addition to soot and other manurial dressings, and even if medium-sized to small roots are preferred, it is advisable to make the ground rich, firmness of soil and thick creeping doing the rest. Soot, in addition to being a good fertiliser, is also to a certain extent a preventive of Onion-grub. It pays to well fork in half-a-bushel to the red early end apply another somewhat lighter surface-dressing just prior to sowing the seed. It is an old custom to sow Onions in succession to Celery, the latter being supposed to leave the ground in excellent condition for the reception of the former. Such may be the case in some few instances, but, as a rule,

CELERY exhausts all the manure placed in the trenches, and the apparently finely divided state of the surface of the ground when levelled is altogether misleading. The surface may be perfectly fine, and just underneath patches of soil closely run together, wet and cold, be found. It answers my purpose to devote ground previously cleared of early and mid-season Celery to Onions, but advantage is taken of a frosty morning to wheel on a good dressing of manure, rough digging following as soon as practicable. Thus treated the soil breaks down admirably at sowing time, invariably producing a good crop of medium-sized, firm Onions, and when the latter are cleared off very little further preparation is needed for spring Cabbage. If Carrots, Beet, Salsafy, and such like were to follow Celery, I would yet advise digging the ground deeply after the levelling has taken place, no animal manure being given however. Contact with the latter and also masses of wet trampled soil hurried well below the surface by the levelling process cause tap-roots to fork badly. These, therefore, should have a finely-divided deep root-run, and if solid manure is applied it must be buried not less than a foot deep. It is a mistake to be too stingy with manure as far as Potatoes are concerned. Doubtless market gardeners somewhat over-do their dressings, contact with so much strong manure having the effect of impairing the quality of the crops. If such is not the case, how else are we to account for the bad quality of the bulk of market Potatoes as grown in the vicinity of large towns? If good solid manure is applied at the rate of 30 tons to the acre, this being dug in now where the land is of a heavy nature and not distributed market farmers' fashion along the drills at planting time, the Potatoes will get the full benefit of this and leave the ground in splendid order for any members of the Brassica family or Strawberries. Gardeners having nothing but poor rotten manure to wheel on to their

POTATO ground ought to supplement this at or near planting time with either soot, guano, or superphosphate and kainit. Well-decayed garden refuse to every five loads of which one load of fresh lime has for some time previous been well mixed, is one of the best manurial dressings that can be applied by way of a change to Potato ground. Peas, runner and Broad Beans must have plenty of manure under them, or they are liable to fail badly in hot, dry weather. The manure dug in ought also to be only partially decayed, as I have repeatedly found that where old hotbed or very rotten manure has been used, the former especially has been badly attacked at the roots by eelworms. When once the letter make their home in the roots these become greatly swollen, and both root-action and top-growth are quickly perished. Wood ashes mixed with the manure and very lightly sown with the seed is a preventive of insect attack at the roots, and also acts as a powerful fertiliser. Sown too freely with the seed it is liable to cause the letter to decay, and the soil in the drill ought only to be just whitened by dry wood-ashes at sowing time. Kidney Beans will thrive well for a short time on unmanured ground, and produce heavy crops if they succeed a crop for which manure was freely dug in.

CARLIFLOWERS revel in a rich root-run, the strong fresh manure dug or ploughed in by market growers suiting them well. To have them extra fine, or say fit for exhibition, manure should be freely dug in and liquid manure given in large quantities when the hearts are forming. If Brussels Sprouts are given good room and a moderately firm root-run, there is not much likelihood of too much manure being applied at the roots, and the same remarks apply to Borecole generally. Broccoli, Chon de Burghley, and Savoys I prefer to plant in succession to Leeks, Strawberries, or any other crop for which manure was freely used, a moderately rich, yet firm root-run best suiting this class of winter vegetables. H.

THE DROUGHT.

THE present long-protracted drought has sorely taxed the resources of all gardeners, but doubtless many valuable lessons will be learnt that will aid many to combat future visitations of the same kind, and doubtless if we had such prolonged droughts more frequently there would be more deep cultivation done in the winter, for the difference of the look of crops on really well worked and manured land with others only shallow cultivated, in spring, is most marked, for as long as food and moisture is beneath a crop, the roots will go down and find it, and the tops will indicate that the crop is making progress. But when the land is cropped and drought is upon us, the best antidote I have found is the hoe and rake, frequently used to pulverise the surface and work it down into a dust-like surface—for the fierce rays of the sun that extract the moisture from the surface at a rapid pace, leaving it apparently drier than before, appear to have little power to extract the moisture from a covering of 2 inches or 3 inches of dust on the surface—and it is surprising how crops have held out against the long

drought when the hoe has been kept going amongst them. Mulching is a great aid to fruit-trees, bushes, and Strawberry beds, rows of Peas, Beans, &c., but it can hardly be extended to all crops that need it, and the simplest and best remedy is to hoe, even if not a weed is visible. Such is my experience. J. G. H.

GARDEN WORK.

Conservatory.

Jasmines are always appreciated everywhere, and where there are borders in the conservatory for climbers, one or two Jasmines should be planted. They will grow and flower freely in loam, peat, and sand, or in loam and leaf-mould and sand. To flower well they must have light enough to ripen the wood. They do very well trained up a pillar or against a wall, or may be trained over an arch. J. gracillimum and grandiflorum are good varieties. I have grown them in pots, but they are so much better planted out that an effort should be made to open up a border for them. To go a little further into the question of providing climbing plants for the conservatory, Mandevilla suaveolens has white, very good flowers, which are borne in large clusters in summer. Let it ramble up to the roof near the open lights. Plumbago capensis, Rhysochloa jasminoides, Solanum jasminoides, Solysia heterophylla (pretty blue-flowered twiner), Swainsona galatifolia (the pea-shaped flower are useful for cutting, should be planted in peat and loam in a light position; does well trained to a pillar. One of the very best wall or pillar plants is Lucois gratissima. The flowers are sweet-scented, and are borne in large clusters at the end of the current year's shoots. Habrochloa elegans and others are bright and showy, and when planted out are seldom without blossom; but autumn and winter is the natural season of blooming. The above are mostly of moderate growth, and will do in comparatively small houses. For large conservatories Passiflora, Tecomania, Bignonia, and Tecoma will give a nice variety; but there are many plants adapted for covering walls and pillars and to provide quantities of flowers for cutting besides those named. Fuchsia, Ivy-leaved and other "Geraniums" grow very rapidly when planted out. Roses, again, are very charming under glass, especially the Tea and Noisettes, and a plant or two of Tropaeolum Fishall planted now and trained wherever there is room will produce much brightness in winter. Greenhouse Rhododendrons have pretty well completed their growth. Large plants of such kinds as Countess of Haddington, Duchess of Bureghall, and others of similar habit of growth, including Edgeworth, are very beautiful, and the flowers very desirable for cutting. So soon as the young growth is a little firm set the plants outside on a cool seat to ripen the wood. When repotting is necessary use only good peat and sand, and pot firmly. In rearranging this house, and the others if it does the better, a few specimens may be brought from the stove to make room there, and, at the same time, add a fresh feature to the conservatory. If Camellias are placed outside let them have a shady spot where the midday sun cannot reach them, and they must be placed on a bed of ashes to keep the worms out of the pots. This is a very important matter in placing greenhouse plants outside in summer.

Stove.

Vines are very useful for summer blooming. They make very useful exhibition plants when well grown; must be freely pinched during growth to get a bushy habit should be potted in rather porous materials, such as peat, leaf-mould, a few rough pieces of old turf, and plenty of sand. The growth is free and robust in such compost, and stimulants may be freely given when the plants show flower, without making the soil sour. The old plants should not be kept too long, as a young plant quickly grown will make a specimen; indeed, there is a good deal of room for this clinging to old specimen plants, both in the stove and in the greenhouse; younger plants would be far more effective than many of the old specimens still retained in many gardens. Cuttings of most of the usual plants grown can be struck at home; the only plants that need be purchased are new things. Slow-growing plants, such as Rondeletia speciosa, Ixora, Francosera, most of which are beautiful winter-flowering subjects, see a long time getting out of the house. The dwarf Citrus dendrons, such as C. fallax, squamata, &c., are very bright when in blossom, and are easily increased by cuttings. After flowering the plants may be cut back. Among berry-bearing plants Rivina humilis makes a pretty little table-plant in winter, is easily raised from seeds or cuttings. It generally drops its berries, and they come up all over the house in borders and pots. Cuttings of young plants of Geranium should be given up in a close, warm pit; they do very well in the hot-bed. A small, low house, with lead or tan beds therein, is very suitable for this class of plants, and it is desirable, as far as possible, to regroup subjects now to make the most of the time and opportunity for growth. If there are mealy-bug and other insects in the collection, not for an instant should these be lost sight of, or there will be endless work by-and-by. Something may be done by syringing with Insecticide to check their progress for a time, but the sooner in the heat, the more sure where a determined effort is being made to clear them out.

Winter-flowering Begonias.

Those who have not got a collection of these should buy small plants now and grow them on. They are charming things in the stove, and even in a warm greenhouse, in winter; very easy to grow and propagate, and cheap if bought in small quantities. When they begin to grow freely pinch the leaders to induce a bushy habit. Loam and leaf-mould in equal parts, lightened with sharp sand, will grow the Begonia family very well. The following half-dozen are among the most useful: Insignis, aconitifolia, semperflorens, giganta, oerlimbica, mansueti, nitida, alba, and fuchsoides. The last-named, though an old sort, is very graceful. It is best to propagate young-stock annually early in February, and throw out all the old plants.

* In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.

Ferns and Mosses.

This is a good season for buying in new stock. It is quite as well to purchase small plants of any particular variety and grow on, and the money goes further. The variety of Ferns is almost endless, and every year sees something new introduced. I am not going to give a list of Ferns for several reasons, for it would take up a good deal of space; and, secondly, trade Fern-growers are now scattered pretty well all over the country, and a visit to a nursery is easily made. The number of Adiantums is now simply marvellous, and a collection of Maiden-hair would be very interesting. To name only a dozen that everybody should grow who has a hothouse, we will take Adiantum Farleyense as one of the handsomest Ferns grown, then would come A. Williami (Golden Maiden-hair), A. gracillimum, A. decorum, A. cucullatum, and its variety elegans (A. assimile, a very pretty little Fern), Conium latum, A. Paucifl., A. Anatum, A. trapeziforme, and setulatum. This will give a number of distinct varieties at a comparatively small cost.

Pits and Frames.

These will be filling up now, or some of them, with winter-flowering plants. When young and tender, just removed from stove or forcing-house, keep the frames closed for a time and shade when the sun is bright. When the plants get accustomed to the position and commoner to grow a little, air may be given, and then less shade will be required as the growth gets harder.

Window Gardening.

Window-boxes will now be very bright, and as it is the custom to fill the box quite full of plants, weak stimulants may soon be given. Plants outside windows require a good deal of water. Foliole Begonias, of which few may be taken at a distance among the green-tinted Ferns at this season; they may be kept through the winter in a warm room if not overwatered, and it is best not to overpot. The Mesochoranthemum family are very beautiful now in sunny windows. I have lately seen a few of them about. Perhaps this denotes a revival.

Outdoor Garden.

The one compensation of the season is the absence of weeds where the hoe has been used at all; but I fancy most of us would rather weed than water, and so long as the water in a pit or in a reservoir there must be a good deal of water used. Happy are those gardeners who have plenty of manure for mulching purposes; these alone are masters of the situation. Burnt earth is found very useful for mulching purposes; an Inch or so spread over the surface of a bed or border effectually checks evaporation, and the plants do well and the birds do not scratch it about as they do manure or peat-moss-fibre. One of the brightest bits of colour at the present moment are a mass of Red and Yellow Iceland Poppies, where one may not come again for some time. Other plants which are standing the drought well without water are Rocket, Potentilla, Campanula, including Canterbury Bells. I have a mass of these growing for seeds, and everybody admires them. Perennial Geraniums again are making a splendid show, and Antirrhinum and Snapdragon seem to enjoy the drought and the hot sunshine. Mulch Stocks, Asters, Zinnias, and other Drummonds; these will come out if mulched with good manure and watered occasionally. If Asters are neglected the flowers will be small. Hollyhocks and Dahlias must be well supported, and Phloxes, unless well cared for, will be very poor things. Pinks should be well watered to get the grass into condition for taking cuttings. There will soon be a feast of Geraniums; see that all are staked up carefully, and a layer of good soil spread over the beds will be a great help to the blossoms, and will be ready for layering by-and-by. Newly-planted trees and shrubs must have water till rain comes if they are to be kept alive.

Fruit Garden.

This is not going to be the ill-fortune season most of us expected. Bush fruits and Raspberries are very small where left to themselves. Mulch and water might have altered matters, but in many cases this has not been done. Strawberries on good land well manured are fairly good. Plums (excepting the King of the South) are not doing so well as falling fast through drought, and in a good many crebber insects are having a good time. There will have to be a general awakening among fruit-growers before the sunshine can be of any benefit. Insects must be destroyed by spraying in summer and by dressing the trees in winter. Drought must be counteracted by the use of mulch and water, and then the sunshine, instead of being a hindrance, will be a help. I admit I have said something of this kind before, but the soil can only be driven home by repeated taps with the hammer. Shorten back the breastwood of Plum on walls to four leaves; lay in as much young wood as there is room for, and where the trees have been neglected, and have become infested with insects, pick off some of the worst of the curled-up leaves and attack the insects with the usual remedies, the best and simplest being soft-soap, 2 oz. to the gallon, with 1 quart of Tobacco-tin to 4 gallons of the soap-water. Washes of all kinds have more effect if used warm. Melons must have water enough to keep the leaves healthy, and they will take a good deal during this scorching weather; glycol stimulates as soon as the crop is set and swelling freely. Melons may yet be planted on genial hot-beds. If Peaches are watered heavily after the fruit begins to ripen the flavour will suffer.

Vegetable Garden.

Seeds of Cardoons may be planted in well-mannered trenches in pits—three seeds or so in a patch—12 inches to 15 inches apart; if all the seeds grow remove all but one. Plant Turnip-rooted Celery (Celeriac) in rows on the surface of well-manured land, the rows to be 18 inches apart and 9 inches apart in the rows; water freely and shade with branches till the plants get well established or till rain comes in sufficient quantity to moisten all the ground. Sow the seeds of Turnip-rooted Celery in a trench 10 inches deep in a good variety, and those who like yellow seeded Turnips may sow Orange Jolly. Turnips in a dry season should be sown on land that has been prepared in a hot bed or two to get settled and for the moisture to come up from below. Draw the drills rather deep, and water them, and soak with liquid-manure. If in the meantime rain falls the liquid-manure may be omitted, a little watered manure being sown in the drills instead. Really good

Lettuce and Cauliflowers will be in demand now, and so only be obtained by good cuttings and a free use of water and mulch. Plant and sow for succession on good land. North borders will be useful now. Make up Mushroom-beds in a cool, shady spot, such as the north side of a lofty wall; a good way of doing this is to knock up a rough kind of pit with boards, and cover with old shingles or something of the kind; hurdles slatted with straw will do. We want to keep in the moisture and keep out the scorched atmosphere. Let Tomatoes have all the attention required. Plants trained to one stem must have all side shoots removed when small. Better prick leaders when four or five trusses of fruit are set. E. HOSBAY.

Work in the Town Garden.

Window-boxes ought to be looking gay now. For a wonder those on a north or shady aspect are doing best now, as where exposed to the full glare of the sun the plants soon get burnt up. If not very regularly watered, and in any case the flowers quickly fade. Under such circumstances a hind or shading of some kind would be advisable. There are different ways of planting window-boxes; but, as a rule, I find it best to put in plants grown in pots in some close or sheltered place, and to keep moist. Where there is a reserve of plants to fall back upon this is decidedly the best plan, as they can be changed or the arrangement altered so often as necessary, while, should one go wrong in any way, or go out of flower, it can be replaced in a moment. The pots being surrounded with a moist and non-conducting material, the plants grow almost as well as if planted out in a bed of soil, and only a little stimulus occasionally is necessary. Even if water at the root is not necessary, the overhead shower with a fine-robed can or syring morning and evening must not be omitted in such weather as this; it refreshes the plants wonderfully, especially when they are exposed to the sun for the greater part of the day. Pelargoniums of the large-flowering section are making a fine display just now. As a rule, shade is not necessary for these plants, and, indeed, they do better without it; but in very hot weather, such as this, a light protection from the sun's rays during the middle of the day will prolong the beauty of the flowers considerably. These are capital town plants, flowering freely even in pots, though the growth is not so sturdy and vigorous as that of the country grown plants seen in the markets and shops; but when planted out-of-doors they thrive amazingly, quickly making quite large bushes, and flowering more or less continuously throughout the entire summer. As the plants in pots go out of flower they should be turned out into the open air, standing them on ashes in a sunny spot and giving very little water. When the wood is thoroughly hard out the plants down severely, and put in the tops for cuttings. The old stumps should be shaken out and replaced into small pots as soon as they "break" again, and may then be grown on into large plants. Watering occupies the greater part of the time now; everything, and pot-plants in particular, must have plenty of water, but in very hot weather, such as this, they cannot possibly be watered. Begonias, Fuchsias, and Calceolarias especially require abundance of moisture; but "Geraniums" and Petonias flower better if moderately dry. B. O. K.

THE COMING WEEK'S WORK.

Extracts from a garden diary from June 24th to July 1st.

Shifted seedling Cyclamens into 5-inch pots; these plants, with Onocrotis and Primulas, are now in low pits and frames, where the treatment they require can be given. Shifted on Chrysanthemum. Of course, the unsorted specimen plants have been potted several weeks; but Chrysanthemum are treated in various ways. A considerable number of my plants have been cut down, and then the potting is delayed till the growth has started freely again. Most people will probably have done potting or cutting their plants for this season, but I shall strike the tops of certain varieties to get dwarf plants for rooms, &c. Cuttings for this purpose may be taken end of July or even later. The cuttings soon strike if kept close and shaded; I generally place a frame under a north wall to receive late cuttings. Planted Melons for late summer crop. Cucumbers are abundant now. I am giving my plants more room than I used to do, and, although a little sacrifice has to be made at the beginning, it will more than make up later. A cucumber bed has roots and stalks will be an immense number of fruits in a season if the roots are well supported. Cucumbers do not require much soil to start in, but frequent top-dressings must be given during growth and abundance of water. In very hot weather my Cucumbers are watered with the hose every morning. When Cucumbers are infested with red-spider it may safely be concluded they have not had water enough. I do not believe in coating the leaves of Cucumbers in the whole of the year, as is often practised; but when the plants are growing in beds a few of the bottom leaves may be shortened back with advantage to let in the light to colour the fruit, and where this does gradually there is no check, and as soon as the light lets in new growth starts away from the bottom of the plants, and, if one or two shoots are encouraged, there will be a second crop of fruit coming on before the plants have ceased bearing at the top. Tomatoes, I find, in such weather must have plenty of nourishment or the fruits will be small. I always mulch with manure and water freely, giving occasional doses of artificial, and I find it pays. Sowed several rows of William I. Peas. It is too late to sow Marrow Peas now; but early varieties will do very well. Shall plant American Wonder on the early border in about ten days' time for the last crop, and Marrow Peas planted in May will generally produce a second crop if all the pods are picked off. I find Walker's Perpetual come in useful for picking out. The Lettuce beds have all been mulched with old Mushroom-beds, and watered up; this keeps the soil cool and moist, and affords nourishment at the same time. All Lettuces are the better for trying up, except the small, quick-bearing Cabbage varieties, of which Tom Thumb may be taken as the type. Sowed a bed of Rampion; it comes in useful for salads. It has small round white tops like a Turnip Radish, and is cool and crisp. Globe Artichokes are being freely watered from the liquid-manure tank. House-leaves, diluted if strong, comes in useful now for many strong-rooting

subjects. Autumn-sown Autumn Giant Cauliflowers put out early in April are beginning to turn in now, and will be very useful if the weather continues dry, as on our hot soils Early London Cauliflowers open and are not good. Spinach substitutes, the best of which is the New Zealand Spinach, are grown instead of the true Spinach, which so soon bolts in hot weather. Sowed Vetch's Red Globe Turnips for autumn and early winter use. The drills were soaked with liquid-manure just previous to sowing; this brings up the plants quickly, and hastens the growth afterwards, and rushes them away from the fly. Finished putting in Pink-cuttings. Shall begin layering Carnations next week, as I like to get all such work done early. Watered Hollyhocks, Fuchsias, and Dahlias freely with liquid-manure. All these things have been mulched with manure, and so one watering a week, except in the very hottest weather, will suffice. Staked up herbaceous plants wherever necessary.

ROSES.

"BOULE DE NEIGE."

The year 1867 was a notable one for light Roses. The arrival at that date of such celebrities as La France and Baroness Roths-

child, not to mention Elie Morel, still often a very useful pale Rose, seems to have been overshadowed by the distribution the previous season of Mile. Thérèse Levet, Monsieur Noman, and Princess Mary of Cambridge; but it was in 1867 that Rose amateurs were excited by the announcement of a pure white Hybrid Perpetual, and there were then sent to this country three white Roses which are still unsurpassed in their respective lines. Of this trio by far the most important was one sent out by the great raiser (who has given the world more first-rate Roses than anyone else), Lacharme, under the name of Boule de Neige (of which an engraving is here given), a Rose whose whiteness has never been excelled, and not even equaled among large-flowered Hybrid Perpetuals until the arrival of the progeny of Baroness Goldchild—Mabel Morrison in 1878, and White Baroness and Merveille de de Lyon in 1882.

Presumably Boule de Neige originated from a cross with some Noisette, and it is generally classed with the Hybrid Noisettes, of which there are now a good many, but although it was one of the first, it is also still the best of its class. It is not often seen at exhibitions, because its flowers lack the depth and perfection of form requisite in show Roses nowadays; but any White Rose that is to supersede it as a garden plant or for furnishing large trusses of bloom for cutting will have to possess a great many good qualities, for Boule de Neige makes an exceptionally handsome plant, having very deep-green lustrous foliage, and producing its snowy flowers in great clusters, which, if cut entire with good long stalks, make a very telling display in large vases. The plant is hardy enough, free-flowering, and one of the most constant autumn bloomers, its flowers being as pure in September as in July; while it succeeds admirably either as a bush, or as a standard, or trained up a pillar, growing on

worth growing; and for a small collection anyone wanting the best three would do well to select Coquette des Blanches and Mme. Alfred Carrière in addition to Boule de Neige. G.

4005.—**White Bankeian Rose.**—You must have patience with this Rose. It will flower all right when it has exhausted some of its vigour. The White Bankeian Rose always grows stronger than the yellow one, and requires more space. You have been well advised not to prune it. Do not cut away any of the growth all the time there is any uncovered wall space. When the allotted space is well covered, and no part of the wall visible, you may get a pair of shears and cut away all the growth that projects from the wall. This may be done as soon as the flowers fade; but after that you must only remove any long vigorous shoots until the same time next year. You are probably aware that it is the small spray growth that produces the flowers, and that these are mostly produced at first on the shoots farthest away from the centre of the plant.—J. C. C.

3998.—**Marechal Niel Rose.**—It is rather late in the season now to adopt the cutting-down plan with your Rose. It should have been cut back at least a month ago. On the whole perhaps you had better let your plant go unpruned this year, and train out any young shoots it may make. Next season as soon as the flowers are over you may cut it down, for even the old wood will send out young shoots, only it will take them a little longer to do so.—J. C. C.

If all of the blooms are off of the plant, and it seems shooting out from near the base, I would remove the bulk of the upper growth that has flowered. If you can grow strong shoots this summer they will flower much better next spring than they did this, because you should be able to get longer shoots and they will be established. Two or three rods to a plant is sufficient, if kept clean and growing healthily.—P. U.

4008.—**Gloire de Dijon Rose.**—You are treating this plant very well indeed. As it is so healthy and clean, I would continue on the same lines. Unless growing very thickly, I would not thin out any of the wood, as it will produce such a quantity of blooms next spring. Yes, I would repot the Marechal Niel and keep it in the house, and under the same treatment as the Gloire de Dijon, cutting it back somewhat, so as to induce healthy and strong growth. The repotting of the other Roses must depend upon the state they are in, and as you are doing the others so well, I think you are quite capable of deciding for yourself.—P. U.

I do not think the Gloire de Dijon Rose worthy of so much space under glass. There are so many much better ones. If you think differently you can, of course, let the present growth remain, only it must not be crowded. The shoots should be from 9 inches to 1 foot apart. The Marechal Niel should be shifted at once in a pot 14 inches or 16 inches in diameter; but do not prune it now the summer is so far advanced. You have done quite right in setting the other pot-Roses outdoors. If they want more root-room I should give it them at once.—J. C. C.

3985.—**Budding Roses.**—It is a little too early for this operation, as a general rule, although where stocks and buds are forward enough it may be done from June until the end of August. July is perhaps the best month, and if you can choose two or three dull days for the work so much the better. You should choose buds that are about three parts ripened, what is wanted being growth sufficiently matured to have the root or seat of the bud well down when the wood is removed, and yet having enough sap to allow of the bark being lifted easily. Cut out the bud in a scooping manner, inserting the knife about an inch above, and bringing it out again an inch below the bud. If you have chosen wood in the proper stage of growth the small portion remaining on the seat of the bud will be easily removed. Now comes the opportunity to see if the bud be really in the right stage or not, and unless the root be down low enough to rest upon the wood of the stock when inserted it is well to try another, unless the variety be very choice, and you do not mind the stock must be



Rose "Boule de Neige."

Brier stock or on its own roots. In the latter state, however, it is not always easy to obtain, as cuttings of this Rose do not strike at all readily. Coquette des Alpes, Coquette des Blanches, and Perle des Blanches were also sent out by Lacharme, and Perfection des Blanches by Schwartz, and all four are White Roses with rather small flowers, but a similar inflorescence to that of Boule de Neige, but with a more decidedly climbing habit of growth in the case of the second and third, which make useful pillar Roses, as do two more recent seedlings from Schwartz, namely, Mme. Alfred Carrière and Faony de Forest, the latter an erect growing, rather rosy-white, the former an immensely vigorous climber, producing an abundance of most charming white flowers, tinted with pale yellow at the base. Mme. Louis Henry (Vve. Ducher, 1876) and Caroline Schmidt (Schmidt, 1882) complete the list of Hybrid Noisettes that are

child, not to mention Elie Morel, still often a very useful pale Rose, seems to have been overshadowed by the distribution the previous season of Mile. Thérèse Levet, Monsieur Noman, and Princess Mary of Cambridge; but it was in 1867 that Rose amateurs were excited by the announcement of a pure white Hybrid Perpetual, and there were then sent to this country three white Roses which are still unsurpassed in their respective lines. Of this trio by far the most important was one sent out by the great raiser (who has given the world more first-rate Roses than anyone else), Lacharme, under the name of Boule de Neige (of which an engraving is here given), a Rose whose whiteness has never been excelled, and not even equaled among large-flowered Hybrid Perpetuals until the arrival of the progeny of Baroness Goldchild—Mabel Morrison in 1878, and White Baroness and Merveille de de Lyon in 1882.

THE CHAMPAGNE

prepared before cutting out the bud, and the quicker and cleaner the whole operation can be managed the better are your chances of success. Whether the stock be a dwarf or a standard Brier you should insert the bud in the same way, and get it as near the base of the shoot as possible. Make a cut lengthwise of the stock—say, about 2½ inches—a short cross-cut may be made at the upper end of this to facilitate the easier lifting of the bark. Do not make your cuts any deeper than just necessary to cut through the young bark. Lift it with a piece of bone or hard wood, and slip the prepared bud under without disturbing the glutinous sap more than possible. Now tie in firmly, and in from three to four weeks you should be able to see if your work was successful or not. If not, try again, even up to the middle of September.—P. U.

The most important matter in budding Roses is to select the right time when the stocks and the buds are in the right condition. Unless the stocks can be heavily watered, budding cannot be successfully done till rain comes, as unless the bark works freely it is useless attempting to bud anything. When the Thorns will rub off easily the bark will generally work freely, and this is perhaps the best guide, though a man accustomed to budding can tell by the feel of the wood if there is a chance of the buds taking. Any way, it will be as well not to be in a hurry with the budding this season. We shall doubtless get rain enough to accelerate the flow of sap by-and-by, and during a showery time the buds take so much better. The operation of budding is simple enough. Two cuts are made just through the bark, one straight along the upper side of the branch 1½ inches long, and the other transversely at the upper end of the long cut. Lift up the bark with the flat end of the handle of the budding-knife, insert the shield of the bud, and thrust it home. The buds should be placed as close to the main stem of the stock as possible in the case of standard Briers, and as low down as possible in the case of dwarfs. In dry weather a little of the earth may be scraped away from the dwarf Briers, and the buds inserted in the moist bark so uncovered. The buds must be taken from healthy wood of moderate growth, just getting a little firm, but still quite elastic, the buds being plump, but not started. Buds which remain dormant through the winter always make good plants, and to keep the buds dormant the stocks should not be headed back till winter, and only partially then, the final heading back being done in March, just as the sap is moving. In cutting out the bud do not have the shields very large. Three quarters of an inch will be large enough, and of this two-thirds should be below the bud. Remove the wood from the bud carefully. Sometimes the centre or heart of the bud comes away with it, and then the bud will be useless. Tie in firmly with soft raffia, or cotton will do, the ties to be loosened as soon as the buds have taken, usually in about a month after budding. If left in much longer they will rot the bark. In dry weather it will be beneficial to mulch and water the stocks and sprinkle the buds.—E. H.

Seven Sister or "Cluster Rose."—This beautiful Rose has been exceptionally fine of late, and although termed a common one it is really one of the most useful of all. For covering high walls, climbing over old tree-stumps, or making any unsightly objects look beautiful it is a gem, for its strong habit of growth enables it to live where more tender sorts fail. I have it now covering a high wall, and basketfuls of bloom can be cut without being missed, yet it keeps pushing up rampant shoots from the base quite 10 feet high already. I retain these, and lay them in at full length, and after the blooming season is over I cut away a good deal of the old exhausted wood, and the blooms are remarkably fine and plentiful from the strong shoots. I find it a very good plan indeed to apply a mulching of half-decayed manure over the soil (early in the season) and almost all other Roses; especially in a dry season is this invaluable.—J. G. H.

HOUSE & WINDOW GARDENING.

CLIMBERS ON HOUSES.

CHARMING effects may easily be produced on a house wall by a judicious use of climbing plants, Honeyuckles, Roses, Wistaria, &c. But in suitable localities nothing can exceed the beauty of the Magnolia (Exmouth variety), as shown in the annexed illustration.

3992.—India-rubber plant.—Heat is usually supposed to be necessary to strike cut-



"Magnolia" on a house wall.

tings of this plant, but I have seen it done without, and you could not have a better time to try than the present. Take the cuttings off with a "heel," let them lie on a dry shelf for a few hours so that the cuts may heal, and then insert them singly in small (2½-inch or 3-inch) pots, filled with a mixture of equal parts of fine loam, sifted Cocoa-nut-fibre, and sand. Plunge the pots in ashes or Cocoa-nut-fibre in a box deep enough to allow of a sheet of glass being laid over, and keep them close, moist, and shaded until rooted.—B. C. R.

The young shoots need not necessarily be taken off—at least, not yet. It is quite possible that the upper shoots will take the lead, and the lower ones will not make much growth, but I should wait and see. When from 4 inches to 6 inches long the young shoots may be taken off, and planted in small pots, filled with sandy soil. If kept close and shaded they will root in the greenhouse during summer, though a little bottom-heat will help them. Still, if covered with a cloche or handlight they will root during the warm season.—E. H.

You may certainly strike this from cuttings, but they require heat, and a little bottom heat promotes quick rooting. Put them in a little propagating frame if you have such a contrivance, usually possessed by amateurs? Do not bruise the bases, and perhaps you have not kept the parent plant properly attended to. Here are a few wrinkles for the proper management of the Ficus. Keep the leaves always carefully sponged with tepid water to remove dust and other accumulations. During the summer season small plants are hewed about, and these are struck for eyes in the continent, and when received here by English nurserymen grown in high heat to get them ready for sale. Therefore, always when purchasing keep the plants in the warmer rooms, and not exposed to cold currents of air. When the cuttings are rooted, pot them on, and use for soil a mixture composed of sandy loam, two parts, added to one part of peat, with sufficient sharp silver sand to make the whole not too heavy. Pot firmly.—C. T.

3994.—Treatment of Indian Azaleas.—These are not amongst the easiest of plants to cultivate in a room, and special care is necessary

to make them flower. Indian Azaleas are, however, nearly hardy, and probably the warmth of the room (and the consequent dryness of the surrounding atmosphere), is partly to blame for the want of blossom. Thrip is almost certain to appear where Azaleas are kept in a dry, warm place, and this will prevent them from blooming. The signs of this insect pest are easily detected in tiny black and white spots on the back of the leaves, and these very soon spread until the leaf becomes a pale, dull colour, and eventually drops off. To eradicate thrip a bath of soft-soap and Tobacco-water should be made, into which the plants can be dipped every day for a week; afterwards syringing them with pure water. Two ounces of soft-soap and one of "shag" Tobacco, hoiled together until the liquid is a dark brown, can have enough cold water added to it to make four gallons in all, and be placed in a large earthenware pan or basin. If the plants are too large to be satisfactorily dipped they must be syringed from beneath, laying them on their sides to do this effectually. Small plants can be sponged leaf by leaf, but this is a tedious process in the case of Azaleas. To prevent thrip from attacking the plants again they must be allowed to stand out-of-doors in summer, in a situation shaded from the hot sun, and syringed daily, so as to throw plenty of water on the surrounding etonee (or thick bed of ashes), which will supply the damp night atmosphere they need. Plenty of water must also be given daily; neglect, in this particular, is fatal to any prospect of flowers, and Azaleas, being grown in peat, should have a full inch of room at the top of the pot for a plentiful supply, which must permeate the whole ball of roots. The special difficulty, however, comes in when it becomes necessary to take the plants indoors in September, unless there should be any small structure in which they can be placed for the winter. Damp air must be had for them, and the best arrangement that can be made is to place them in the window of a bath-room, from which frost is just excluded, and turn on the hot-water for a few minutes, morning and night, to moisten the air. Failing this, a large tray or zinc arrangement, or even a flat bath, can be covered with a layer of Cocoa-nut-fibre or Moss, and the plants placed on this, keeping the whole damp with a roset watering-pot in a room without a fire. During very severe weather the Azaleas should be lifted back from the window end covered with newspapers at night. They will stand a few degrees of frost under these circumstances, and be none the worse for it. Without the damp warmth of a conservatory the plants will flower late, but still they should do well, bringing their blossoms in April or May. As each blossom fades it should be removed at once (for seed-bearing exhausts the plants), and the plants should be kept rather close (i.e., without so much air as usual) and warm, with the air well-moistened, until July, when they are best out-of-doors until the autumn.—I. L. R.

3989.—Mackaya bella.—This is a South African plant, and grows very freely under greenhouse treatment; but it cannot be prevailed upon to produce its flowers in proportion to its growth. What it does require is to be encouraged to grow freely in a light position during the summer, so that the young wood is well ripened, for it is from the points of these well-ripened shoots that the flowers are produced. It may be propagated from cuttings struck in a close frame or handglass during the summer, so that nice, compact plants may be obtained by the end of the season. The resting period is from November until March, and during that time the plants do not need any water. When growth begins repot the plants in a mixture of sandy loam, decayed manure, and a little leaf-mould. They may require repotting a second time and growing on well, as advised above, until the end of the season. These must again pass through a season of rest, which is the period they require for flowering in the ensuing summer. They should be started in a temperature of 55 degs. to 60 degs.; but when the flowers are produced they will remain longer in good condition in a warm greenhouse. The plant is nicely figured in the *Botanical Magazine*, tab. 5797, from a plant that flowered in the Palm-house at Kew in May, 1860.—J. D. E.

OUTDOOR PLANTS.

THE ROUND-HEADED "HIMALAYAN PRIMROSE" (PRIMULA CAPITATA).

In reply to "J. H. Streatham," and others, this plant has a tuft of sharply-toothed, medium-sized pale-green leaves, and produces in autumn dense heads of flowers of the deepest Tyrian purple, enveloped in a white mealy powder, which shows off the blossoms to great advantage. It is very variable as to depth of colour, some forms of it being much superior to others. It is not a very vigorous grower, and, though quite hardy, it cannot be termed a good perennial in our climate, as it is apt to go off after it has flowered well; therefore, it is advisable to raise annually plenty of young plants from the seeds, which the plant produces freely in most seasons. These, if sown in pans of light soil in a frame or cool greenhouse, produce plants that will flower the second year with very little trouble. It thrives best in an open position in the garden, with a north aspect, in good loamy soil, which should be well watered in dry weather. The annexed illustration gives a capital idea of the Primrose in question when in flower, and it is best planted in colonies, or groups. R.

HERBACEOUS PÆONIES.

Or hardy flowers in the open ground in the summer-time, there are none so beautiful as herbaceous Pæonies. Among the flowers will be found every conceivable shade of crimson, purple, lake, cerise, carmine, together with the equally beautiful and more delicate shades of rose, pink, bluish, flesh, and satin-rose. And then there are those with sulphur tints as well as those of pure and spotless whiteness. Fine massive white varieties exist too, as in the case of *festiva maxima*, having some of the inner petals occasionally margined and sometimes flaked with carmine. This is so good and distinct that no collection is complete without it, and one that everyone who sees it requires; consequently, though among the older kinds, it is still among those higher priced. Independently of the distinctive shades of colour above named, many varieties combine two or more shades. Another very pleasing feature to be found in many kinds is their fragrance, in no case overpowering, thus adding an additional charm to a group of plants which in their day are without an equal in the hardy flower garden. But with all their beauty, it can hardly be said that Pæonies have had either the popularity or the general cultivation to which, I feel sure, they are justly entitled, for it is rarely one meets with a good collection in private gardens. This may to some extent be accounted for, owing to the length of time the plants take to grow into size after planting. This varies from three to five years, according to the size of the plants themselves. This fact, again, may in not a few instances prevent their being planted in the open beds in the first instance, which is by far the best place for them; and consequently they are for the time being grown in the reserve ground till sufficiently large to occupy permanent beds. This, however, is a mistake and involves replanting them, which means the loss of one year more. Frequently I have seen them in shrubberies with scores of this flowerless growths in them, causing annual disappointment to their owners. The worst place for Pæonies is the shrubbery, particularly where the plantation does not receive due care and is backed by trees of larger size. Pæonies, to do them justice, delight in, indeed must have, the richest of soils, and in all cases where possible be supplied with abundant moisture in summer. Avoid moving them when once well planted, for they will go on year after year rooting deeper and deeper and increasing the number of their rich and beautiful flowers annually. Let them in all cases occupy their permanent quarters where first planted, and if this should happen to be in a conspicuous spot on the lawn, there are plenty of things to carpet the ground and flower freely enough till the Pæonies are deemed sufficiently large in themselves. Tufted Pæonies are excellent for this purpose, and while delighting in the good soil at disposal, seem thankful for the partial shade from the Pæonies. And are benefited by the moisture applied to these plants. And if the eye tires of Pæonies, these may give place to Tuberoses, Begonias, Mignone-

tte, Ageratum, Heliotropes, or such things as are not deep rooted and are easily planted and removed. Those who require distinct kinds would do well to select them now they are in flower. E.

3987.—Soil for Petunias.—These are very easily grown, and are not very particular as to the soil need for them, but when they are grown in flower-pots it is well to do the best that can be done for them. They form roots so freely, and grow at such a rapid rate that the soil soon becomes exhausted, and the plants require feeding with manure-water to prevent the leaves from becoming yellow at the base of the growths. Use good yellow loam three parts, one part decayed manure, and one part leaf-mould, with a little crushed bone manure and coarse sand added to it. They require plenty of pot-room and a free supply of water when the pots are well filled with roots.—J. D. E.

— A compost of three parts fibry loam, one part horse-manure, fermented sufficiently to throw off the rank steam, half a part of peat, and sufficient sharp silver-sand to keep the whole porous, will grow Petunias well, providing, of course, other details, such as watering regularly and providing the plants with a cool position in a pit, shaded from the bright midday sun which influences paleness in the colour of the leaves. The young shoots should be regularly stepped when 4 inches long to induce others to grow, if large specimens are required, until six weeks before the time when they are expected to be in flower. Daily syringings will keep the foliage clean and healthy; this is best done in the evening after a hot day.—S. P.

— Pot them in old rotten turf and leaf-mould, two-thirds of the former to one-third of the latter. Very old manure would do in the place of leaf-mould. A little sharp sand should be added to keep the soil open and sweet.—E. H.

— A free, sandy loam suits these plants best, and a compost consisting of three parts of this material to one of leaf-mould suits them admirably. The double varieties may have a very little well-decayed manure also.—B. O. R.

— A compost consisting of loam, leaf-mould, and a fair sprinkling of sharp silver sand will suffice. Give the pots drainage, and not moderately firm. The plants will succeed well in a greenhouse. They may also be used as bedders for the open, and should be put out now. A bed of Petunias in fairly light soil is very charming, but the flowers should not be too tall; it is a mistake.—C. T.

A good White Pink.—An excellent variety is Mrs. Lakin. The flowers are very pure, large, not too full, and therefore do not

time to put in pipings, and then work for cuttings, and they strike easily, as recently pointed out.—C. T.

3991.—Creepers for walls.—If evergreen creepers are required for both the sites named nothing is better than Irish Ivy or the Ragneriana variety for the north-east aspect. *Euonymus japonica* and *E. j. aurea* will generally withstand the winter in such a site, and so will *Pyraeanthus crataegus*. For a south-west aspect *Ceanothus divaricatus*, *Escallonia macrantha*, and *Garrya elliptica* may be planted with safety. In the case of deciduous subjects there is a wider choice, as any of the following will succeed; *Clematis Jackmani*, or *C. montana*, *Aristolochia Sipho*, *Lonicera brachyepeda*, the common White Jessamine, *Gloire de Dijon* and *Aimée Vibert* *Roses*, *Kerria japonica*, and *Chimonanthus fragrans*.—S. P.

— Plant in the north-east aspect a selection of Ivies. There are beautiful things among Ivies to be had cheap now, or *Ampelopsis Veitchi* will soon cover the wall, and be beautiful in summer and autumn. If flowers are wanted plant Honeysuckles. *Jasminum nudiflorum*, *Fire Thorn* (*Pyraeanthus*), *Cotoneaster Simonsi*, and *C. microphylla* will cover the wall neatly, and be bright with berries in winter. On the south-west wall plant *Roses*, *Jasmines*, and *Clematises*. The *Wistaria sinensis* also will do well.—E. H.

— There are many creepers you might plant against your wall. In the south-west aspect such *Roses* as *Gloire de Dijon* and *Chechunt Hybrid* would succeed, any good strong-growing climbers, and you may choose also any of the following: *Veitch's Virginian Creeper*, which is most suitable for a very high wall or the side of a house. It is quick in growth and clings closely. Then you might choose a good green-leaved Ivy, such as *Emerald Green* or *Gem*, or a variegated variety, *Lee's Silver*, but there are many other nicer things that may be chosen. Very beautiful is the old *Double Kerria* against a wall, smothering it with dense yellow flowers in spring, and it is not much sufficient use of in gardens. *Clematises* of many kinds can be chosen, such as *Jackmani*, its deep purple flowers very rich against Ivy leaves; *C. montana*, or the various handsome varieties that may be obtained, some with semi-double, others with single, flowers, the colours delicate and pleasing. *Jasminum nudiflorum* is beautiful in winter and



Round-headed "Himalayan Primrose" (*Primula capitata*).

split so much as many other kinds, and also sweetly scented. There are many White Pinks in gardens, and a beautiful edging is formed by the common variety, but the flowers of Mrs. Lakin are finer, the growth is strong, and a healthy clump will produce much bloom. In the month of June every garden should be gay with good clumps of the White Pink, and if variety is required from the ordinary kind, select Mrs. Lakin, and Her Majesty, or Mrs. Simons, which is a good kind for making a mass white, like little snowdrifts. Now is the

early spring; so also is the fragrant *Chimonanthus fragrans*, which blooms in the depth of winter, and has curious yellowish flowers of spicy, aromatic scent. Then you can select some of the Honeysuckles, Passion-flowers, for a warm corner. *Pyraeanthus*, which is a very handsome plant for a wall; it produces a profusion of white flowers at this season, and in winter its berries are orange-scarlet, and make a grand show of colour. A good specimen of it, with its abundant foliage and fiery coloured berries, is a fine winter picture. *Pyrus japonica*, the

Wistarias, and a few Vitis may be included. The Hop-leaved Vine is ornamental in character. There are plenty of good plants for walls without making a mere repetition of one's neighbours' things. It is a relief to see a wall covered with something besides the Common Virginian Creeper. Half the failures with climbers result from insufficient preparation of the soil. The roots are not properly laid out, and if bad, the soil should be made acceptable to the plants by preparing it properly. If you have a moist, shady corner, it would be better to put there the Ivies, which always, both variegated and green-leaved kinds, attain greater luxuriance of growth under these conditions. As regards plants for boxes, you may use such things as Pelargonium Mme. Creouse, to trail over sides, or other varieties; Toberone Begonias, Fuchsias, Canary Creeper, and other familiar things. In GARDENING, June 10th, page 209, "I. L. R." gives some valuable hints for window-boxes. You would do well to read them.—C. T.

ORCHIDS.

CATTLEYA VELUTINA.

I AM asked by "Joseph Bidwil" what sort of a species this is, and if it worth his getting, as he sees that a firm at Bradford are offering it, but he has never heard of it before. The Cattleya in question was first sown in your city some thirteen years ago in the collection of Mr. Broome, who then resided at Didsbury. I may at once say that it is a very beautiful plant and very distinct, and if you are a grower of Cattleyas it is a kind which you ought by all means to add to your collection. This plant, many, on its first becoming known, wished to assert its hybrid origin, claiming as its parents *C. guttata* and *O. bicolor*, but although it somewhat resembles the last-named Orchid in its habit of growth, I, myself, can see no other resemblance, and the Sower appears to be too much developed in all its parts to be an offspring of either. Since its first introduction, the plant, however, has been met with on several occasions in great numbers, which leads me to think either that there are a good many more new Cattleyas in Brazil than we have ever dreamed of; or, if they are hybrid kinds, we shall yet have to find their parents. Now, this plant, although it varies considerably from bad to good varieties, has not much variation in its colour. As a usual thing, it may be said to have slender stem-like bulb, varying from a foot to 18 inches in height, and bearing upon the top a pair of ample leathery leaves, from between which the scape appears, bearing two Sowers, and I cannot call to mind ever having seen more horns upon a single scape, so that it is as well to have a plant with more than one leading growth. These Sowers are nearly 4 inches across, and very sweet scented, resembling the fragrance of Violets. Sepals and petals about the same size, of a rich tawny-orange ground colour, thickly spotted with maroon-purple. The three-lobed lip has the side lobes curved upwards, partially enclosing the column, creamy-white, streaked at their base with rosy-purple; middle lobe large, covered with a short velvety down, white, strongly veined with radiating veins of purple. It has a stain or blotch of orange at the base, and round the apical margin is a stain of soft yellow. These flowers last a long time in perfection, and perfume the house in which they stand beautifully. I have been describing a good variety, be it understood, but I have seen a great many Sowers which would not come up to it. Nevertheless, they only differ in their brilliancy of colour. It blooms in the autumn months, at which time Sowers used to be scarce, but we now have a goodly number all the year round. Now, to grow this plant well requires considerable care, but yet only such care as should be given to all Orchids; but some of my readers imagine when I say a plant is very easily grown that no care is requisite at all, and they treat their plants with a great deal of carelessness. Upon this subject I have had two letters recently, and my friends may take this for an answer. This Cattleya I have before said makes a very slender stem-like growth, and, therefore, it requires extra care in its management. It must be well drained and firmly potted, using good peat fibre and chopped Sphagnum Moss, and the rhizome should always stand upon the surface of the soil. The plant

does not require quite as much water to the roots during the growing season as do many of the same genus, and neither can it withstand so much drying, so, therefore, in the winter extra care is necessary to keep the plant nicely moist in order to prevent its thin bulbs from shrivelling. It likes when growing to stand at the warm end of the stove or Cattleya-house, and to have a good moist atmosphere maintained in the house, which should also be well and properly ventilated. The plant should be well exposed to the sun and light, shading only when the sun shines very hotly, and then one must remember that their plants are under glass, and if the leaves are to be preserved in a sound and healthy condition a slight shade is necessary. The plants during the winter must be kept sufficiently cool to prevent them starting into growth at that season. MATT. BRAMBLE.

CATTLEYA EL Dorado AND ITS VARIETIES.

I AM asked by "O. Hughes" to say something about Cattleya Wallisi, so as to enable him to grow it and to Sower it? and as this is a pure white form of *C. Eldorado*, more correctly named *virginialis*, I have thought it best to make a general chapter of this gorgeous form of the *C. labiata*, which moreover is as distinct as it is beautiful and unlike most of the other forms of that species which grow naturally in comparatively cool regions and a tolerable equable atmosphere, whilst *Eldorado* is found in the hot district of the Rio Negro somewhere near about the place of its junction with the River Amazon, and this region we are told by Wallace is very hot and at some time in the year very dry, so that to grow this Cattleya well it must be given a lot of heat, and I have succeeded with this plant and its varieties in the best manner when I have grown it in the East Indian-house, maintaining for it a good moist atmosphere. It is now about twenty seven years ago since the typical plant was introduced through M. Linden, of Brussels, and a year or two afterwards the plant was brought to me; since then, however, I have upon several occasions received plants from its native home, and it is a plant which has always done well with me. Upon one occasion I had a very good consignment of the whitovariety called *virginialis* sent home. These plants arrived home in the month of December, and by the time we get them trimmed, washed, and potted, and placed in position, with East Indian temperature, the days began to lengthen and the sun to get more power, and so the plants grew and went straight on until the month of September, when many of them Sowered. I have also had the fine variety called *splendens* sent me some direct, and all have done well under the treatment recommended above. They were potted at first in pots, having only their drainage material in, and as the plants began to root the soil was put in, and so the plants were built into the soil, which they soon occupied, and many roots peeped out, and in these pots they remained for three or four years, simply picking the surface over, and renewing it every spring before the plants began to grow afresh. The soil should be good peat fibre, from which all the fine soil has been beaten, mixed with chopped Sphagnum Moss. This Moss, with the Cattleya soil, I have been called over the coals about by many Orchid-growers, but I have always maintained it was right in recommending it, and I have always said the rotting of the roots came about by overwatering the plants, and I have proved this, for in the case of Cattleyas grown in two collections half a mile apart, the water supply coming from the same source, I find the man who has his plants potted in all peat has nearly all his roots rotted quite away and the plants look miserable, whilst the other collection is potted as I recommend, with about a fourth of the whole chopped Sphagnum Moss. These, with careful watering are rooting and doing well; so I see that there can do with Sphagnum Moss to these Cattleyas as well as I can, and so I shall continue to recommend its use. I know nothing of the *Polypodium* fibre, which I have seen used by Belgian growers, but in England it does not find much favour, and, indeed, I cannot see anything which I can say in its favour. The best varieties of *C. Eldorado* are *splendens*, which is a magnificent form of the typical plant, which it is similar in growth. The flowers measure between 5 inches and 6 inches across,

the sepals and petals being of a full clear rose. The large lip is beautifully toothed round the edge; the throat is rich orange, and surrounding this is a broad belt of white, leaving a broad marginal border of rich violet-purple. About three Sowers are the most I have seen it bear upon the spike. The variety *virginialis*, which the enquirer has by the name of *Wallisi*, is a beautiful pure-white flower, having a broad hint of orange in the throat, and the edge of the lip is prettily toothed, besides yielding a delightful perfume. The variety *crocata* is also another, but this gives me less pleasure than the two recommended above. The sepals and petals are white, suffused with light-rose or mauve, and the lip is deep-orange at the base. Nevertheless, all the above are worth growing, and their Sowers last a long time in perfection. It is well not to allow them to remain too long upon the plant; but they should be cut and inserted in the little tubes which I have so often spoken of, and placed in and about the house in order to produce a good effect. MATT. BRAMBLE.

4004.—Orchids in a greenhouse.—You do not say whether the Orchids are to be grown with other plants in the greenhouse, but I imagine it is so. In that case the choice is not very wide, although your winter temperature is suitable. In the summer I am afraid it is likely to be a little too high. I will, however, give you the names of a few sorts which I grew for four years with other plants with a fair amount of success. I must, however, first say that the results depend more on the attention given to minor details than on the temperature. To know when to give water and when to withhold it, and when to rest a plant, and for how long, are points in the management that require some amount of practice and observation to manage them properly. I have grown and flowered successfully every year *Odontoglossum grande* in a winter temperature of about 45 degs. to 50 degs., and after it had Sowered placing it in a warm vinery to make its growth, and always keeping the soil more or less moist. *Odontoglossum Rossi majus* does exceedingly well with other plants, and blooms regularly in the spring; and about a month later *O. Alexandrie* and *O. Pescatorei* will blossom if the treatment is right. *Onocidium oculatum* and *O. flexuosum* are easily managed Orchids that flower regularly every year. I started with half-a-dozen varieties of *Lycaste*, but only half of that number were satisfactory in such a low winter temperature. These were *Skinneri*, *Skinneri maculata*, and *aromatica*. I see by my notes, made in 1890, that I had the sweet-scented *Odontoglossum pulchellum* in Sower on May 15th that year. *Cypripedium insigne* anyone can grow who has a warm greenhouse in winter, and it will Sower regularly every autumn if it is kept in a fairly high temperature all the summer. My favourites of all Orchids suitable for an amateur to grow are the *Madevallas*, and the best of these is *Harryana*, the flowers of which are of violet- crimson colour, and they are freely produced, the plant being at its best about the middle of March. I found this and *M. ignea* very easy plants to grow if they did not get too much moisture in the air during the winter. *Coeloglossum cristata* is a very accommodating plant, and is well managed and Sowered every year in hundreds of gardens where no other Orchids are grown.—J. C. O.

—When the temperature is never under 45 degs., all the cool-house Orchids will do admirably, but the dry atmosphere which is almost necessary for Cape and New Holland plants, and the abundant ventilation does not suit the Orchids; they must have a moist atmosphere, and drying winds blowing through the house are fatal to the Orchids. I would try the *Odontoglossum*, such as *O. orlopum*, *O. Pescatorei*, *O. Cervantesi*, *O. serdatum*, *O. Edwardi*, *O. Rossi*, *O. luteo-purpureum*, *Epidendrum vitellinum majus*, *Maxillaria grandiflora*, *Lycaste Skinneri*, *Madevallas Harryana*, *M. Veitchianum*, and *M. Lindeni*; *Cypripedium insigne* in variety; *Bletia hyscolinthina*, and *Dendrobium Jamesianum*.—J. D. E.

Drawings for "Gardening"—Readers will kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruits and vegetables for drawing. The drawings so made will be engraved in the best manner, and will appear in due course in GARDENING ILLUSTRATED.

TREES AND SHRUBS.

THE COMMON YEW AND ITS VARIETIES.

THE varieties of the common Yew (*Taxus baccata*, Lin.) are numerous, and half a dozen of them at least are popular favourites—namely, *T. b. adpressa*, which was erroneously considered a species; *T. b. hibernica*, which has a majestic columnar habit; *T. b. Dovastoni*, which has its branches staged in pendent whorls; *T. b. variegata aurea*, which has the leaves variegated with yellow; *T. b. v. argentea*, leaves variegated with white; and *T. b. fructu-luteo*, of which the fruit is yellow. The other forms, many of which are handsome or interesting, are more rarely met with in cultivation; still a pretty considerable number of them might be enumerated. Loudon described six.

M. Carrière reckons twenty-six, of which he gives descriptions and synonyms. The catalogue of M. A. Lavallée mentioned eighteen, and in some collections several varieties are to be found which are not included in any of the works cited. Now the question arises, Can a selection be made from amongst the numerous ornamental varieties of the old Yew of our mountains? Undoubtedly it can; all of them have not an equal claim to our favour. In addition to these which I have just mentioned as being most generally planted, and which deserve a place in every garden, the following varieties may be recommended with confidence: *T. b. erecta* (pyramidalis or stricta), which has an elegant, fastigiate, close-branched habit, slender, erect branches, and straight, slender, deep-green, and short-pointed leaves. *T. h. cheshn-tensis*, which originated at Chesnut, has a close-branched habit, but the branches are not fastigiate.

The leaves are dark green on the upper surface, glaucous underneath, slightly curved and long-pointed. Over and above their more or less elegant habit, these Yews possess another source of ornament in their fruit. Everyone knows the pretty red berries which adorn these trees in autumn, and which continue to do so until the frosts come on. Some particular trees are sometimes profusely laden with them; others seldom or never bear any, which is chiefly the case with the cultivated varieties, and this is not surprising when one remembers that the tree is dioecious, besides the fact that certain forms which have been established by means of grafting or budding are only capable of being produced with male plants. I have observed in several parts of France that the Yews bear an unusually great abundance of fruit. In the nurseries of M. Louis Leroy at Angers, this

abundant fructification was observable even on the youngest plants, which were growing in beds, and most of these if they had been potted would have formed charming ornamental subjects for the drawing-room or the dinner-table. It occurred to me to gather a few branches and closely examine them. At first the forms and colours appeared identical, with the single exception of the pretty yellow-fruited variety; but I was soon struck with differences of characters which at first sight I had not noticed. These differences were not confined to the fleshy cup which forms the coloured and pulpy part of the fruit, but also extended in a remarkable manner to the nucule or seed itself. The fruit gathered from different plants exhibited fixed characters, and I thought it might be useful if I described them more minutely than anyone had

the greater part of the seed, which is ovoid in shape, brown or russet-coloured on two-thirds of the upper part, roddish on the lower part, blunt at the top, with slight ribs, and finely dotted on the surface.

T. b. VARIEGATA AUREA.—Habit and foliage similar to those of the type, sometimes more compact. Leaves more or less margined with yellow. Scales at the base of the cup imbricated, blunt, of a straw yellow colour, tinged with violet. Cup like that of the type. Nucule or seed oval roodish, slightly or not at all angular, pointed at the apex, and with a triangular or quadrangular scar or hilum. The silvery-variegated variety (*T. h. v. argentea*), which is very distinct, by its white markings, from the preceding variety, is easily mistaken for it in the autumn, when the silvery variegation takes on a yellowish tint.



OUR READERS' ILLUSTRATIONS: Old English Yew at Coniston. Engraved for GARDENING ILLUSTRATED from a photograph sent by Mr. John Lowe, M.D.

T. b. FRUCTU-LUTEO (see Fig. 1, page 234).—Habit erect; branches more or less divaricated; leaves short, linear, short-pointed, deep-green on the upper surface, pale underneath, and slightly curved. Scales obtuse, lemon-yellow in colour, tinged with violet at the top. Cup oblong, of a fine golden-yellow colour, very much hollowed out in the interior, with an oval or slightly angular orifice and completely enveloping the seed, which is seated at the bottom of the cup. Seed oval, compressed, of an olive-green colour, and having a large oval hilum, the circumference of which is finely plaited; apex of the seed obscurely keeled, depressed, and with a blunt point. This variety is in some collections erroneously grown under the name of *T. cuspidata*, a Japanese variety which some authors consider a species.

T. b. DOVASTONI (see Fig. 2, p. 234).—Habit,

provisionally done. In order to show these fixed diversities plainly I had the accompanying illustrations drawn, and they will give a very clear idea of the differences of characters, especially as regards the nucules or seeds, which are represented as of double the natural size. These illustrations and descriptions may prove useful to anyone who undertakes a monograph of the genus, and also may assist growers in identifying forms which are difficult to distinguish from others. I intend to continue them next year in the case of any other varieties that I may find bearing fruit.

TAXUS BACCATA (type).—Easily distinguished by its spreading habit, horizontal branches, linear-obovate leaves, which are more or less curved and terminate in a sharp or slightly blunted point. Fruit cherry-red, cup pitcher-shaped, with a rounded orifice end enveloping

pyramidal; branches sub-verticillate, spreading reflexed at the extremities. Leaves large, distichous-scattered, very much curved, cuspidate, dark-green on the upper surface, pale underneath. Scales obtuse, of a straw yellow colour, edged with violet. Cup oblong, rather short, of a lively cherry-red colour, and with a square orifice. Seed very deeply sunk in the cup, of an oval, compressed shape, and having an oval hilum with a pitted circumference; top of the seed bluntly square, scarcely pointed; surface of the seed rough.

T. b. ADPRESSA (see Fig. 3, p. 235).—Habit spreading, sub-horizontal; branches short. Leaves distichous, short, linear-obtuse, short-pointed, deep-green on the upper surface, pale underneath. Scales obtuse, of a straw yellow colour, tinged with violet at the top. Cup vermilion-red, very broadly angled, not covering the seed,

which is ovoid, depressed, terminating very abruptly in small points at the top, which is twice or thrice keeled, and has a depressed centre with a projecting point; hilum heart-shaped. This variety was considered a species by some authors, and had also been described as a *Cephalotaxus* (*C. tardiva*), but it has frequently been clearly proved that it is a sport from *T. baccata*. At the present time, in the park of Megandais (Mayenne), which belongs to Count G. de Cray, a Yew may be seen, several large branches of which exhibit the characteristic



Fig. 1.—The Yellow-fruited Yew (*Taxus baccata* fructu-luteo). (See page 233.)

both of the type and of *T. h. adpressa* very clearly together, and this is probably not the only existing case which might be instanced.

T. b. MUSENICA (see Fig. 4, page 235).—This is the pyramidal Irish Yew, which bears the same relation to the common Yew which the spiny Cypress of the South does to *Cupressus sempervirens*. Habit fastigiata; branches short, stout, close-growing, erect; leaves stout and long, linear, aciculate, more or less straight or curved, deep-green on both sides. Scales obtuse or slightly acute, of a straw-yellow colour tinged with violet. Cup of a lively cherry-red colour, slightly oblong in shape, with an angular orifice and half covering the seed. Seed oblong and ovoid; hilum sunken, triangular or quadrangular, margined with furrows and folds; apex of seed mucronate. The variegated form of the same variety (*T. b. h. variegata*) has the same habit, with loevener more or less margined with yellow. A fine old Yew is illustrated on page 233.

Garden.

3995.—Flowering shrubs.—Evergreen shrubs growing the knight named are not so plentiful. *Ligustrum japonicum* (the Japanese Privet) is a showy subject when covered with its long spikes of Lilac-shaped white flowers and glossy green leaves. The Strawberry-tree (*Arbutus Unedo*) would probably answer the purpose, and grow that height in a short time. Rhododendrons or Kalmias would be really first-rate subjects for such a place, but if the natural soil is either composed of clay or has limestone or chalk in it these plants would not grow. It would be necessary to entirely remove the whole 2 feet deep, and replace it with peat. *Magnolia grandiflora* would most likely be suitable for such a site, and being evergreen would be of the right kind. A sandy loam is the soil which suits this subject the best. Amongst deciduous trees *Philadelphus grandiflorus*, *Spiraea crisifolia*, *Deutzia scabra*, *D. crenata* fl. pl., *Lonicera tatarica*, *Amelanchier Florida*, *Lilac* Charles X., *Magnolia speciosa*, and *Gulder Rose* (*Viburnum opulus*), are free-flowering subjects, and of quick growth also. The month of April in a good time to plant all evergreens, and October or November for deciduous trees. With the exception of the Rhododendrons any good garden soil will do the others named. A mulching of manure over the surface at planting time will not only preserve the roots from frost during the winter,

but will conserve the moisture in the summer if the weather be dry.—S. P.

— Yours is a none too easy question; but the following will prove suitable. You should have given the locality in which you reside, as that is very important. *C. biguonoides* is a good tree, the flowers not unlike those of a Horse-Chestnut, and appear in August. It likes a moist and rather sheltered position. The Strawberry-tree (*Arbutus Unedo*) is worth noting, the shrub being evergreen, and blooms freely. But it is not thoroughly hardy, and if your garden is not warm it is better not to risk it. *A. Androsace* is a common shrub, and hardy, evergreen, and handsome in aspect. Amongst the Magnolias you might try *M. glauca*, which grows from 12 feet to 15 feet in height; but here, again, it is not always satisfactory. The foliage is evergreen, and the white flowers are powerfully scented whilst they are produced in the month of July. If you care for Rhododendrons you might make a selection of this, some finely-flowered kind as *Blandyanum*, or you can choose the picturesque Medlar, a very beautiful tree to my mind when spreading out its characteristic growth on a lawn, whilst the Quince is also available. A good specimen of this tree is full of charm, the branches clothed with leaves, and a perfect picture. The Californian *Garrya elliptica*, an evergreen of handsome aspect, is useful, and its catkins are produced in winter, and are pretty when out for placing in a vase in the house. Varieties of the Syrian Mallow (*Hibiscus syriacus*) may be selected, and the shrub flowers in late summer; but the soil must be moist and fairly rich. It is called in some nurseries *Althea frutex*. The Fuchsias, such as *F. Riccartoni*, are very lovely, their slender shoots being perfectly covered with crimson flowers. Then you may have *Thorus*, such as Paul's Double Scarlet, *Laburnum*, or *Hydrangea paniculata grandiflora*, which produce immense heads of flowers. I should have thought, but, of course, I am not competent to really advise without seeing the place, that it would be better to form good hods of dwarfier shrubs, of which there is a host of beautiful kinds, on the turf. The *Hydrangea*, *Daphne Mezereum*, and many others are excellent thus arranged.—G. T.

3971.—Caterpillars in a shrubbery.—The plant in your shrubbery which is being destroyed by caterpillars is, I have no doubt, from your description, the Spindle-tree (*Euonymus europæus*), and the caterpillars those of one of the small Ermine Moths (*Hypoconema Euonymellæ*). They should be shaken or beaten out of the bushes and trampled on, or the bushes may be well syringed with 12 lb. of soft-soap and the extract from 5 lb. of Quassia-chips, added to 100 gallons of soft water; but the mixture must be applied with considerable force to break the webs.—G. S. S.

3996.—Planting Rhododendrons.—These should do very well in good fibrous loam, but an admixture of peat will certainly benefit them. Plant in the autumn, and do not let them get dry at the roots, as few shrubs suffer more from drought than Rhododendrons.—A. G. BUTLER.

— These plants will not exist in lime-stone soil let alone chalk. It will be necessary to remove the whole of the natural soil 3 feet deep, and replace it with peat. If leaf-soil could be obtained it would economise the peat one part in three. The month of March or early in April is the best time to plant.—S. P.

— It will be a waste of time and money to plant Rhododendrons in a lime-stone soil; but if a bed is made of peat and leaf-mould they will do very well.—E. H.

— So far as the safety of the plants is concerned you may move them as early as the middle of September, but I do not advise such early planting, for the reason that the flower-buds are not then perfectly formed. The end of October is the best time, although they can be moved with safety from that time up to the end of March. Rhododendrons will not grow in some kinds of loam; whether it will in that to which you refer I cannot say. The loam that I have had to deal with in growing acres of these plants is of a soft, friable nature when dry, and made up of minute particles; but if it is moved about when it is wet it works into a sticky paste. If your loam is at all of a sandy character the probability is that they will do well in it. Two years' experience with, say, a dozen plants, would decide the question better than any suggestions that can be given you.—G. C.

— There are many questions asked from time to time about soil for Rhododendrons, but I do not think I can better that mentioned in Mr.

Anthony Waterer's advice on the matter. He is one of the greatest Rhododendron growers in the world. He says that all American plants like peat soil best, and, of course, one remembers the time when it was considered useless to grow the shrubs in any other kind of ground. Rhododendrons, the most important of them all, as well as other of the more vigorous habited plants, succeed in almost any soil that does not contain lime. In many sandy loams they grow with as much vigour and luxuriance as in peat—in fact, almost any soil from lime and chalk may be rendered suitable for them by a liberal admixture of leaf-mould or any fibrous material, such as the parings of pasture land. When the soil is poor, cow-dung in a thoroughly decayed state forms one of the best manures for these plants. Here then you have an answer to your question in respect to soil.—V. C.

— Some persons have an idea that peat-soil of some kind is absolutely necessary for Rhododendrons. This is an error; they will grow in loam, if it is mixed with sand and a good dressing of leaf-mould. In the case alluded to here they would probably not succeed for lime and chalk soils are both injurious, and it may be fatal to them. I should hesitate to plant them on the limestone. There is no doubt that good fibrous peat is the best soil for Rhododendrons, and it might be necessary to plant them in peat and leaf-mould in this case. They have such masses of fibrous roots that it is safe to plant them almost at any time. The best periods, if there is a choice, is autumn and spring.—J. D. E.

3993.—Tuberous Begonias.—It will be needless to put out the Begonia in beds if they have been hitherto grown in heat or in the shade without hardening them thoroughly in a cold frame or at the base of a south wall, so that the leaves may be made quite hard to endure the force of the sun during the hottest part of the day. It is by planting Begonias that are not properly prepared that so many persons fail in their culture as bedding-plants. When the leaves and stems are developed in either heat or shade they are rendered so soft and sappy that the least blast of sun upon them scalds the leaves and checks the growth. If no other convenience exists beyond a window for raising the plants, directly two or three leaves appear in April the plants should be stood full in the sun



Fig. 2.—Dovaston's Yew (*Taxus baccata Dovastoni*). (See page 233.)

and out-of-doors free from frost. Before planting, thoroughly dig over the ground, adding a small quantity of horse-manure if the soil is poor. Soak the soil in the pots well before planting, and cover the soil about the plants in the beds with some low-growing plant, such as *Sedum glaucum* or *S. Lydium*, *Herniaria glabra*, or *Veronica repens*. The advantage of this covering is manifold. The soil is hidden, a good contrast to the flowers above is provided, and the soil is kept moist about the roots of the Begonia, in addition to preventing the soil

being splashed on to the Begonis blooms by heavy rains. Abundance of water should be given to the plants during dry weather, as they are moisture-loving subjects.—S. P.

The Begonias will do very well planted out-of-doors in good soil. The best growers dig the ground deeply or trench it up to the depth of about 18 inches, and during the process they work in a liberal dressing of decayed manure. During the hot dry weather we are experiencing, it will be necessary to water the beds before planting, and to water them well

pot in any frost-proof place, such as a kitchen cupboard or cellar, placing some Cocoa-nut-fibre among them.—B. C. R.

Plant in beds any time now, and lift the tubers before frost injures them in autumn, and pack close together in boxes of sandy soil, and keep cool and dry during winter. Must not be exposed to frost, but in other respects will do kept quite cool.—E. H.

CHRYSANTEMUMS.

CHRYSANTEMUM OUTTINGS.

In the case of new or scarce varieties very often a great difficulty is experienced in obtaining a sufficient stock of outtings. Some are so shy of throwing up shoots during the dull days of winter that any means taken at any other time to facilitate the production of outtings is time well spent. Instead of throwings way side shoots that are removed constantly from the plant during the summer, or suckers from the base—many plants throw these up freely during June—insert them singly in small pots in sandy soil, place them in a cold frame, keep close and shaded till rooted, then give abundance of air to induce them to grow stocky. As soon as the pots are full of roots shift the plants into 4-inch or 5-inch pots, using moderately rich soil, pressing it down hard, and short, stocky growth, so desirable for producing good outtings, will be made. Stand the plants out-of-doors in an open position, allowing one stem only to extend. This will attain a height of from 1 foot to 4 feet, according to the variety, and will produce one bloom. Such plants are useful for decoration on the side stages of the conservatory or elsewhere. Cut them down rather early after blooming, and they will be certain to produce good suckers. I find that they always throw up more freely when grown in small pots in the manner described than when grown in the orthodox way, for affording exhibition blooms, as no doubt the constant removal of the suckers during the summer treatment weakens the plants for the after growth of outtings. This does not occur when grown as above indicated, as the primary object is not the production of large flowers, but sturdy shoots for propagation. This is a system I can highly recommend. E. M.

SEASONABLE CULTURAL NOTES.

PLANTS intended for the production of large blooms are now making rapid progress since forming the additional shoots consequent upon making their first break. Restrict the number of branches absolutely to three where the finest blooms are required, removing all side growths as fast as they form at the nodes, thus concentrating all the energy of the plant into the selected shoots. Many of the plants, especially those known as the Queen type, have shown a disposition to premature bud formation, which is difficult to account for, except, perhaps, the hot weather experienced for the last two months has hastened the plants unduly. The only remedy I know is to pinch out all buds as fast as they appear, inducing the plants to make fresh and clean growth. When once a fresh start is made, as it were, after a continuance of bloom-bud formation, seldom do the plants show a disposition to return to that state afterwards. No time should be lost now in placing the plants in their summer quarters, so as to give the newly-made growth the full benefit of light and air, so that they may mature their growth, as it progresses. So much depends upon the state of the shoots as regards their being ripe, or what is perhaps a better term to employ—maturation. All the difference possible exists between the blooms produced from plants that are of mature growth and those that are otherwise. It is not possible to obtain blooms, especially in the incurved section from plants that are of immature growth that contain all the essentials that go towards making a bloom perfect—viz, size, depth, solidity, and richness of colouring. Plants that are soft in the texture of their wood cannot give blooms remarkable for depth and solidity. They may be large in diameter, but they will be devoid of that deep and solid character which is pleasing to cultivators of the incurved section. As it is possible for all with the necessary conveniences to have blooms of the character indicated, I would impress upon beginners the absolute necessity of attending to the details as advised of affording the plants all

the available space to effect the object. I prefer to spread out the three shoots in such a manner that the leaves of one does not envelop those of its neighbour. By temporarily fastening two upright stakes to the cross rails or wires, which support the plants in their summer position, the shoots can be readily fastened to these stakes, and will then have all the light and air necessary. The third shoot is made fast to the one stake in the pot, the remaining two are looped to the centre stake in the autumn when the plants are removed to their flowering quarters. Plants upon wallaces making most satisfactory progress where they have been regularly supplied with moisture at the roots, and an occasional wetting of the foliage in the evening after a hot day. With the exception of a slight attack at the present time of black fly in the points of the shoots, the plants are quite free from insect pests. As the shoots multiply they must be attended to, over-crowding of them means a soft growth, and this results in small blooms, as well as rendering them more liable to injury from frost. Space ought to be allowed for the full development of each shoot, cutting away all surplus growth. E. M.

THE ORANGE AND CITRUS FAMILY.

THESE are not apparently nearly so much grown now as they used to be for large plant houses and conservatories. The time was when they were frequently to be met with in gardens both large and small. Palms of large growth and Tree Ferns also must be credited with elbowing these plants out of their accustomed places. These latter are of much nobler growth, it is true, as far as growth goes, but when the Oranges, Lemons, and others of the tribe are bearing good crops of their luscious-looking, deep-golden or pale-yellow fruits, they are worthy rivals to even these other princes of the vegetable kingdom. Oranges and other fruits of the same class have, I know, in some instances—in others in all probability—become unpopular through the plants for some reason or other failing to bear good crops of fruit. This may be caused through the plants having remained far too long without any attention being given them at the roots. They do not, it is true, require repotting or retubing so often as many plants do, but attention should be given every year to



Fig. 3.—The short-leaved Yew (*Taxus baccata adpressa*). (See page 233.)

after, besides mulching the surface of the ground under the plants with decayed manure to prevent evaporation. After they have bloomed and the stems are decayed, dig up the tubers, dry them a little and keep them in dry sand where frost cannot reach them in winter.—J. D. E.

You may put out the Begonias at once, and the quicker they are in position the better. This flower is getting more popular each year for bedding, and the reason is not far to seek. They require a rich, well-manured, but light soil, and in dry weather give copious waterings, as the Begonia likes moisture, whilst a top-dressing of Cocoa-nut-fibre refuse is also an advantage. They revel in moisture, but will succeed in the open, as shown by the splendid displays in gardens. But when under glass partial shade, or light screen from the sun is needful. Always, however, when in the open and the soil is dry, maintain the soil in moderately moist condition. The best plants can be lifted with good balls of soil before frosts have touched them, and potted. They will bloom under glass for some time. The winter treatment of the Begonia is, as soon as frost has set down the stems, to lift the tubers, and if named, take care to attach a label to each variety, and when thoroughly dry, store them away in shallow boxes, covering them with Cocoa-nut-fibre refuse. Place under a greenhouse stage, or in some dry corner away from drip from plants. Examine the tubers every now and then, and if going at all mouldy dust with sulphur. In spring, when growth is commencing, they may be repotted, shifted as required, and kept in a warm growing temperature. Before planting out harden off, and then a good display of flowers may be anticipated.—C. T.

Harden the plants off well, and plant them out as soon as possible in a bed of mellow soil, made rich by the addition of very old manure, leaf-mould, or spent Hops. They must be well watered until thoroughly established, and if the weather continues as at present it would be as well to shade them during the hottest part of the day—at least for a time. As soon as the first slight frost in autumn has just touched the top, lift the roots with some earth round each, lay them out in a dry shed or box for a fortnight or so, then carefully rub off all the soil, and store the tubers in a box or large



Fig. 4.—The Irish Yew (*Taxus baccata hibernica*). (See page 234.)

top-dressing the plants with good loam and some fine lime-rubble; whilst in the summer, if there is a crop of fruit which requires extra assistance, the plants may be mulched with cow-manure. When it is seen that a change of soil would be beneficial, it should be done thoroughly. This work, where necessary, might be done at once, for none of this family take much of a rest, particularly where the trees are bearing fruit in their various stages of development, some ripening, others just grown, and others quite small. The

greatest care should be taken at such times with the roots; they should be treated as carefully as those of orchard-house trees when these are reported, merely removing the soil around the sides by pricking it out, saving the roots as much as possible. The very best loam obtainable should be given them, adding thereto some fine lime-rubble and road-scrapings, if found necessary, so in the case of rather close loam.

FIRM ROTTING should be insisted upon. The common enemy of this class of plants is the scale, one kind of which seems almost peculiar to them. A thorough cleaning should be given the plants where the scale is present; if there are not many the advice holds good all the same as if the plants are badly infested. Labour spent in clearing off the few is a decided gain. Any ordinary, but well-proven, insecticide, will answer for this purpose, taking care not to injure the fruit where there are any. The dessert kinds are well worth growing for fruiting as small plants. In one place where I once served the Orange marmalade was made from home-grown produce, whilst the Lemons frequently came in very useful when foreign-grown ones were scarce or the stock ran out. These were very fine old plants growing in square wooden tubs and bearing heavy crops of fruit, although they were actually stood out-of-doors in the summer, and wintered in a greenhouse heated by the old-fashioned flues. I have noted that the florists cannot always find a supply of Orange blossom so easily as they need to do. I have been asked several times where it could be obtained, old sources having run out. There may be in time a return to older tastes again, Oranges, &c., coming once more to the fore and finding favour. I hope this may be so, for finely-grown plants of these are splendid objects for terraces, infinitely better than many of the more weedy plants so frequently used. It takes many years, I know, to work up a good stock of large plants, but methinks it would pay to do so as a change to the present order of things. What is wanted in the case of these fruits is more careful attention. H.

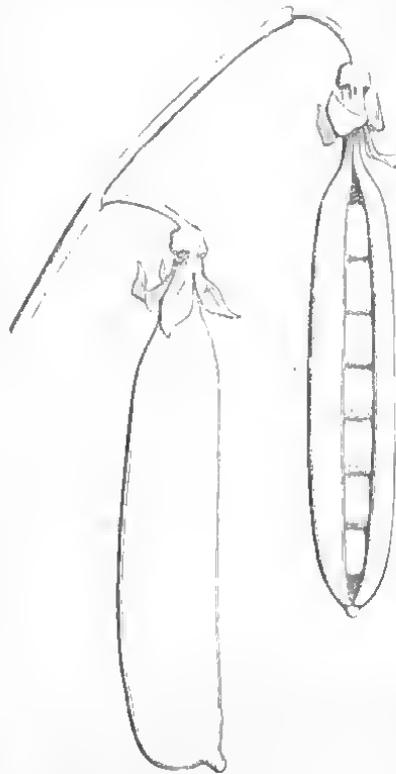
THE KITCHEN GARDEN.

SUMMER VEGETABLES.

FRESH vegetables that we rightly set so much store by are not always so plentiful as desirable, there being but a limited number of species or varieties that withstand either excessive heat and drought, or the other extreme. In any case it behoves us to prepare for the worst, and then whatever comes there will be the comforting reflection that we at least have done our duty. As it happens, the little extra trouble taken in preparing ground for crops known to be most serviceable during a hot or dry season will not in any case be altogether thrown away, good culture being with few exceptions invariably attended with excellent results.

VEGETABLE MARROWS are undoubtedly the most serviceable hot-weather crops that can be named, and there are times when little else in the way of fresh green food is to be seen in Covent Garden and other markets. They are sent in huge wagon loads, and sell readily at remunerative prices. Added to this, they are quite the sort of vegetable that one likes during hot weather, and at all times are appreciated by most people. The weatherier classes perhaps are not particularly fond of Marrows, but they would like them better and order them oftener if they were cut in a small state or before the seeds develop and cooked whole. It is when thus treated that they are rightly termed Vegetable Marrow. If my advice, therefore, is taken, they will be more extensively grown than usual this season. There is no necessity for, nor wisdom in, making elaborate preparations for this crop, those huge heaps of decaying matter with a little soil on the top, which are too often provided for Marrows, invariably promoting a rank, unprofitable growth. They may perhaps be needed in very cold districts, but even of this I have my doubts, as wherever I have practised gardening by far the best crops have been had from plants growing under apparently less favourable conditions. If sheltered corners in a yard or some kind of a little space that can be well spread for Marrows, then, instead of using so much rich manure and do-

caying vegetable matter, be very sparing of the former and substitute more common garden soil, or say to the extent of at least one half of the bulk. Where they really exceed the best in the open garden with a row of Runner Beans or rows of Peas on the north side. Open a trench 4 feet in width and 6 inches in depth, throwing the soil evenly on each side. Then wheel in a layer about 1 foot in depth of only partially decayed stable-manure, or a mixture of this and leave, returning the greater portion of the soil thrown on to the top of this, and no further preparation is needed. Sow the seed at once where the plants are to grow in patches 3 feet apart, and by the time the seedlings come up no protection will be needed. Not more than one plant should be left at each station. This is the market grower's plan, but most private gardeners can afford time and space to raise the requisite number of plants under glass. Sow during the first week in May singly in 3 inch pots, and harden and plant out before the seedlings become stunted. Too often they are raised three weeks too early, and rather than put out starvelings I would prefer to raise a fresh batch. Plant in a single row through the



Pen "No Plus Ultra."

middle of the raised bed, disposing the plants 3 foot apart, and roughly protect from frosts and winds. In dry weather it may be necessary to water occasionally during the first month, after which they may safely be left to take care of themselves, the plants bearing profusely in hot, dry weather. Never pinch or prune, but let the plants grow, spread, and fruit naturally.

SPINACH usually fails in hot, dry weather, but if seed is sown on a cool north border previously well prepared by manuring and digging the crops hold out surprisingly well. I prefer the Victoria or Monstrous Virolay for summer and early autumn crops, this standing much longer than the common round-seeded or summer Spinach. About three sowings at fortnightly intervals should be made, commencing towards the end of May. The drills ought to be drawn 1 foot apart and be moistened if at all dry prior to sowing the seed. Thin sowing should be practised and thinning out where needed early reported to, crowded Spinach being the first to succumb to seed. A fairly good substitute for the one Spinach is found in the New Zealand Spinach, though it is my belief the greater

portion of what is annually grown in this country is never used. This species, being of a succulent nature and somewhat resembling the common Ice plant, actually revels in a hot and dry position, though it ought to have a good thickness of decaying manure under it. A dozen plants will yield abundance or a sufficiency of young tops or shoots, these being what are boiled for most establishments, and they should be planted or sown on a south border or other sunny position fully 3 feet apart each way. The requisite number of plants may yet be raised under glass singly in 2 1/2-inch pots, or the seed be sown in the spots prepared in the open. The plants require no watering after they are once well established, but should be protected from frosts when first put out and again in the autumn.

TOMATOES are essentially hot-weather vegetables or salad as preferred, and for these the weather cannot well be too hot and dry. Should we experience a hot season the demand for Tomatoes will exceed anything that has previously taken place in that way, and both private and market growers will do well to plant extensively. Unfortunately, open-air crops are most precarious, but then they can be cultivated where nothing else will or is often grown, and not unfrequently heavy crops have been taken from plants growing in the open borders, these being supported by strong stakes. The sites I can most strongly recommend are sunny garden and house walls, those that screen the plants from rainfall being much the best. If the foliage can be kept fairly dry it is not often that the disease spoils the crops. Give each plant the benefit of a good spit of fresh loam and half that quantity of manure, and they will then grow healthily and strongly, producing heavy crops without much further trouble beyond removing all superfluous side-shoots, and securing the stems to the fence, walls, or stakes, as the case may be. Open Air and Earliest of All are among the first to give ripe fruit, while Conference crops the most surely, such sorts as Dodham Favourite, A 1, and Perfection also doing well.

RUNNER BEANS, though moisture-loving subjects, will yet do remarkably well in a hot season, provided they always receive abundance of water at the roots. The rows of these, then, ought to be located conveniently near a good water supply, and a thorough soaking should be given at least once a week during a dry season. Dribblers are simply thrown away on them, and if the plants fail to set great clusters of pods, this is proof positive they are too dry at the roots. They like plenty of manure, too, and in addition to digging in a good dressing of solid manure, liquid manure ought also to be given freely. Allowing them to mature a quantity of seed has a very weakening effect, and the pods should be kept closely gathered whether wanted for home use or not. Kidney Beans are never continuous-bearing for any great length of time, but they can be had throughout a hot season by sowing at short intervals, the ridges between Celery trenches answering well for them.

PEAS are not happy during very hot and dry weather, but even these succeed surprisingly well on spaces 6 feet or rather less in width between Celery trenches. They also do well if treated as liberally at the roots as runner Beans. No Plus Ultra (see cut) is one of the best hot-weather varieties that can be tried. Cabbages are usually too much over-run by caterpillars to be of any real service, and the same remark applies to the earlier varieties of Cauliflowers; but the Autumn Giant can be had clean and good in August, provided the plants are kept well supplied with moisture and manure at the roots. I.

3990.—Early Potatoes.—Let the tubers remain in the ground until the haulm dies completely away, then lift the crop, choosing dry weather, if possible, and let the tubers lie out in the sun for two or three days until they become slightly green; then stow them in a dry place, laying them out thinly, and look them over occasionally to remove any diseased ones. The great thing is to get them thoroughly ripened or matured.—B. C. R.

3991.—Medium-sized tubers from the most prolific roots for planting next year if you wish to have a good crop. Dry them by exposure for some time in an open shed, not exposed

to bot sunshine, and then pack them away in shallow boxes in some building where the frost cannot reach them. If this cannot be done at once cover with straw and earth till winter. But before the eyes move lay them out thinly in a light position to develop the crown eye. One stem is enough for early Potatoes.—E. H.

— Do not dig up the Potatoes until the tops are quite dead. Choose a dry day then for taking up the tubers, lifting them carefully without bruising the skin. Spread them thinly out in a cool, airy shed for two or three weeks, and afterwards store them in a cellar or dry room in a heap, box, or barrel. Examine them occasionally during the winter to make sure that none are decaying; if so, remove such to prevent their contaminating the remainder. Rub off any sprouts that may grow until the early part of February, when the tubers should be set on end in layers in shallow boxes, and be placed in a light and cool room free from frost to induce the sprouts to grow strong. These latter should be about $\frac{1}{2}$ inch long at planting time.—S. P.

4001.—Unsatisfactory Cucumbers.—The plants have got "warty roots," and for this affection there is no positive cure, so far as I am aware. You may try watering them with soot and lime-water, however. The best plan will be to pull them all out, and plant another batch in entirely fresh soil. If only a little of the old soil is left the disease will reappear.—B. C. R.

— Want of moisture, stimulative food, and overcropping are the main causes of the fruit turning yellow at the points. When Cucumbers have been in bearing some time the soil becomes poor, and the plants are in consequence exhausted of their energies to go on producing fruit abundantly. They need invigorating to induce them to make new growth, and consequently fresh fruit. Thin out the old and worn-out shoots and decayed leaves. Cover the surface-soil 2 inches thick with a compost of partly-decayed horse-dung and fibrous loam in equal parts. If neither of these can be obtained give the surface-soil a sprinkling of Clay's Fertiliser or dissolved bones, and cover it with road-scrappings. Afterwards give a thorough soaking of tepid water—certainly not less than 90 degs. Syringe the foliage thoroughly early in the morning and again in the afternoon about four p.m. Supply abundance of water to the roots when required, but on no account give sufficient to create a stagnation about the roots, or the fruit will again turn yellow. The best plan to ascertain if water is needed is to dig down in the bottom of the bed to see what state the soil is in. Too much moisture is almost as bad as too little.—S. P.

— The Cucumbers are affected by a very troublesome disease, and the only remedy is to clear out everything, and start again with young plants from a fresh source.—E. H.

4006.—Tomatoes not setting fruit.—No one can say that the present season has been unfavourable for the setting of the fruit of Tomatoes, for we never had a more favourable time so early in the season. That being so, it is quite clear that your treatment is wrong. I should say the soil they are planted in is too loose, and that they have had too much water. Tread or ram the soil firm about the roots, and give them less water until some fruit is set. Beginners in Tomato culture should grow their plants on in 7-inch pots until the first bunch of flowers have set their fruit, and then plant them out.—J. C. C.

— As the plants are healthy and strong they ought to do better; but you must consider that this is exceptional weather, and I think a light overhead syringing once, or even twice, daily on very hot days will help you considerably. Also dissolve a very little sulphate of ammonia in the water given to the roots only occasionally.—B. C. R.

3951.—Cardoons.—It is late now to sow seeds of Cardoons; it should be sown from the middle to the end of April. A good plan is to sow a few seeds in the centre of large 60-sized flower-pots. One plant will be enough; remove the others. When they are large enough for planting they must be set out in Celery trenches; but there ought to be a space of about 2 feet between the plants, and 5 feet at least between the rows. The plants need plentiful supplies of water in dry weather, and by September and October they are ready for earthing up. Tie the leaves round with haybands to keep them together, and earth must also be applied over them. The operation of earthing up should be done on a dry

day. The French Cardoon is not so good to grow as the spineless-leaved Spanish variety.—J. D. E.

3997.—Climbing Peas.—There are many acres of Peas grown in this neighbourhood, but none of them have sticks put to them. The farmers take a hook and switch the tops off, because they say it does not pay to stick them. They only get two gatherings from them, as the tops being cut off stops the formation of pods near the top of the plant. For garden purposes it is better to stick the Peas, as they certainly do better, larger crops are produced, and in succession.—J. D. E.

— Doubtless Peas may be grown without sticks by pinching in and the points of the shoots bent. If tall Peas were operated on in this way the crop would be very light.—E. H.

— Do not by any means prune the Peas in the vain hope that greater produce will be the result. If extra large pods are required, the pods may be pinched out of the haulm to prevent other pods forming, but this is at the expense of a full crop.—S. P.

INDOOR PLANTS.

TINNEA ÆTHIOPICA.

This is the name of a plant which "T. Marchant" sends me a few sprigs, saying—"They are the last of a plant that has been flowering since the month of January, and filling the house with the fragrance of Violets." This plant is one of those collected in darkest Africa by the celebrated Mlle. Tinne, whose father was engaged in some business in Liverpool, in which place it was raised, and it was in the winter of 1866 that I first saw the plant flowering beautifully in Mr. B. S. Williams' nursery in Upper Holloway, and through which firm it was distributed to the public, and I am very vexed that it appears to have fallen out of repute so much, for it is now a long time since I saw the plant. This plant was gathered by two celebrated travellers, i.e., by Captain Grant, during his journey in company with Captain Speke, and by the celebrated Doctor, but now Sir John Kirk, then attached to the Livingstone Zambesi Expedition. And these gentlemen, I think, had become possessed of the plant before Mlle. Tinne found it. These being sent to Vienna were worked up by Dr. Kotchy and at once named, so that is how the plant became known by the name of Tinnea. It is a plant belonging to the order Labiate, which would not convey an idea of its lasting so long in flower. It is not a gay plant, but its lovely odour makes amends for any lack of brilliancy in the colours, and it may be grown to any size one likes; either in the shape of large bushes, 6 feet in height, or in small twiggly bushes of about one foot; the larger the plant can be grown, of course, all the more imposing does it become, and the wider is its delicious perfume diffused. The plant requires the warmth of the stove and plenty of moisture to maintain its leaves, which are small and entire, of a deep bright-green on the upper side, paler below. The flowers are borne upon short spikes, usually in pairs, and in great abundance. The flower protrudes from a large green calyx, and is of an intense deep maroon-purple, yielding a powerful odour of Violets, which makes it doubly welcome, flowering in the dull days of winter and the early spring. It is a plant that does not require a large pot, but the one it has should be well drained, and the soil should be composed of loam, peat, and leaf-mould, made sandy, and the plant should stand in an ordinary stove, with a temperature which does not fall below 60 degs. at any time in the year. There should be a nice moist atmosphere maintained during the growing season, and at no time must it be allowed to suffer for want of water. Treated in this manner Tinnea ethiopica will yield the household a delicious perfume of Violets for a long time, and cutting it does not mutilate it, if the cutting is done with reason. J. J.

3994.—Plumbago capensis.—I put cuttings of this creeper, about six, in a 5-inch pot, in a mixture of loam, leaf-mould, and rotted manure; when rooted each of these is planted in a separate pot of the same size, and by the following year it can be trained to a 3 foot stick, and about the middle of June is in flower. To make a handsome plant for the conservatory set a box 2 feet long, 1 foot deep, and 1 foot wide, with holes for drainage bored in the

bottom. Put in first about 2 inches of crocks, then a layer of turfs and fill up with the same mixture as mentioned above; put a single plant in the centre and on each side one of the varieties of Ribbon Fern. The Plumbago may now be trained on a wall or trellis, and when two years old will have grown some 8 feet to 10 feet and be covered with bloom. Attention to watering is the main thing with Plumbago. It should never be allowed to want moisture.—A. G. BUTLER.

— This is really a very vigorous growing plant, and would not be likely to do much good in a 7-inch flower-pot; in fact, the best results are obtained by planting it out in a border of good soil, and allow it to take the character of a climbing plant, growing freely and flowering profusely as it always does. I should replot the plant into a 9-inch or 10-inch flower-pot, using good yellow loam, decayed manure, leaf-mould, and sand. A little fibrous peat is useful to keep the compost open, and the roots run freely into it. It is strictly a greenhouse plant.—J. D. E.

— The plant will flower presently, no doubt. You may sprinkle a very little Clay's fertiliser on the surface of the soil in the pot, pricking it lightly in, and then giving a good watering; but this is a very powerful manure for such delicate-rooted subjects. I should prefer to water the plant with weak soot-water now and then, and give it also a weak solution of sulphate of ammonia or urtrate of soda every other week. Do not pinch the shoots any more this season. A good sandy loam suits this plant better than anything else.—B. C. R.

— The Plumbago succeeds well planted out, and will thrive in either a greenhouse or conservatory. But the finest results I have seen with this plant have been when it is planted out in a border in quite a warm conservatory, the branches being smothered with the lovely pale-blue flowers. There is a variety named alba which has, as its name suggests, white flowers, borne with the same features in the type. It would be better to plant out the Plumbago in the house, and prepare a well-drained soil, and for pots it is also useful. I used to have a lot in 8-inch pots, the soil kept moderately dry in winter. The growth in spring should be cut back, and the plants repotted. Pinch the shoots when they have grown about 3 inches in length to promote a bushy habit. It is very easy to strike cuttings in the spring, and treat them similarly to those of the Fuchsia. A very pretty effect is gained by associating the type and the white-flowered variety.—C. T.

— The pot, a 7-inch one, is small for a 2 foot plant; this would account for the smallness of its leaves. If a larger pot is given a greater crop of flowers will be obtained after a while, but not so soon as though it were allowed to stay in the same pot it is now growing in. If you have space for a large plant I should advise that it be repotted into one 10 inches in diameter, employing a compost of three parts loam, one of peat, and one of leaf soil, with sufficient sharp silver sand to keep the whole porous. Well drain the pot and allow a full 1½ inch space at the top for water, as this Plumbago enjoys abundance of water at the roots. When the pot is full of roots occasional doses of weak liquid-manure will be an advantage. Well syringe the foliage every evening as a preventive of red-spider, to which this plant is liable. If the plant remains in the same pot half a teaspoonful of Clay's Fertiliser sprinkled over the surface once a fortnight and watered in will assist the growth. Do not stop the shoots in any way. Allow them to grow away at will, as it is from the ends of the shoots that the bloom spikes appear.—S. P.

4000.—Zonal Pslargoniums.—The largest plants should be potted in 6-inch pots, the smaller in 4½-inch, in a compost of three parts fibry loam, one of leaf soil, and one quart of bone-meal to every bushel of the compost. Pot the plants firmly to induce short-jointed growth that will mature as it progresses. From the best prepared plants of this character the finest blooms will be had. After potting, the plants should occupy a cold frame until the roots are running freely in the new soil, when a position fully exposed to the sun will be the most suitable. A thick bed of coal ashes provides a cool base for the plants to stand upon during the hot summer days. Continue to pinch out the point of each

shoot when 3 inches of new growth is made to induce other shoots to push from below, so that stocky as well as bushy plants will be provided, as these, of course, give the greatest quantity of bloom. When the pots are full of roots give the plants occasional soakings of liquid-manure, made from cow or sheep-dung, adding a little acet. When the buds are visible a quarter of a teaspoonful of Standen's manure spread over the surface of each plant, washing it with clear water, will stimulate the growth and assist in the development of the flower-trusses. Six weeks before the plants are required to be in bloom the last stopping of the shoots should be made. The following dozen are excellent sorts: Lord Rosebery (brilliant crimson), Lord Salisbury (rich madder shade of scarlet, tinted magenta), Golden Veuvius (orange-scarlet), Marquis of Dufferin (crimson magenta), Lady Reed (white, scarlet centre), Mrs. Robt. Cannell (deep salmon), Olivia (a pleasing shade of salmon), Mrs. David Saunders (pink), Swanley Single White (pearl white), Sir Fensalval (white, large truss), Amphion (deep-pink), Mrs. Strutt (rose-pink).—S. P.

I grow a span-roof house full of these plants for winter flowering. The cuttings are put in, one in the centre of a small sixty-sized flower-pot, about the middle of the month of April. The cuttings are taken from the plants that flowered the previous winter, and as they are generally out-of-doors by that time, the cuttings are hardy grown and do very well in cold frames; they mostly all form roots. When well established repot them into what are termed small forty-eights; these are 4 inches diameter inside measure; after a time they are planted in 8-inch and 7-inch flower-pots, and in these they produce their flowers. The Zonal Pelargonium does not require very rich compost. Pot them in five parts loam, one of leaf-mould, one of decayed manure, and a little sand. The plants are grown out-of-doors from May to the end of September. A few good varieties are as follows. Crimson and scarlet shades: Lord Salisbury, Lord Rosebery, Miller's Favourite, Duke of Fife, Swanley Gem, Brilliant, Edith Pearson, and Mr. H. Cannell. Pink and rose tints: Edith Miller, Constance, Mrs. Struth, Mrs. Wildamith, Edith George, and Mrs. David Saunders. Of white varieties: Swanley Single White, Queen of the Belgians, and Queen of the Whites Improved. Salmon tinted: Lady R. Churchill, Beauty of Kent, Opal, Mrs. Norman, Lady Rosebery, and Perdita.—J. D. E.

If in stove-pots, as they appear pot the cuttings off singly at once, and keep them in a cool, shady house or frame until rooted and growing. As soon as possible shift them into 5½-inch or 8-inch pots, and when established stand on saucers in the open air, choosing an open and sunny spot. Give just enough water to keep the foliage fresh and the plants growing slowly, and pick out all flower-buds until the middle or end of September. House early in October, and in a light, warm house the plants (if of suitable varieties) flower freely during the greater part of the winter.—B. C. R.

A note upon Anemones, &c.—Anemones or Windflowers are of many kinds. The frail little Wood Anemone that seeks shelter in our English woods is represented in gardens by many exquisite varieties, the sky-blue Robinsoniana, a delightful shade of colour, and the double white being amongst the more charming, especially if grouped at the foot of a tree. The Blue Winter Windflower, (*A. blanda*), the Apollonia Windflower, and the Hepaticas, *H. angulosa* are good garden flowers. *A. blanda* blooms, quite early in the year making rich masses of leafage, against which the blue flowers are in fine contrast. All require a light soil and to be kept free from damp. The novice in gardening would first choose, possibly, the Hepaticas, glorious old English flowers that seem to have an enduring interest. They are amongst the first flowers of the year. The Hepaticas are quite hardy, but often get killed in very damp soil, conditions which do not in the slightest agree with their somewhat fastidious constitutions. Roots are not set deeply down, but a well-prepared soil is requisite to gain the best results. The reason why Hepaticas fail is in many cases due to over-watering and disturbance at the root, which is sure to kill them, as no plant perhaps resents interference

so much as this species of Anemone. When planted late then remain until they have grown into broad, handsome clumps, which, if thought necessary, may be divided. An open sunny bank, border, bed, or conspicuous positions on the rockery suit well the Hepaticas, of which there are many varieties, as the single blue, red, and white, with double forms of each kind. *A. angulosa*, called the Great Hepatica from the size of its sky-blue flowers, must not be overlooked. The beautiful Snowdrop Windflower (*A. sylvestris*), the Pasque-flower (*A. pulsatilla*), and the lovely Windflowers of Japan. *A. japonica* should have a place in the amateur's garden. *A. japonica* and its white variety *alba*, or Honorine Jobert, are amongst the finest of hardy perennials, bold and handsome in the border, and of value for cutting. They enjoy a deep, moist soil, and an occasional mulching to established beds will do no harm. A thriving clump of the white variety when in full flower is a splendid picture, especially if backed with green foliage, to bring into full relief the purity of the blossom. It is best, to increase the stock, to divide the roots, and every particle will grow. The Scarlet Windflower (*A. fulgens*) and the beautiful Poppy Anemones may also find a place in the beginner's garden. The Poppy Anemone gives one a gay variety of colours, and is easily raised from seed sown in the month of April or June on good, rich, well-prepared soil.—C. T.

FERNS.

3944.—**Ferns and out-flowers.**—Most of the Pteris family last better in water than the Adiantum, Pteris cretica and Pteris tremula being two of the best. But they do not give such a good effect as Maiden-hair, which is unique in this respect. Ferns last better with out-flowers when they have been placed in a bath of water, frond and all, for a few hours, so as to be thoroughly wet all through, the fronds being full grown, and out from a well-hardened plant. Some of our English Ferns are very useful with out-flowers, Asplenium Adiantum-algum (the Devonshire black-stemmed Fern) being very elegant, and small enough for specimen glasses. Small fronds of the common Athyrium too, will often last a long time, if carefully cut; but they will not take up water if the stems should be torn and bruised by the hand. Asparagus plumosus stands well in water, and is the most graceful substitute for Maiden-hair Fern, and the leaves of the Common Yellow Fumitory are so similar that they are sometimes mistaken for the Adiantum Capillare. This Fumitory should be grown for its foliage.—I. L. R.

BIRDS AND INSECT PESTS.

SELDOM have small birds appeared more in the light of friends of gardeners than during the exceptional drought that has prevailed for the past three months, for a protracted spell of warm, dry weather favoured the early advent of swarms of grubs, caterpillars, and fly of various sorts and kinds; they live on the leaves or tender shoots of fruit-trees, flowers, etc., and unless small birds had come to the rescue I fear that many gardens would have been well-nigh defoliated by this time; but, owing to the exceptionally dry season and scarcity of other food, many kinds of small birds have lived almost exclusively on grubs, caterpillars, green and black-fly, etc. For some weeks past I have watched the common house sparrows lately hanging on to the shoots of wall fruit-trees, busily picking off the fly from the under side of the foliage, and different kinds of finches have been equally active, and I have tried caged birds by putting in shoots covered with fly, and they have set to work and cleared them off rapidly; in fact, my impression is that the amount of good done by birds—that are by many looked on as the natural enemies of gardeners—far outweighs any mischief they do at other periods of the year, and I think that if the destruction of small birds were carried too far we should be far greater sufferers from the attacks of insects and other pests than we are now. Such exceptional seasons as the present upset many of our calculations, but it is gratifying to note that birds are doing their best to mitigate the effects of the drought by persistently attacking the worst enemies we have to contend with.

A FEW GENERAL NOTES.

GREENFLY.—In a small house this can be kept well under limits by using a dry paint-brush, such as can be had for 3d. or 4d.; hold the pot in left hand on its side, brush upwards firmly but steadily. Let the aphids fall on the ground; they are then harmless. Last winter I kept 40 Pelargoniums free from fly by brushing once a week. It took about 30 minutes to do. Amateurs so often fail when syringing, either over or underdoing it. The dry brushing is simpler.

ANTS.—It is a mistake, with all due deference to many writers, to suppose that ants are only after insect life, and that they will not attack plants. Recently I had a Tritonia bloom-stalk eaten through by small ants. They simply cut a deep, wide incision across the stalk, so as to kill the bloom. Tritonias are known to stupefy bees in ordinary seasons, and perhaps our long period of hot weather had caused an unusual amount of saccharine matter to develop, thus attracting the ants.

TOMATOES can be grown perfectly well under Vines if placed against the glass at bottom. I always grow enough for home use in boxes in this way; I also grow three or four Cucumbers the same way, and last season I kept the table supplied three times a week for three months. Lookle and Telegraph were the kinds used.

TROPEOLUM SPECIOSUM.—An experience of over twenty years has told me that this, one of the most beautiful and effective of its class, is also one of the most uncertain things to grow. If the conditions are suitable it comes up like a weed, running up many feet from the parent. I have grown it in Scotland and Ireland to perfection in a full southern aspect, and not at all moist ground, notwithstanding these facts are supposed to be hostile to its growth. Here, in Jersey, I have tried it under all possible conditions, but without success. It is alive but does not flourish, and everyone else I hear who has tried it in the island has equally failed.

MUSCAT GRAPES ripen and colour perfectly in a cold house, provided they get plenty of daily sun and air, and that the night temperature does not fall below 50 degs. I do this yearly, and so do many others. They must hang until well on in September.

"NOBLE" STRAWBERRY.—I was surprised to see this variety condemned in GARDENING. For house forcing and for earliest outdoor fruit there is none "Noble" grown here than any other kind. It may not have the high flavour of some other varieties, but for size of berry, fine colour, and enormous productiveness, we consider it hard to beat. This year "Noble" ripened in the open, and of April, and I weighed some fruits which exceeded 1 oz. each.

4002.—**Paraffin-oil and water for plants.**—I have seen so much injury done to trees and plants through the use of paraffin for the purpose of destroying insects that I advise you to look for a less destructive remedy. Within a mile of where I write I could show this correspondent some young Peach-trees with scarcely a leaf upon them. The same trees started well in the spring, and had set a good crop of fruit. They were, however, attacked with green-fly, and in an unlucky hour the owner syringed them with paraffin and water to destroy the insects, with the result that he has lost his crop of fruit for this year and probably the next. In the hands of careful people paraffin is a capital insecticide, as when sufficiently diluted it will not injure even the delicate fronds of Ferns. To make it safe the quantity is so small that amateurs cannot believe that there is enough to do any good. Therefore, my advice to them is that they have nothing at all to do with it.—J. C. C.

—Paraffin-oil and water will not mix thoroughly, and this forms a great drawback to its use; otherwise, it is a valuable cleanser. If used at all, water and oil should be kept in a state of agitation, and therefore it would not be suitable for dipping plants in, as the oil of the mixture if quiet for only a short time would float to the top of the water. I have used it occasionally mixed with water at the rate of ½ pint to 4 gallons of water. But if used at all, it is best to mix it with soft-soap, blending the soap and oil together well before adding it to the water. From 1 oz. to 2 oz. of soap to the gallon will improve the mixture as an insecticide.—E. H.

FRUIT.

THINNING FRUITS.

This is a work that will need more than usual care this season—at least, if the blossom has set so regularly in other places as it has done here; yet it is a very pleasant and profitable work, as the fact of having to thin proves that the season has, thus far, at least, been favorable to the early development of the fruit-crop, and our proverbially fickle climate has been for once inclined to conditions so closely bordering on "set fair" that the danger was really getting very imminent that we should suffer from too much fine and cloudless weather. Rain fell a while ago, but in only slight quantities compared with what heavily-laden fruit-trees require, and unless we get much heavier rain the crop will need thinning even more severely, for fruit is so largely composed of water that it needs little argument to prove that anything approaching drought must materially reduce the weight of the crop. Thinning fruit is by no means a new thing; but, as a rule, it is confined to fruit grown under glass or on walls. No one would think of letting their Grapes or Peaches go unthinned, yet little attention is paid to hardy fruits, although my idea is that a good crop of Apples, Pears, or, in fact, any kind of hardy fruit yields more profit than the hot-house grown crop, for it is only what is left after the expenses of production are deducted that can be set down as profit, and we all know that hot-houses are expensive things. Taking hardy fruits in order of merit, I have no hesitation in placing before all others—

THE APPLE.—Look at the enormous and ever increasing demand. Why, with all our improvements in culture and modes of keeping the fruit late we are still dependent on imported fruit quite six months out of the year, for Apples are always in demand, and if the public cannot get home-grown samples they will have the imported ones, and the price that has been paid for months past for boxes and barrels would convince any unprejudiced person that Apples are a profitable crop; but they must be good, and the only way to get them really fine is to thin out the clusters to one, or, at most, two fruits each. Other details of culture must, of course, be of the best, but on the thinning of the crop depends the size of the fruit.

PEARS are fruits very liable to set in clusters, and the value of Pears is more dependent on size than almost any fruit. I do not suggest that it is necessary to rival the Jersey-grown fruit, but there can be no doubt about good large samples selling freely, when small, under-sized fruits are a drug in the market. Kitchen Pears pay as well for severe thinning and high culture as any of the first-class dessert sorts.

PLUMS of good dessert sorts repay thinning well, for in a season like the present, when fruits are set very plentifully, anything in the way of overcropped trees will only produce samples that must be sold at so much per bushel, but extra fine fruits fit for setting up in preserves, and sold at so much each, are the ones for profit or pleasure.

GOOSEBERRIES may be thinned out by picking the green fruits for tarts while quite small, leaving only the best placed fruits to grow on for dessert.

STRAWBERRIES are, as a rule, thinned severely when grown in pots, for as soon as enough is set for a crop all the rest are clipped off. Surely the same attention would be amply repaid with outdoor crops.

MULCHING AND WATERING should be done conjointly with thinning, for as soon as the tree has got only what fruits are expected to come to maturity set out, every effort should be made to swell up these to their fullest extent; therefore, mulch over the roots, and water copiously over the mulching.

J. GROOM, Gosport.

3088.—Peach tree branch withering.—This is usually caused by what gardeners term gumming. An exudation of sap takes place at a certain point in the branch, which gradually hardens, and the branch dies from this point. It does not matter where the tree grows, as the

disruption of the sap vessels takes place anywhere; sometimes on wall trees, and at other times when they are grown in a forcing-house. There is no cure for it, but it can be prevented by keeping the roots of the trees in good soil and near the surface. The leaves of the trees must also be healthy, and free from all kinds of parasites, such as mildew and insect pests.—J. D. E.

— There is nothing very unusual in this, especially in the case of old trees. At the same time it is perplexing to see them do so while other parts of the tree remain perfectly sound and healthy. I have examined many such branches without being able to trace the cause clearly. I am, however, inclined to think that it is the result of an injury while the branch was quite young, such as a bruise by a cuckoo from a hammer, or the undue pressure of a nail, which brought on a kind of canker.—J. C. C.

— If "E. G. W. P." will examine the branch at the base of where the leaves show signs of withering it will be found there is a wound; most likely gum will be oozing out of



Fruiting-branch of Kelsey Prune.

the bark, hence the cause of the leaves withering. There are a variety of reasons for premature decay of a part of a tree. The main one is that the bark has been injured while in a young state, most likely by the ligature supporting this particular branch being made too tight, which prevented the bark expanding regularly, thus causing a wound. Overcropping will account for a withering branch, and so will having the roots too deep in a cold subsoil. The first, though, is the most common cause of Peach-tree branches decaying prematurely. There is no cure for it now that decay has set in.—S. P.

— Peach branches may die from one of several causes. The branch may have received some injury, or it may arise from gumming or canker, or the tree may be in weak health, and the dead branch may be the first indication of the coming break up. It is not usual for the branches of healthy trees to die in the same way as the branches of Apricots die off. If the tree is healthy young branches will soon fill up the space left vacant by the removal of the dead branch. Overcropping ruins a good many Peach-trees.—E. H.

3089.—Blight in Apple-trees.—The "American Blight" is easily destroyed by a mixture of soft-soap and kerosene well rubbed into the affected parts with a

shaving-brush. You should not neglect to prune the tree if you wish to get a good crop of Apples.—A. G. BUTLER.

— The trees are attacked with the "American Blight," which eats its way under the bark, causing wounds, and if not checked will eventually kill the trees. The present is not a good time to cleanse the trees of this pest, but it may be kept in check by well syringing the trees, thoroughly wetting the affected parts with a strong solution of Stott's Killmright. First cut away all useless shoots of the current year's growth, as this will enable the liquid to better act upon the blight. When the leaves have fallen prune the trees carefully, and thoroughly scrub with a hard brush a solution of Fir-tree-oil or pure methylated spirits the parts affected, repeating the operation again in a month. If any of the insects appear the following year touch them with a small brush dipped in Fir-tree-oil, mixed with water as directed on the vessel containing it, as bought from any seedman.—S. P.

— This is certainly the "American Blight." The white fluffy stuff is the protecting material over the insect which does the mischief (Aphis isuligera). It would certainly in time kill the trees if not destroyed. There is no better way to deal with it than to take a small pot of paraffin and apply it just as it is, undiluted, with a brush. The liquid penetrates into all the cracks and crevices, destroying every one of the insects. The pest attacks the branches first, but will in time descend to the roots, where it seriously hampers the growth of the trees.—J. D. E.

— "American Blight" may be got rid of by perseverance if the trees are worth saving. There is no better remedy than soft-soap, made into a strong lather and brushed well into the cracks and crevices where the insects are laid up.—E. H.

THE KELSEY PRUNE.

In reply to "J. R. S.," this is a very fine Plum, largely grown in California. We should be glad to hear from anyone who has grown the Plum in this country as to its hardiness and productiveness.

STRAWBERRIES IN POTS.

With regard to sorts of Strawberries to grow in pots, opinions differ greatly as to which are the best. Almost every grower has his favorites, but there can be no question, I think, as to the great superiority of British Queen, if size and flavour are taken into consideration. Unfortunately, British Queen will not succeed everywhere, and many have a difficulty in growing it, as it requires a good, rich, and moderately light soil, and even then it is apt to be barren and go off. With me it does well, and is the chief kind I cultivate. In cases where the Queen fails or is not satisfactory, I would advise Sir Joseph Paxton to be substituted. This possesses many good qualities, as it has size, firmness, high colour, and excellent flavour. President has long been a favourite with many and is a prodigious cropper, as it flowers abundantly, sets freely, and the fruit swells regularly and colours up well. Sir Charles Napier is valued by market-growers, as it is a robust free growing variety, but though showy and taking to look at, it is not of high quality. Auguste Nicaise has during the last year or two come under notice, and just lately a dish of fruit of it exhibited caused quite a sensation, as each fruit weighed over 2 oz., and it is a fair flavoured kind. The above-mentioned are all second classes, therefore, for first crop forcing it is necessary to have some other sort, the most precocious among those known being Noble, which ripens at least a fortnight before any other I have yet tried in pots. For freedom of growth, setting and cropping, Noble is quite unsurpassed, the fruit being large and very showy, but the flavour is flat, or it would be the most valuable kind in existence. The one I depend chiefly on is Vicomtesse, but it requires good cultivation, and to be satisfactory the plants must be strong. If they are, they send up fine heads of flower and produce large, firm, rich, bright-looking fruit that packs and travels well without being injured or bruised. In forcing Strawberries, however, it is not advisable to have many varieties, but to stick to two or three that are found to suit, as then a mere regular supply can generally be maintained and the trouble entailed in their preparation and management.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of GARDENING, 37, Southampton-street, Covent-garden, London. Letters on business should be sent to the Publishers. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, notes, and notices vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appeared.

4027.—Early Fuchsias for window culture.—Wanted, please, the names of the three earliest-blooming Fuchsias for window culture.—C. N. P.

4028.—White-flowered plants for cutting.—What is the best white-flowered plant for cutting from to come into season just before the Plinks?—C. N. P.

4029.—Blood-manure, &c.—Will someone kindly tell me how to make blood into dry manure with some salts, and how to dissolve blood?—ALBERT GARDNER, Hill.

4030.—Fraxinea ramosa.—Will somebody kindly tell me what treatment is required to grow Fraxinea ramosa (Bridal Wreath), and when is the season for flowering?—ENQUIRER.

4031.—Monthly Rose.—Will someone kindly inform me if the old-fashioned Pink Monthly Rose is suitable for juggling down, or if it flowers better when left to grow naturally?—SERA.

4032.—Cut flowers.—I have got plenty of plants in bloom to cut from just now except red. What can I grow to give scarlet, crimson, and pink shades outdoors in early June? Locality, Wolverhampton.—C. N. P.

4033.—Sempervivum tabuleforme.—Is this hardy or tender? I have a plant—or rather eight or nine plants—in an 8-inch pot, which does no good, and I should like to know if I can plant it in the garden?—C. N. P.

4034.—A Privet hedge.—When is the best time to cut down a Privet hedge two years old with a view to strengthening it? It gets killed every winter—that is, some of the stems—and it is, in consequence, very thin. Can I put in cuttings at the bottom? If so, when, please?—C. N. P.

4035.—Lilies and Irises.—I am anxious to plant a border for next year with lilies and Irises. I faced south, with a brick wall at the back, soft clay and loam. Would anyone kindly tell me the names of some of the best lilies (coloured and white) and Irises? I should like as many as possible to flower in the summer.—PAUL PAV.

4036.—Plumbago alba.—I have a very flourishing plant of Plumbago alba on my greenhouse roof, growing in large pots. Will some tender kindly suggest a plant to replace it to give white cut flowers? The Plumbago blooms are too perishable. All kinds of greenhouse stuff flourish, and the house is moderately heated in winter. Lean-to, 13 feet by 9 feet; aspect, west.—C. N. P.

4037.—Treatment of an Apricot.—Thanks to your good advice, I have for the first time nice Quinces and a good crop of Apricots, so trouble you again. A Pear-tree against a south wall planted about six years back makes vigorous growth, feng shoots, but hitherto I have cut them off. Tried root-pruning by cutting a trench about 14 inches from the wall. Still the same luxuriant shoots and foliage, but no blossom even. What is best to do with it?—G. C.

4038.—Manure for Chrysanthemums.—In a recent number of GARDENING I notice that pigeon's manure is recommended for Chrysanthemums, to be used in a liquid state. Would dove's manure answer the same purpose, and would the corn accidentally mixed with it make the water in any way injurious to plants? The doves are kept in a large cage, and have plenty of grit, water, &c., and are quite healthy.—ENQUIRER.

4039.—Management of a greenhouse.—I should be very much obliged if anyone would suggest to me any means of getting over the following difficulty:—viz.: A friend of mine, who has a greenhouse some 30 feet long, required the top shading last summer, and ordered one of his men to do so, but who foolishly coated it with ordinary green paint. The consequence is that everything has since died through the house but the leaden roof. Of course the paint has got such a hold on the glass it seems impossible to get it off. If you can give me any assistance as to removing it I shall be very thankful.—A CONSTANT SUBSCRIBER.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

4040.—Seedling Ferns.—R. G. W. R. appears to have sown some spores of a Maiden hair Fern, and he has got a crop of Pteris acrostichoides, and he asks for an explanation. Well, I suppose the spores of the Ferns have settled upon the Adiantum, and they were sown at the same time, or the spores of the Pteris floated in the air found the soil suitable for them, and consequently they grew. Such things often occur; in fact, I used to be

served in the same manner before I took extra precautions.—J. J.

4041.—A fly attacking Cattleya-roots (J. T.).—The roots sent appear to have been inhabited by a fly; but I suppose before you poked them to me you let the fly hatch, and you then set the empty houses away. Now, in all cases like the above, you should collect them as soon as they begin to appear, and very carefully burn them. I have great faith in osmation, as I advise it in particular for this pest; but they require to be collected when young, because then they cannot have done so much injury to the plants, and the osmator is the quicker get rid of.—M. B.

4042.—Soutioaria Steell (Justin).—This is the name of the flower you send, which, from its long, round leaves, obtains the name of the Shoe-lace plant. I have no doubt that it looks very nice, some ten or twelve flowers similar to the one you send all being situated upon short stalks thrown them together, and they make a fine display. I do not think I have ever said anything about the management of this plant. It is one of those odd out-of-the-way plants that I had really forgotten it; but better late than never, and I will be long. I am full of promises, however, at present.—M. B.

4043.—Linaria tristis.—J. Willis sends this for a name, saying he received it from his brother from the Canary Islands. It is a very beautiful species of the Toad-flax, and you should ask your brother to send you some ripe seeds and at once set about establishing it in your neighbourhood. It grows naturally in rocky places, and therefore it would succeed in the rocky, with but little soil about its roots. I should drop a seed or two into safe places in any old wall road about you, anywhere to get it established, for its glaucous leaves and its somewhat large flowers, which are greenish-yellow and purple upper lip, would make it a very welcome object in any position, and it flowers very freely.—J. J.

4044.—Collinsia verna.—S. Martin sends plants of this beautiful and charming annual, which I have found to flower best when sown in the autumn, pricked off into pots, and kept in a cold frame through the winter, when I have had it in flower in a superb manner from the beginning of April until the end of May. The flowers are so charming; the outer corolla is pure, the upper part being pure white, the lower part bright azure-blue, reminding one of the lovely blue Gentiana verna. Although an annual, it is a plant which everyone should grow, but it is a plant to which the slugs and snails appear to have an especial liking. I had also that it grows best when shaded a little from the sun, and not, like the majority of annuals, fully exposed to the sun's rays.—J. J.

NAMES OF PLANTS AND FRUITS.

*. Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W. C.

Names of plants.—B.—Apparently Allium pulchellum.—L. A. Crowley.—Taurus communis.—J. Wilson.—1, Odontoglossum maculatum; 2, Odontoglossum cordatum; 3, Oeodidium sepium (good variety); 4, Oncidium Gardneri.—J. Bryce.—Purple flower, biella speckled; the other some of the same, but the specimens are too small and withered to name accurately.—T. Mann.—Your Delphinium appears to be D. vitifolium.—G. Cunningham.—Canot name from leaves only with any certainty, but these are what I take your specimens to be: 1, Myrica bulbosa; 2, Rubus australis; 3, Coprosma Baueriana.—A. Hopps.—1, Spiraea palmata; 2, your White Rose appears to be R. sericea.—J. B. G.—Horseo stems.—T. J., Stratton.—Yes, we think Rose is Catherine Mermet.—H. Nichol.—Ben-bane (Hyoscyamus niger).—Mrs. Vaughan Hughes.—Yes, Fritillaria kamschatkica; other flower must be sent in fresher condition to name.—Mrs. T. P., Rugby.—Impossible to identify from such a bad specimen, and you do not give your name.—J. S. Smith.—Impossible to name from such specimens, and also the numbers have all become detached through bad packing.

Names of fruit.—S. S. B.—We cannot name Strawberries, especially when crushed to pieces, as in this case.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

M. S.—Fumigate frequently and lightly with Tobacco.

BIRDS.

4045.—Trapping and killing pigeons.—Will you inform me if it be a legal right to trap and kill pigeons? They are owned by a neighbour, who takes no notice of complaints; but as the birds are most destructive to my garden produce, I do not know of any other alternative.—CONSTANT READER.

"Gardening Illustrated" Monthly Parts.—Price 5d.; post free, 5d.

"The Garden" Monthly Parts.—This journal is published in neatly bound Monthly Parts. In this form the coloured plates are best preserved, and it is most suitable for reference previous to the issue of the half-yearly volumes. Price, 1s. 6d.; post free, 1s. 5d. Complete set of volumes of THE GARDEN from its commencement to end of 1892, forty-two vols., price, cloth, £30 12s.

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"Hardy Flowers"—Giving descriptions of upwards of thirteen hundred of the most ornamental species, with directions for their arrangement, culture, &c. Fifth and last issue. Price, 1s.; post free, 1s. 3d.

London: 37, Southampton-street, Strand, W. C.

GARDEN AND PLANT PHOTOGRAPHS

We beg to announce another photographic competition, when prizes to the amount of over Eighty Guineas will be awarded.

The subjects selected may be: Beautiful houses and country seats; garden landscapes; picturesque trees; plants, hardy and tender; Ferns; Roses; out flowers, prettily arranged; pretty cottage gardens; our best fruits on the branch or branches, not in dishes; standard vegetables; good flower-gardens, or any other objects of interest in a garden.

LIST OF PRIZES.

COUNTRY SEATS AND GARDENS.—A prize of TWENTY GUINEAS will be given for the best series of not less than six photographs of Tudor, Elizabethan, Jacobean, or other old English houses and their gardens, particularly showing the beauty of the house in relation to the garden. Picturesque old Farm and Manor houses will not be excluded from this competition.

GENERAL GARDEN AND PLANT PHOTOGRAPHS.—First prize for the best collection of general garden photographs, SEVEN GUINEAS. Second prize, FOUR GUINEAS. Third prize, THREE GUINEAS. This series may include subjects from any class, from either outdoor or indoor gardens.

FLOWERING PLANTS.—A prize of FIVE GUINEAS to the sender of the best collection of photographs of flowering plants grown in the open air or under glass. This series may include flowering shrubs of all sorts.

BEST GARDEN FRUITS.—A prize of FIVE GUINEAS for the best collection of photographs of any of our good garden fruits: Grapes, Peaches, Apples, Pears, Plums, Cherries, &c., or bush-fruits, to be shown on the branches, not in dishes. No prize will be awarded for photographs of fruits or vegetables crowded in dishes.

BEST VEGETABLES.—A prize of THREE GUINEAS for the best collection of photographs of best garden vegetables. The object of this is to get full representations of the best garden vegetables under the old genuine names. We do not wish to exclude real novelties when they are such.

In any of the departments, if no collection of sufficient merit is sent in, no prize will be awarded. All competitors not winning a prize will for each photograph chosen receive the sum of half-a-guinea. In order to give all readers ample time to prepare good photographs the competition will be kept open until the last Saturday in July, 1893.

WHAT TO AVOID.—Cut flowers or plants should not be arranged in vases with patterns on them. Backgrounds should be plain, so as not to come into competition with the beautiful flowers. Figures of men or women, barrows, watering-pots, rakes, hoes, rollers, and other implements, iron railings, wires, or iron supports of any kind, labels, and all like objects should be omitted from these photographs. The intention is to show the full beauty of the subject taken, and this cannot be done well when the photographer is confused by other considerations. Dwarf flowers are ineffective when taken directly from above. The camera should be brought low down for such. All photographs should be mounted singly, and not several on a card. They should not be mounted on cards with black backs, and the photographs should not be less in size than 5 inches by 4 inches. In many of the photographs sent in for our last competition the subjects were much overcrowded. The following are the rules to be observed by all competitors:—

FIRST.—The photograph may be of objects in the possession of either the sender or others; but the source whence they are obtained must be stated, and none sent the copyright of which is open to question. There is no limit as to number, and no fee to pay. The Editor to have the right of engraving and publishing any of the chosen photographs. The photographs may be printed on any good paper that shows the subjects clearly; but those on albumenized paper are preferred for engraving.

SECOND.—The name and address of the sender, together with the name and description of the object shown, should be plainly written in ink on the back of each photograph. This is very important.

THIRD.—All communications relating to the competition must be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Covent-garden, London, W. C., and marked "Photographic Competition." All competitors wishing their photographs returned, if not successful, must enclose postage stamps of sufficient value for that purpose.

GARDENING ILLUSTRATED.

No. 747.—Vol. XV.

Founded by W. Robinson, Author of "The English Flower Garden."

JULY 1, 1893.

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FLOWERS IN SMOKY SUBURBS.

THE dweller in crowded cities and smoky suburbs is sometimes filled with the desire to bring a little of the country into his humble plot. He envies the cottager, for there often the flowers cover the soil, and they seem to need no hand to constantly minister to their wants, the soil, air, and full sunshine giving them vigorous life. A different picture is presented in the town garden. Obstacles are often met at every turn, and perseverance is needed to bring to the fullest beauty the flowers that find a place in the crowded suburb. The Londoner or whoever he may be need not despair. The town garden may bring forth beautiful pictures when the proper plants are selected. More failures result from a bad start than from any other cause. Begin well and you will succeed, but lay down a false foundation and the whole business is vexatious. Before alluding to the best plants to grow in cities or their environs it will be profitable to devote a short space to the garden itself—soil, situation, and kindred matters. Usually the garden is composed of very indifferent soil, a mixture of builder's rubbish, odd bits of refuse, a singular hotch-potch medley of various materials, not exactly the type of "stuff" from which one can expect beautiful flowers to spring. Commence boldly by putting a little new soil, manure and lime—town gardens are usually deficient in this valuable substance—into the soil to make it worthy of the plants. If it has not been turned over for many years, as is sometimes the case where the house is not new, give the ground a thorough trenching, digging it up well so as to expose it as much as possible to the kindly influence of the rains and atmosphere, or frosts if the season of the year at which the work is done is in winter. Autumn and winter are the two periods of the year when this work is best accomplished, flowers then having departed for a time, and the ground is practically idle. My remarks are, however, made now, as everyone is thinking of flowers and gardens in the summer months. Beware of false imitations of rocks, paltry attempts to reproduce mountain scenery. A great disfigurement to many otherwise pleasing town gardens is this so-called rockery, a heap of stones or hurrs thrown together anyhow, and providing very small habitation for the plants unfortunate enough to have a place there. The "pockets" of soil are too small to permit of vigorous growth, and the plants strive to look respectable under the starved conditions. Sometimes the Creeping Jenny will hide much of the ugly brickwork, but more often than not there is insufficient soil to promote free growth. Get the ground firstly in good order; then proceed to lay it out, taking care not to chop it up into a multitude of paths, but give every available space to flowers. As the object is to have flowers, in place of brick or stone edgings, form the edging of the London Pride or the Thrift, which grows well near large towns. I will now give a list of the plants that may be expected to live well in town gardens, and if the list is not very long it will contain many beautiful things. The Iris, popularly

called the Flag, is a splendid town flower, appearing even almost to relish smoke and a vitiated atmosphere. In the garden of the writer it makes a brave show each year, although this little space is not far removed from a busy city, and more than one kind may be grown, as the family of Flags is a very large one. Chief and foremost is the common garden Flag, or German Iris (*I. germanica*), which is recognised by its strong, sword-like, glaucous-coloured leafage, and brave purple flowers, bold, effective, and full of graceful curves, intense in colour, and though lasting but a brief time individually, appear in gay succession, one bud expanding after the other on the same sturdy stem. Even against dusty highways this beautiful flower will appear to be regardless of the unpleasant surroundings. Besides the common kind one may choose also the lovely variety *Coleste*, pallida, the milky-white Florentine Iris, Quon of May, also the Dalmatian Iris, and Madame Cherean, white, with violet colouring at the margin of the florets. The Iris fancier may also grow the tall, Grass-like Siberian Iris, but it is better to rely entirely upon the germanica types than risk failure with the other species and varieties. The Iris requires a good, well-drained soil, rather heavy than light, and once the plants are established they should not be disturbed at the root if broad-spreading masses are desired. Like many another perennial this brave flower hates disturbance at the root. It is constant interference with it that brings about failure.

THE CARNATION is a splendid town flower. It is used in the London parks with the greatest success, the Old Crimson and White Clove, sometimes called *Oleire* de Nancy, making good progress even in the centre almost of the metropolis. In my garden in Clapham—not a country village—I can grow a superb selection of all the leading kinds, florist's and the ordinary garden Carnations. The Chrysanthemum is one of the finest of town plants, apparently relishing the unpleasant conditions of town life. The unjoined list is of necessity small. Comparatively few hardy plants will live in towns, but from experience the following, if not so plentiful as in the country, always give a good return in the way of flowers for labour expended. Taking them alphabetically, we have the Japanese Anemones. *A. japonica*, a rose-coloured species; but the kind most largely grown is the variety *album*, or *Honorine Jobert*, in which the flowers are of the purest white, and invaluable to cut from for the house. A clump of this in the garden makes a fine picture, and the plant commences to bloom when the flush of summer things has passed. Provide them with a rich soil, well manured, and during the summer months give an abundance of water, as in town gardens in particular the soil quickly gets dry—almost dust-dry. Put in at the start good plants, not weakly scraps that need a lifetime almost to grow into respectable specimens; and once in position leave them alone, except for an occasional mulching, for several years. Constant disturbances at the root, as in the case of the Iris, is most hurtful. More plants are killed by mistaken kindness than by any other source. Then we may name in our small selection the Rock Cress (*Arabis alba*), smothered with white flowers

throughout the summer season, making little snow-like drifts and running riot hither and thither, deigning even to cover ground the reverse of agreeable to hardy plants in general. The White Rock Cress is one of the most accommodating of perennial flowers, and may be permitted to cover rockeries or tree-stumps with a surface of blossom. The Michaelmas Daisies will possibly occur to mind as an exceptionally attractive family, free in growth, and blooming freely at a season of the year when flowers are fast flying away. One wants, of course, to see the Aster in a country garden, filling the scenery with colour, brave masses of bloom creating a shimmering of varied purple and lilac tones in the landscape. This great North American family is composed of many "weeds;" but there are many gems, such as the dwarf *A. scris*, often a mass of bloom, the plant not growing more than 2½ feet in height. Then we have *A. besseriensis*, or *A. amellus*, as it is usually called, the flower being a mere variation from the latter; the species and a few plants of this are very showy in late September. One may also name *A. dumosus*, *A. linearifolius*, *A. ericoides*, *A. levis*, and *A. Novae Angliae*, the last-mentioned being the tallest of all, reaching a height of nearly 5 feet. The town gardener need not be deprived of the Bellflowers or Campanulas. A splendid kind for smoky atmospheres is *C. Rapunculina*, very free blooming, the flowers large and rich purple blue, and the plant is of easy growth. The writer has had for several years in his suburban garden a mass of this native Bellflower, whilst *C. glomerata dahurica* possesses much charm, the plant growing in ordinary soil, but requiring a moderately open position. Its clusters of flowers—hence its common name, Clustered Bellflower—are of intense violet-purple, and useful for cutting. The Giant Cornflower, for such it may be called, *Centaurea montana*, and its varieties are very free border plants, making rich tufts of growth, the flowers like those of an ordinary Cornflower, but three times as large, and varying in colour from pure white to quite a rose-shade. The remarkably fresh-looking *Erigeron*, or *Stenactis speciosus*, is a valuable border plant, growing well in ordinary garden soil, and bearing its large lilac flowers in profusion throughout the greater part of the summer. It is showy and free. The yellow-flowered *Coreopsis lanceolata*, which seems to live best in light warm soils, and the perennial Larkspur or Delphiniums are a host in themselves. Every old-fashioned cottage garden worthy of the name is enriched by broad, vigorous clumps of the Larkspur, the tall, straight, sturdy stems rising up from the luxuriant hush of rich-green leafage. During the past few years Messrs. Kelway and Son, of Langport, Somerset, have greatly improved this race by hybridisation, and in some of the newer varieties we get bold contrasts of colour and great beauty in the individual bloom. It is strange that some of the best of plants for town gardens are seldom seen there. The

PLANTAIN LILIES or Funkias are a case in point. Even deprived of flowers they are attractive to look at, the leaves broad, glaucous green in colour, not to be overlooked, and remarkably ornamental. *F. ovata* is one of the most suitable, as it seems

to stand better than the others the trials and hardships of a smoke and sulphur-laden air. Then we have F. Sieboldi, F. japonica, F. lanceifolia, and F. grandiflora, which has pure white fragrant flowers, requiring a sunny spot, and warm, thoroughly well-drained soil. The writer has seen even in the heart of London, where the householder is unblest with a garden, thriving masses of F. ovata grown in tube to adorn the flag-paved fore court. The chief requisites under these conditions is a good supply of water in the summer months, when the sun beats fiercely upon the pavement, and renders plant life unhappy. The great family of Perennial Sunflowers, or Helianthus as they are botanically called, form a beautiful group of hardy plants, preserving a distinctive family likeness, but differing in habit. The commonest is the double-flowered Helianthus multiflorus; then we get H. argyria and H. decapetalus, that grow to a considerable height, the shoots slender, and awaying their many flowers in the wind. All grow very readily in ordinary soils. Then the Day Lilies may be mentioned, and they will grow almost anywhere. All the plants named have the happy disposition of not being very particular as to the soil or their surroundings. They will live in the moist meadowy spots, asking simply to be left alone. Lilies are not good town flowers. One may sometimes see them in brave attire, but it is better to leave them alone, except, perhaps, L. croceum (the Common Orange Lily), L. umbellatum, and L. auratum, but when money is no object, a view of Lilies may be gained each year with new bulbs. The Creeping Jenny, full of charm when permitted to run over rockwork, Evening Primrose, the Mossy Saxifrage, London Pride, Golden Rod, Spanish Squill (Soilla capanulata), and Sedum spectabile may all receive admittance into our select list of town flowers. The Sedum succeeds in the smallest and poorest garden, the rosy flowers crowded on flattened heads, making a bright show in the month of September. The Japan Knotweed (Polygonum cuspidatum), if weedy in growth, living almost anywhere, on the top of an ash-heap or on a gravel path, is a very beautiful weed, but requires careful treatment somewhat to bring out the full beauty of its finely-arched stems and pondant strings of creamy flowers. I have often seen it bloom with great freedom in large towns, and if the display of flowers is not very imposing, the habit and leafage of this Japanese plant are attractive. The young shoots as they come up through the ground are said to be eaten by the Japanese, in the same way as Asparagus is eaten in England. Town gardens are usually much in the shade, through their small size and surrounding buildings, but even if the whole garden were deprived of the blessed influence of the sun, it would be possible to get some enjoyment out of it. Hardy Ferns delight in shade and moisture. Beautiful varieties of the Male and Lady Fern can be grown into large specimens, and such things as the Spanish Squill bloom each year with unflinching regularity. To ensure success, as before pointed out, begin well, incorporating, in the case of the Ferns, a fair share of peat with the soil, and remember that moisture is life to them. Many things suffer from the poverty of the soil. The London Pride reveals a different complexion when grown as if worthy of something better than ashes and brick-ende, and this remark applies to town and, in fact, all plants in general. Let gardening be thoroughly well done, a suitable selection of things made, and hours of recreation from business will be well repaid by healthy exercise, bringing into life gay flowers, a pleasure to see, sweet reminders of country gardens and waysides. C.

Pink Napoleon III.—When calling last season at Messrs. Kelway's nursery at Langport, I was much impressed with the value of the mule Pink for borders and beds as I looked on some large masses growing in the most exposed situations. At the time of my visit they were in full bloom, one mass of Napoleon III. being some 5 feet or 6 feet across. Some years ago, when living in North Hants, I grew these Pinks largely, and they used to hicom so profusely that it was difficult to obtain cuttings. I overcame this by taking the cuttings from some plants early in spring, allowing them to grow into growth, and then taking another batch of cuttings.—H.

GARDEN WORK.

Conservatory.

The weather at the time of writing is intensely hot, and shade and water will make up the principal items of management. Any plants which can be taken from the stove will do very well in the conservatory now. Palms, Ferns, and other foliage plants will give a cool appearance that will be usually much appreciated. Foliage planted out will be chemically effective hanging about; climbers of various kinds will also take off the stiffness. It is such an easy matter now to clothe bare walls that are naked; surfaces should be hidden with foliage and blossoms. I have before alluded to the value of fly-leaved "Geraniums" for this purpose, and they are also well adapted for filling wire-baskets to suspend wherever there is room. Achimenes also should be used for filling baskets. They are very effective when the baskets are of considerable size. Hard-wooded plants may now go outside for the most part, but they must not be taken from a shaded greenhouse or conservatory during this bright weather direct to the open air and placed where the sunbines can reach them or the leaves will suffer. If taken out during a dull time no harm will be done, but to place a plant outside in this scorching weather would turn the leaves brown in a few hours. If they are taken out whilst the sun is rather late, place them under the shade of a tree till the foliage has hardened a bit, or else place them on the north side of a building. They can be moved to a more open place when the foliage has got hardened a bit. Camellias must not be placed in the sun at all, as the leaves may scorch, and a Camellia with burnt leaves is disfigured for a long time. Ventilators should be left on all night now. The night air when there is no wind is very beneficial to all greenhouse plants. Watering should be as far as possible be done in the evening. There will of course be plants that will require water more than once a day in such drying weather, and an eye must be kept upon them and water given when required. Young stuff will now be in pits and frames, and can easily be made comfortable with shade and a gentle dewing over when closed in the afternoon. As the plants get larger and stronger, air will be left on all night, but at present young stuff will be kept pretty close to encourage growth. Use the engine or syringe as freely as circumstances will permit.

Stove.

There is much beauty of leafage in a collection of Crotons. I do not know that I should care to have a bonus lot of Crotons, but they are charming among Ferns, chiefly placed and clearing the air, and an eye must be kept upon them and water given when required. Young stuff will now be in pits and frames, and can easily be made comfortable with shade and a gentle dewing over when closed in the afternoon. As the plants get larger and stronger, air will be left on all night, but at present young stuff will be kept pretty close to encourage growth. Use the engine or syringe as freely as circumstances will permit.

Fern-house.

This is a good season for visiting a Fern nursery and selecting a few fresh varieties. One might easily make out a list which might be recommended; but it will be better and more satisfactory for the buyer to visit one of the large growers and see what he has in stock. If we could have all our desires gratified, I should say build me a nice roomy house, and let me have a representative collection of Adiantums. Scarcely anything could be more interesting than a house filled with Maiden-hairs of every kind, from the tall-growing trapeziform to the small, but elegant, acumin. Probably an enthusiast in Ferns would want to carry the matter further. A household of Gold and Silver Ferns well grown will be equally interesting to the Maiden-hairs, and then we must have a cool, dark corner somewhere—underground it might be—for the Fifty Ferns. Mosses, again, can be had in almost endless variety, and to the student of Nature they would be as interesting as the plants with larger and more brilliant leafage. Moisture must be freely present now in the Fern house. Much of the humidity may be obtained by damping floors and walls. Do not use more shade than is required for plants which are intended to supply foliage for outdoors.

The Rose-house.

Tea Roses are beautiful outside in the open, and most of us must have them there or not at all. But I have heard many a struggling Rose-grower wish for a glass-roof to shelter those which are not so very happy outside. It is positively true that it may not be wise to perpetuate the constitutionally weak; but if this were carried out to its logical conclusion what would become of the Marchal Niel? And where is there a Rose of its colour to take its place? Then, again, see how easily the town gardener might have his roses if he had a glass-house. Whether heated artificially, glass for Tea Roses in the suburbs of towns and in cold districts generally is very desirable, and it

will be more largely used for the purpose in the near future. Let the house be light and the coolers well made and one cannot then go far wrong.

Window Gardening.

The other day I noticed a window in a cottage residence very tastefully decorated with blue and white Campanulas. At the bottom of the window were two red and one yellow Tuberosa Begonias and four of these Campanulas; two of white and two of blue were suspended, two in baskets and the others resting on small brackets fixed inside the window frame. When the Campanulas of other plants would take their places.

Outdoor Garden.

Alpine plants on the rockery will need both water and mulch. Cocoa-nut fibre will do for mulching purposes. It will also will need moisture and should have it applied liberally. If we are at the beginning of a cycle of dry seasons it will pay to make a better provision for a supply of water and its distribution. Nothing can be worse than the water supply in many gardens, and the only method of distribution is the cumbersome and old-fashioned one of dragging it about in pots and tubs. If there had been a good supply of water hoses would have been in a better condition than they are. There are plenty of good blooms of course when well cared-for on good land, but Roses and other things are suffering the drought more than they ought to be. It is better provision had been made. Mulching may be done any time when the bark will work. A coating of water to both Briere and the plants from which buds are required will generally bring them into condition. With the exception of "Geraniums," bedding plants are not making much show yet. Dry seasons just suit the Pelargonium family. Keep the soil loose among the plants by frequent stirring, and nothing more is required; but Calceolarias, Verbenas, Heliotropes, Asters, Siccas, and Vinca, will need both water and mulch. Sow Myosotis distillifolia in the shade for Blooming next spring. Silene compacta, Lunanthes Douglasii, and other hardy annuals may shortly be sown for flowering next spring. Transplant Canterbury Bells and other biennials or perennials sown this spring when large enough, but the seeds of most things have grown badly in consequence of the drought. Sow Brompton and East Lothian Stocks. Wallflowers may still bloom.

Fruit Garden.

It is thus the stock of Strawberries for forcing was secured, and if layered in small pots those layered first will soon be ready for pining in the fruiting pots. I shall never again grow Strawberries in pots for forcing in a smaller size than 6 inches in diameter. The labour of watering is too great and for late fruit 7-inch pots will be better. I need hardly say anything about varieties further than that those who can grow British Queen cannot do better than stick to it. Vicomtesse de Thury for early work, followed by Sir J. Paxton, J. Veitch, and President. There is no fear about these things, if they have merit, being neglected. The danger lies in getting rid of an old well-tried variety and taking up something not so good and reliable. Where kept a seedling does well it will hold its own as a forer; the fruit must be thinned to get size, but it offers advantage for the forer as ripening its crop altogether, the fruit can be gathered, the plants cleared out, and the space occupied with others. Outdoor Strawberries have in many gardens done badly for want of time. It is a mistake to keep plants too long in the soil, and in the preparation of ground for new plantations may well be found very beneficial where the land is light. Sift the soil on the day on which the ground has been trenched, and lightly fork it in. Rubens' Blooming fruit generally are very small. If it could have been managed it would have been well to have mulched all these things. The autumn-bearing Raspberries are coming up well, and in most cases they will need more support. Break up old Mushroom-beds, or get a few loads of sheep-droppings in manure and spread among the Autumn Raspberries, or any fruit-trees or bushes. Fruit-houses must have free ventilation now, and borders must be attended to.

Vegetable Garden.

Mushroom-beds will require careful attention especially in the matter of watering. Beds in houses, unless the position is a very cool one, will produce maggoty Mushrooms and those which can only be used in the button state, and the difficulty with beds in the open air is to provide a damp atmosphere. An underground collar is the place for Mushrooms in summer. In winter, and in the autumn, supply liberally with water to keep the beds well established. If the weather continues there will be a scarcity of good Autumn Cauliflowers though Veitch's Autumn Giant, and the Self-proving Broccoli, sent out by the same firm may be planted with the certainty of their growing well if well looked after. Mulch recently-planted Celery by spreading a couple of inches of short manure over the soil in the trench. Vegetable Marrows and Ridge Cucumbers must have both mulch and water if they are to do any good. Tomatoes, where well supported with nourishment, are likely to do well outside, but with mulch and water they will do better with the intense heat. Under glass the beds should be deeply covered with stable manure. I am in it Moss-litter manure and I find it answer very well, keep the roots cool and moist, the roots also working up into the soil. Second early and early Peas may be planted up till the 15th of July, and of course late Peas are more or less unobtainable, but the result is much influenced by the attention given. Those who have plenty of frame or pit-room may plant a pit or frame with Dwarf French Beans. Sow Horn Carrots to produce young roots for winter. Parsley if there is a likely to be any scarcity, may be sown now for winter. Pull up Shallots and lay them out to ripen. Spring onions must be small this season; liquid manure and a mulch of short manure between the rows will be helpful. E. HODDY.

Work in the Town Garden.

Gardening in towns is in some respects not without disadvantages. In such weather as we have had of late a flowering that may not appreciate to have a regular and unobstructed supply of water at hand. In some districts of London the water companies have interdicted the use

In cold or northern districts the operations referred to under "Garden Work" may be done with less delay to a fortnight later than is here indicated, with equally good results.

of water for garden purposes; but, all the same, I fancy that very few men who really care for their floral pets would be above appropriating a few cans daily in order to keep them alive. In many country places water is now so scarce that it has to be fetched for miles, and in some cases is only available in the smallest quantities. In one instance that has recently come under my notice the gardener has been obliged to let most of his greenhouse plants die, very little more water than enough to supply the household being obtainable, and in several others the bedding-out has not been done yet, simply because there is nothing to water them in with. The pall of smoke, too, that always hangs more or less over a city or large town tempers the burning rays of the sun to an appreciable extent, and plants both under glass and outside consequently suffer somewhat less from intense heat. The atmosphere in large towns is very much purer now than at any other season of the year, owing to the comparatively small number of fires kept going, and consequently glasshouses of all kinds may be very much more freely ventilated. The best time to give air is quietly now is during the night and early morning, when even in the very heart of London the atmosphere is often remarkably clear and pure; but during the heat of the day it is advisable to close the roof-ventilators, or, early so, in order to check evaporation as far as possible, giving air only at the sides or in front of the house. Watering, that is to say the principal supply, is best given in the evening at this season, when the plants are drinking in moisture and strength all night, and by the morning will be able to utilize the orinal of another day. The stock should, however, be looked over in the morning as well, and in some cases about noon also, and any that are dry and replenished, while the early morning damping down ought not to be omitted. Tomatoes must be abundantly ventilated both by day and night, and be liberally supplied with water also. A good syringing once or twice daily will be found beneficial under present circumstances also, especially in houses that are fully exposed to the sun. Pot off Chinese Primulas as soon as possible and make a first sowing of Herbaceous Calceolarias.

E. O. R.

autumn-flowering plants has been in the bloom-pots for some time, but the late sorts will not do reported yet. In potting a couple of inches, in some cases more, of space is left at the top for top-dressings when required. Our loam is not good enough to produce extraordinary results, but a little fortifying with artificial will help. Years ago I have used night-soil to improve poor sandy loam with very good effect, but this is not convenient now. The plants, when the potting is completed, will all stand in long lines on edge of aches, and stakes and wires run alongside to secure the plants to, as the wind is sometimes troublesome here. Shifted winter-blooming stuff, such as Primulas, Cyclamens, Cinerarias, Begonias, &c. into 5 inch pots. Cut down Pelargoniums and put in the cuttings. Commenced huddling the standard Briers; have had to water them to get the sap in motion—either had to do this or wait for rain—and young standard Roses will be scarce next year; in fact, good stuff nearly always is scarce and dear. Planted out a lot of Fuchsias; they will make a show in the borders, and I shall get some soft cuttings from them.

ROSES.

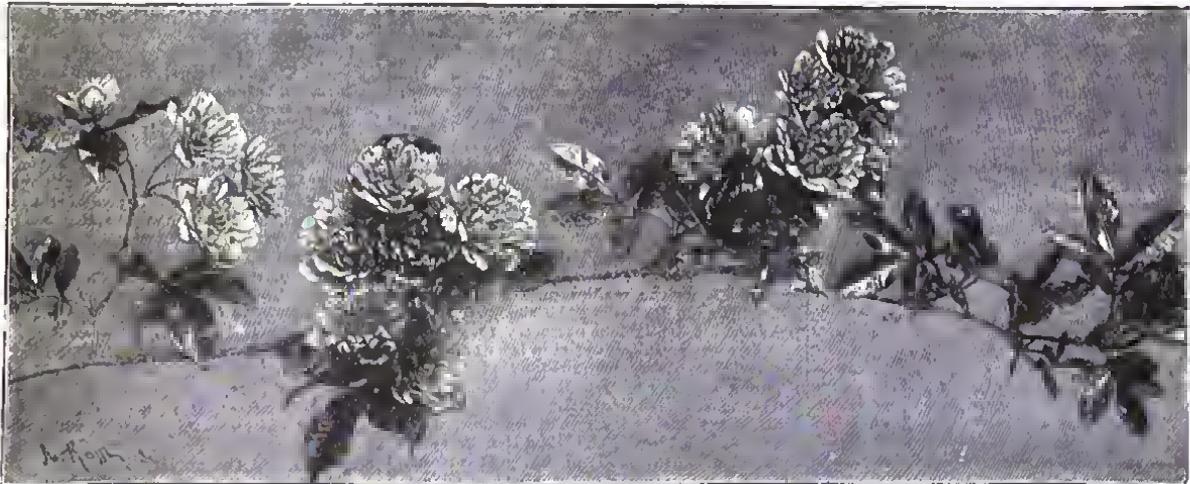
YELLOW BANKSIAN ROSE.

ALTHOUGH the White Rose that Robert Brown named in honour of Lady Banks was introduced twenty years earlier, it was not until 1827 that the Yellow Banksian Rose was brought to England from China. It quickly became an established favourite, and still occupies a prominent position in general esteem, for it makes a charming climber, able under favourite circumstances to cover the side of a house and to provide a profusion of its clusters of miniature yellow flowers. It is, unfortunately, not abso-

but what it would succeed fairly well with the growth pegged down. But it does still better under what is known to gardeners as the cutting-down plan, which means that all the growth is cut down in the winter to within about 4 inches of the ground. Under this system it does not flower so early, but the blooms come larger, and are more continuously produced—in fact, the plants continue to flower right up to the time that frost cuts them down. Unpruned plants will, however, produce much the largest number of flowers, especially if the roots receive the assistance of an annual dressing of manure.—J. C. C.

3998.—**Marechal Niel Rose.**—This Rose blooms on wood made the preceding year, and it is therefore necessary to cut back hard after flowering, so as to induce a strong, free growth. Leave from two to three eyes of last year's wood, and encourage these to break by wall syringing them daily. Little or no water will be needed till growth is being freely made, and then abundant supplies must be given. At the close of the autumn prune back the shoots to about two-thirds of their length. This is the only way to get an abundance of high-class blooms. Pruned in the ordinary way there will be very few flowers.—J. C. B.

A new Rose.—A good new Rose called Garrino Millar, a curious and not very happy name, is likely to prove useful for pillars and



A flowering shoot of the Yellow Banksian Rose.

THE COMING WEEK'S WORK.

Extracts from a garden diary from July 1st to July 8th.

Finished patting in cuttings of Pinks and commenced layering Carnations. Went over Plums and Cherries on walls to remove breakwood and nail in young shoots to fill up vacant spaces. Gave Peaches and Apricots on south walls a good watering; they have also been mulched and the garden engine has been used two or three times a week. I have laid an embargo on all the soap-suds made in made laundry on washing-dishes, which are used wherever and cessary for cleaning fruit-trees, Roses, &c. A little air is let on all the houses now at night, except those devoted to Cucumbers. I have been working two houses side by side to test the merits of ventilation or the reverse. One house has been kept close, no air at all given, but the south side is shaded; the other is ventilated moderately every warm day, and is also shaded on the south side. The plants are very healthy, but the fruit takes twice as long to come to the cutting size as in the house where no ventilation is given. This is, I suppose, what most people would expect, and where the produce is sold nearly double the amount will be made from the house which is not ventilated, although both are the same size. Of course, the fruit from the unventilated house will not keep so long after being cut. Cucumbers rushed on in this way soon get fishy; but as a means of turning the honest penny the man who runs his place on the old-fashioned plan would starve. Wrote over Melons to give water and remove laterals. Good Melons are plentiful now, the melons having given them better flavour than customary. Melons want doing just to the right turn and casing them, as the flavour in the best form soon goes. Planted another house with Melons to follow in succession. Made a last sowing of Peas, the variety being William I.; shall not sow any more with the view of gathering Peas from them, but shall probably make a sowing or two to eat green when about 3 inches or 4 inches high to flavour soups, &c.; they do very well for this purpose when Peas are scarce. There has been a bad season for Peas, the weather too cool for even when mulched they were killed on the 1st of July; if not used the very day they became fit they will be old the next. Still shifting on Chrysanthemums. The

lately hardy, but if it be planted on its own roots, even if there should come a winter so unusually severe as to kill the tree down to the ground line, it will then be almost certain to break again from below. In a climate like that of the Isle of Wight, however, the Yellow Banksian luxuriates, and when the young growths have not been injured by late spring frosts, the display of bloom observable on some of the houses there is magnificent. With flowers resembling nothing so much as yellow double Cherry blossom, and with shining deep-green leaves of three or five leaflets, there is no more distinct and characteristic Rose, nor is there any whose flowers collectively make so telling an effect, while individually so dainty and so delicate. The Yellow Banksian is a sun-loving plant, and may be better cultivated in an abnormally hot and dry situation than in one at all habitually shady or damp, and it also makes a fine subject where it can have plenty of room in a Rose-house, some growers making it a favourite stock on which to work Marechal Niel under glass. It need to be sometimes said that to get the Yellow Banksian to blossom freely it was necessary to cut out all the strong growths, leaving only the twiggy shoots to flower; but this is not the case, except where the wood is not fully ripened, owing to a lack of exposure to the sunshine. If this Rose be grown in a suitable situation, it is of the greatest beauty. B.

Monthly Ross.—This old Rose is such an accommodating plant that I do not doubt

other such positions. The flowers are single, quite as large as those of Rosa rugosa, and the colour is deep-crimson—a glorious hue, very distinct and pleasing. It is free, bright, and essentially a thoroughly good garden Rose, and likely for its freedom and bright colour to be much grown in the future.—V. C.

A note on Tea-scented Roses.—This beautiful class wins the heart of every lover of flowers. It is full of beauty, the flowers of refined and delicate shades, yet there are not wanting those of decided colours, even crimson, as in Souvenir Theresé Levet. This section may be split into two, keeping the more vigorous growers to themselves, and the popular Gloire de Dijon, that mounts up the cottage chimney and flings its deliciously-scented flowers in the rustic window, is representative of this type. The Tea-scented Rose is just growing in public favour. Its lovely flowers are irresistible, and only a supposed want of hardiness in the plant makes those who would grow this class largely hold aloof. Each year rosarians add to their treasures, and those societies offer a greater number of prizes for the Tea flowers. About four years ago the National Rose Society inaugurated a special exhibition for them, and its popularity justifies the undertaking. In old books and catalogues one often finds such a remark as this: "Owing to their tenderness Tea Roses cannot be properly grown in the open air, as they need protection. Under glass their flowers become well developed." Everything is changed now, and even in cold localities the plants prove successful. Give them a well-

drained loamy soil, warm, not too heavy, or much exposed to cold winds. The writer has seen them thrive on a breezy hill-top, and stand many degrees of frost without injury. If the shoots get cut down, new growth takes place in the spring, these carrying a wealth of flowers, though a little later in the year. When strong, Tea Roses will bloom from June until stopped by frosts. In very mild winters a handful of flowers may often be cut for the house on Christmas Day, but it is not often on such a day that a sweet bouquet can be provided. A little pro-



The Sweet-scented Tobacco (*Nicotiana glauca*).

tection, however, in severe weather is advisable, and this may be given by Fir-branches, or dry fronds of the Bracken. If the crowns are safe no fear need be felt as to the display of flowers. The stronger varieties, as Gloire de Dijon, are adapted for climbing over arches, pillars, or trellis-work. In spite of many new climbers, this fine flower holds its own for freedom, vigour, and sweetness. It is a pleasure to see that in smaller gardens the Tea-scented Roses are being grown freely and well. They are far better than ugly standards or indifferent Hybrid Perpetuals.—V. C.

THE SWEET-SCENTED TOBACCO (NICOTIANA AFFINIS).

The plant of which we here give an illustration is one of the best things of its kind that can be grown in a garden. It is a most excellent bedding plant, and does very well in pots or planted out in a cool greenhouse. This Tobacco-plant, although well known, is not grown half so extensively as its great merits deserve. B.

Tufted Pansy "White Swan."—It is probable that this capital Tufted Pansy is sometimes taken for Countess of Hopotoun. I think it may have been so at Claremont, where I saw it growing in huge clumps on the borders last week. No white variety could possibly have bloomed more profusely, and although Snowflake may be a trifle whiter, it could hardly be more effective. White Swan is one of the varieties raised at Bedford some ten years since, but I had lost sight of it for some time, and was pleased to see it doing so nicely at Claremont last season.—D.

Dianthus plumarius.—What delightful gems these single rock Pinks are! On the rocks good clumps of varied colours are neat, graceful, and effective. They are also attractive in the borders, and most useful for supplying cut blooms for the decoration of vases. Considering their many merits and the ease with which they can be grown (a shilling packet of seed gave us the start), for they grow freely from seed, and can afterwards be increased by piping, if required, it is surprising they are not more often seen in the case.—R.

CHRYSANthemUMS.

CHRYSANthemUMS IN THE OPEN BORDER.

WITHOUT special attention to watering and mulching the plants, I fear Chrysanthemums in the open border stand but a poor chance of success this year. Naturally, this flower is a moisture-loving one; where water is scarce, or the time to apply it is limited, the plants suffer, and when allowed to become dry at the roots for any lengthened time, that free growth which is so desirable receives a check, the lower leaves shrivel, and eventually cannot perform their natural functions. Any house slop or liquid-mannure that can be spared should be utilised for watering the plants, afterwards providing a mulching of half-rotted horse-mannure, if obtainable, as a means of conserving the moisture about the roots by the prevention of evaporation from the soil. If manure of any kind cannot be had, decayed vegetable refuse, to which is added a portion of wood-ashes, road grit, or old potting-soil, adding a handful of quicklime to every bushel of soil as the mixing takes place for the destruction of slugs or any other vermin. Plants well soaked with water and directly afterwards mulched in this way will withstand a long period of drought with impunity, as compared to those that simply receive a watering and no mulching. It is surprising how quickly the moisture evaporates from the soil where no mulching is applied, owing to the fissures made in the surface soil, through which the sun absorbs the moisture. Even if no mulching material could be obtained at all, if the surface soil was broken up and kept loose, so that cracks would not form the plants would not suffer nearly so much as though nothing were done at all. During such excessively hot and dry weather that we are now experiencing, any little aid in the manner indicated will be felt by the plants as an advantage in encouraging growth. The plants will require some support while growing to prevent the shoots being broken or bent. A single stake in the centre of each, to which the branches can be loosely but securely looped, affords the readiest means of security without unduly crowding the shoots. All the light and air available is necessary to give the best results in a full flower crop later on. These border plants do not require any pinching or thinning of the shoots, but allow all to grow freely and uninterruptedly. Long spikes of bloom, with foliage attached, are then available, which are far superior to the short and slender spikes obtainable by continually pinching of the plants, even if there are fewer of them. E. M.

4038. — Manure for Chrysanthemums.—The manure from doves would answer quite as well as that from pigeons in a liquid state for these plants. As it is mixed with grit it might be laid on the top of the pots, $\frac{1}{2}$ inch thick, as a top-dressing. In this way it would be easier managed than making it into liquid. The corn mixed with it would not interfere with the plants at all. Perhaps some of it might grow. That is easily removed, however, when the plants are growing.—E. M.

— Yes, the manure referred to would do as well as that of pigeons. The corn will do no harm whatever.—B. C. R.

3987. — Plants for Sheffield.—I presume flowering plants are intended. If so you will find the following among hardy perennials, &c., to thrive more or less well, according to the locality, whether very smoky or otherwise: Auriculas (garden or alpine kinds more particularly), Armerias (Thrifts or Sea Pinks) in variety, Campanulas of sorts, Carnations, Centaureas (Valerians), Delphiniums (Larkspurs), Doronicums in variety, Helianthus (Perennial Sunflowers) in variety, Hollyhocks, C. latifolium, and C. uliginosum, as well as the ordinary autumn-flowering varieties of C. indicum; Marvel of Peru, Veronicas, Tritomas (Torch Lilies), Creeping Jenny (Lysimachia vulgaris), and Lilies of several kinds, particularly L. candidum, L. auratum, &c.

tigrinum, L. Martagon, and L. speciosum. Of annuals Tropaeolums (Nasturtiums) in variety, Cornflowers, Mignonette, Annual Chrysanthemums, Sunflowers, Marigolds (African and French), as well as the common "pot" Marigolds (Calendula), Phlox Drummondii, Aster, and Ten-week Stocks. The Virginian Creeper, Vine, Fig, Clematis, Jasmine (white and yellow), Euonymus, Anacards, Lilacs, Weigela, Gum Cistus, and Rhododendrons will also succeed.—B. C. R.

— It depends upon the kind of plants that you wish to grow, but I presume ordinary border things. If you live amongst houses so to speak, avoid Roses, but if in the suburbs, away from dense smoke and dust, then you may grow the queenly flower, especially those kinds mentioned in GARDENING, June 10th. Advice upon plants for large towns has been given before in GARDENING, and further notes upon the same important subjects to those who live in towns will appear soon, probably; but I may mention that in your plot you can have good Carnations if the ground has been previously well prepared. This is more than half the battle, and you will do well to read my note in last week's issue upon a "small flower garden," and the plants there mentioned will succeed also in Sheffield, if the situation is not too smoky. Make a point of getting some good Chrysanthemum roots, especially if the variety Jules la Graviere, and the old Empress of China. They are very charming in the open, even in a smoky atmosphere. In a garden, not far from London, I visited recently, there was a splendid show of flowers in the borders, comprising many things not supposed to succeed under such conditions. Carnations, Pinks, Irises, which are very good town plants, Lychnis Hoegaans, Stonecrops, and Creeping Jenny, over the rockery; Erigeron speciosum, Tufted Pansies, Sweet Peas, and various annuals, beddore in variety. You cannot do great things this year. The time for plenty of hardy flowers has gone by—at any rate, to get effect this year—but if you wish to keep the garden this year put in hedges at once, Tuberoses, Bagonias, Dahlies, Calceolarias, &c. If the garden is at present bad and in quite a rough state, no good planting can be done until the autumn. Read advice given in the answer about "a small garden" as to its preparation.—C. T.

4030. — Francoa ramosa.—This is appropriately named Bridal Wreath, or Maiden's Wreath, the flowers being white, and produced freely in racemes. It is a thoroughly useful plant, and may be grown from seed, which should be sown under glass in the usual way, the soil to be light, and the pots well crooked. When of sufficient size pot off the seedlings, and keep them in a greenhouse. They do not need artificial heat, but the Francoa is often grown well in winter; even it may be planted outdoors in sheltered, dry, warm situations, such as in the south of England. The flowering season is lengthy, the plants producing a free display of the long racemes. It is a Chilean plant. If you have a greenhouse, or one of the little structures attached to dwelling-house, you may grow with success the Francoa.—C. T.

— Francoa ramosa may be raised from seeds or division. It is not quite hardy, but may be wintered in a cold frame or cool greenhouse. There is no difficulty in its culture if treated as a rare plant in winter. It does very well planted out in summer. If grown in pots use rich, free open soil. Under glass it flowers in spring, but the season varies a little, according to temperature. I have had it in bloom in March.—E. H.

Silene virginica (Fire Pink).—Without doubt this is one of the most brilliant flowering plants to be found among hardy perennials. Under cultivation, however, it is not of that robust constitution that one would desire, or such as would make it one of the most popular of choice perennials. A mixture of peat and loam, rough and fibrous, and freely mingled with old mortar rubbish, sandstone, or charcoal suits it fairly well, and planted on the higher parts of the rockery where its roots can come into contact with the stone blocks, it is, generally speaking, content for a time. But in whatever position or soil it may be found to succeed best, let it be encouraged to the full, for we have very few plants possessed of such brilliancy as this.

TREES AND SHRUBS.

SHRUBS FOR THE ROCK GARDEN.

DAPHNE BLAGAYANA.

In reply to "B. S." and others, this *Daphne* (figured below) is a most delightful little shrub for the rock garden if planted in a partially shaded position where it will not get dried up in hot weather. It was discovered by Count Blagay in 1837 in Carniola, where, according to M. H. Gussone, it is one of the most beautiful and rare plants, growing along with *Erica carnea*. It is said to be good for forcing. It has compact umbels of yellow and orange flowers, 1½ inches across. K.

Crowding up shrubs.—In both large and small gardens one sees many very beautiful shrubs destroyed by the senseless way of crowding them up together as if to destroy their characteristic growth. The beauty of a shrub of whatever kind is in its natural habit, its form, and outline. This is gone when the plant is crammed up in such a way that it is impossible for it to reveal its true character. Amateurs are greatly to blame for this careless style, and I hope that in the coming autumn when alterations are made in the garden that thought will be given to the proper growing of shrubs. I noticed a Mock Orange so crowded up that a very few branches got to the light. These were smothered with flowers, but one can imagine the beauty of the shrub when in the open, unfettered by neighbouring things and permitted to assume its natural habit, that of a graceful, distinct, and pretty shrub. One could name many other instances; and then in the autumn it is common to see a man chopping about the roots to make what is called a tidy garden. Even the little tender roots appear on the surface, chopped up with the spade, handled by one who knows nothing about shrubs, and does not care. The Guelder Roses, Lilacs, Philadelphiaeas, Mock Orange, or Syringas as they are popularly called, and many other shrubs that I could name are never allowed to flower properly in many gardens. Then again why persist in continually planting Conifers in towns, the shrubs that of all others detect an impure, dusty, and smoky atmosphere? Conifers, whether in town or in the sweeter air of the country should always be planted with the utmost caution. Nothing looks worse when out of health, and nothing is more difficult to get vigorous again. The little "Monkey Puzzles" in gardens are an eyesore than otherwise.—V. C.

4031.—A Privet hedge.—The first week in February is a good time to cut down the hedge; it might be cut in November, but you would lose the effect of its greenery through the winter. Any time before the sap rises is a suitable period to cut hedges of this kind, and the time named is as good as any. The hotter plan would be to put in cuttings by themselves when cutting the hedge down. Cut them in pieces 10 inches long, cutting square below a joint, insert them in rows 4 inches deep, with a little sand at their base if the land is heavy. Make the soil very firm about the cuttings to prevent the frost upheaving them, allow them to remain for a year, and then fill up any gaps in the hedge with the plants which would be certain to grow. If cuttings are inserted in the hedge at once they might not grow, and the gaps would still be there.—S. P.

The hedge must be in a very exposed position, or else the soil is too rich, and the growth consequently too soft and sappy to withstand much frost. Even when living in the midland counties I never remember Privet being winter killed, and have always regarded the plants as perfectly hardy. The best time to cut the hedge down would be in the spring, just as it is commencing to make fresh growth, but it is not too late yet. The gaps should be filled up with sturdy young plants in October, November, March, or April.—B. C. R.

Shorea galacifolia.—This lovely American plant belongs to the natural order Diapentaceae, and is still rare in gardens. A plant in a somewhat dry, sunny position died last winter, while another in a moist and shady position, sheltered by stones, has not only survived, but has bloomed well on a rockery in Exeter. The flowers are bell-shaped, white, shaded with rose, on stems 4 inches to 6 inches high, forming an excellent contrast against the leaves, which are of a very distinct reddish-bronze, turning to crimson.—F.

ORCHIDS.

CATTLEYA SKINNERI AND ITS VARIETIES.

I AM asked by a "Lady Reader" to say something about this beautiful plant? She went to the Temple show, and saw the very fine plant that was exhibited there by Mr. Ballantine in the collection of Baron Schroeder, and really there is no wonder that any lady should have fallen in love with its beautiful soft, satiny-rose-coloured flowers. It is now close upon sixty years ago since the plant was first sent home from the warmer parts of Guatemala, and later on by some of my personal friends from Costa Rica, and various other places in Central America, and in Guatemala it is known by the country people as the Flor de San Sebastian, and is used to decorate the churches of the saint, which occurs at the season at which it usually flowers, and I think from the day of its first introduction it has never been lost, but it has been maintained with varying degrees of popularity ever since. I have grown it in varying numbers for more than forty years and in various sizes; at the commencement of my cultural acquaintance I had several specimens nearly as large as that etched by Mr. Ballantine before mentioned, and which used to flower most profusely. One, a very fine large-flowered variety, with short hurls, I came across some ten years since, so that it cannot be called a very refractory species; but many a time I have seen the plant on its last legs through having too much heat and moisture given it; and then, again, from being too severely dried in winter; but *C. Skinneri* does not like to be either kept overdry nor too wet or warm, but it likes to be kept in about the same temperature as *Laelia purpurata*, and to be kept sufficiently moist to prevent the hurls from shrivelling. This *Cattleya* does not differ much in its colour, although some slight difference may be found in its size, and in the shading of the beautiful soft satiny-rose of its flowers. Until the Messrs. Veitch & Son, of Chelsea, first introduced the pure white-flowered form we did not have a thorough distinguished variety, but this having exactly the same habit and pure white flowers, with a faint tinge of lemon in the lip, is one of the most charming white Orchids known. After a little while a

jected to; but I should say either that she herself, or that her gardener has been treating the plant to syringing with other stove plants, and so this has by constantly keeping the hurls surrounded with water, which has run down the sheaths and ultimately rotted them, caused the bad appearance which she complains of, but which "Mrs. D." must quietly consider as her own fault if brought about by the cause here given; but at any rate it has been caused by bad management, and she must tell me the treatment she has given it, if I have not guessed right already. I have always cautioned growers of *Cattleyas* against the use of the syringe, for I have a very acute feeling respecting some *Cattleyas* left under my charge for a month in my young and boyish days, and which I deluged with water from the syringe every morning and evening during that time, which resulted in just the same conditions mentioned by the lady above named. These were not *C. Gaskelliana*, however, for this variety was not known in those days, or if known the name had not been given to it, for it was not until about ten years ago that the plant was introduced by Mr. Sander, of St. Albans, and given this name, but which I think I had grown some years previously under the name of the summer-flowering *labiate* and *labiate pallida*, and I am very thankful to Mr. Sander for rescuing this Orchid from oblivion, and dedicating it to such an assiduous grower of these plants. Now *C. Gaskelliana* appears to vary very much in the colour of its flowers; indeed, like all of this group, the different types are extremely variable, and now when we have got such a lot of grand-coloured *Cattleyas* to choose from, of course, a had coloured *Gaskelliana* does not count for much, but in the earlier days we were thankful for small mercies. This plant, I have been told by Mr. Sander, is one of the famous Roxburghian collections from the Venezuelan range of South America, and it flowers upon the young growth before that is finished from about now until the month of August, some varieties being exceedingly beautiful, but all of them lighter in colour than the old type of *labiate*, of which Mr. Sander had such a magnificent lot home during the last year or two. I advise "Mrs. D." to give her plants a short rest by keeping them comparatively dry, exposing



Daphne Blagayana.

second variety cropped up in the form called *oculata*, which is somewhat larger in size, pure white, having a very deep-purple mark in the throat, and this keeps a very rare plant in collections—indeed, so also does the variety *alba*, although its very high price has gone. MATT. BRAMBLE.

CATTLEYA GASKELLIANA.

The enquiries of "Mrs. Dunkley" are as to the growths of this form of the *C. labiate* group becoming weak and rotting? But she does not say what has been the treatment they have been

kept to, and after this set them growing again at once, which means you may get a growth out of them which will not flower this year, but which in all probability will be strong enough to produce a flowering growth another year if you scotch the use of the syringe. MATT. BRAMBLE.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruits and vegetables for drawing. The drawings so made will be engraved in the best manner, and will appear in due course in

INDOOR PLANTS.

3991.—**Plumbago capensis.**—Your plant will bloom in due course if treated liberally. It is probably root-bound, and must either be well fed or be repotted. The fertilizer you mention is an excellent one, and if used according to the directions will do the plant a lot of good. The season not being far advanced I should shift into a pot 2 inches larger, using good loam with some of the fertilizer added to it. This Plumbago being of very robust habit requires a lot of water when growing and coming into bloom. If fairly treated it is one of the most satisfactory plants an amateur can grow, yielding an abundance of blooms for cutting.—J. C., *Byfleet*.

4034.—**Plumbago alba.**—Try instead *Clematis lobata*, *Indivisa*, *Niphetos lloos*, *Lapageria alba*. If there is a cool, shady corner, and *Jasminum gracillimum*.—E. H.

— I should recommend *Abutilon* *Boule de Neige* to replace the Plumbago; it is much used for floral decoration, the petals being carefully turned back and the centre (in my opinion foolishly) picked out.—A. G. BUTLER.

— You cannot do better than substitute a White Rose for the Plumbago. Climbing *Niphetos* is the Rose you want; but in a year or two it will probably require a larger pot than the one you are using now. The White *Abutilon* makes a good climber, but the flowers do not last long when out.—J. C. C.

— Yes, the great drawback of the flowers of the Plumbago is their short life. They are very poor to cut, quickly withering, and not regaining much of their former freshness. But you might get a good plant of the *Lapageria alba*, which I should think would meet with your requirements. The flowers are waxy white, produced freely on the tender shoots, and are quite wreaths of bloom in themselves. It grows moderately fast when in a border, thoroughly well drained, and the soil a mixture of good peat and turfy loam, a few nodules of charcoal, and a sprinkling of sharp silver sand. The plant requires a considerable amount of water in summer, and it is most important to have the soil thoroughly well drained, otherwise it gets sour, and the roots become diseased. I suppose that few plants are grown more largely for cutting than this White *Lapageria*.—C. T.

— *Rhynchospermum jasminoides* is a very free-flowering, pretty, and fragrant climber with white blossoms, and succeeds well in a large pot, while the flowers last fairly well in a cut state. *Passiflora "Cucurbitaceae Elliot"* is a lovely thing, with pure silvery-white flowers, but these are, of course, very fugitive, like all the rest of the tribe. *Mandevilla suaveolens* generally thrives well in a cool-house, but this must be planted out in a well-made border in order to succeed.—B. C. R.

— *Swainea alba* is a much superior subject to the White Plumbago; the flowers are much more freely produced, and last much longer when cut. Beyond these advantages it gives so many more flowers during the winter, when Plumbagos are generally at rest. Abundance of water is required, and plenty of pot-room, or the foliage is liable to attacks of red-spider, which checks not only the growth, but limits the flower supply. If the pot can be stood on a border, and the roots allowed to grow through the pot into the soil so much the better. When this plant is wholly growing in a border it is apt to make too much growth at the expense of flowers. Syringe the foliage every evening as a preventive of red-spider.—S. P.

4001.—**Zonal Pelargoniums.**—If sufficient heat can be provided any varieties can be bloomed in the winter; but if not none will do any good. Some of the best for winter blooming are C. V. Raspaill, *Veranus*, Henry Jacoby, Queen of the Belgians, Mrs. Deane, *Aurora*, *Isabelle*. *Cannella* real manure is an excellent stimulant, and if given twice a week produces good trusses in abundance.—A. G. BUTLER.

Planting Gentiana verna.—Much has been written about this beautiful Gentian and the best mode of growing it, but one important fact I have not seen mentioned anywhere, and that is that when being planted it should have the soil around it pressed as hard and firm as it is possible to ram it with a blunt stick or hammer. After many failures I planted *G. verna* in this way. The soil around the plant is as hard as a throbbing floor, but the plant is evidently quite at home and has flowered most abundantly. By its side is a *Gentiana hawiana* planted in the very opposite manner in loose, spongy soil, with an abundant admixture of Sphagnum Moss in a flourishing condition. F.

PLANTING EXPOSED GROUND.

FROM experiments that have been made in many places throughout the country, it is now pretty conclusively settled that the Corsican Pine is a tree well suited for planting in cold and wind-swept regions. True, from its narrower spread of branches, it cannot compare with its nearly the Austrian (*P. anetrica*) in the amount of shelter it will afford; still, that it is equally hardy and suitable for exposed hilly ground is now well known. The very fact of its having a narrow spread of branches makes it particularly suitable for general forest planting, for, like the Larch, it seems able to grow and produce timber satisfactorily when but the top fourth of its stem is furnished with branches. Both the Corsican and Austrian Pines get the name of being had to transplant, and this is true to some extent, but not half so true as is generally stated. By lifting annually or every two years, when young and before being planted out permanently, the roots become thick and bushy, full of fibres and soil-retaining; but where judicious transplanting has for a time been neglected, there are usually but one or two large roots, and very few of the branching fibrous ones that render planting out a success. Taking everything into consideration the Corsican Pine, independent altogether of its value in a commercial sense, is a tree that is peculiarly suitable for planting on exposed ground, and may, with the Austrian, be successfully planted in the formation of woods at high altitudes, and where the ground is fully exposed to the worst winds of the particular district. The Scotch Fir (*P. sylvestris*), every mountaineer must know, is an excellent Conifer for planting at high altitudes and on poor rocky soil. Probably it ascends to a greater height in this country than any other species, while the fact of its being able to succeed in the poorest of soil is yet another and excellent recommendation. Even on gravel, and that of the unenviable "pan" class, it grows astonishingly, and may any day be noticed on some of the commons around London.

THE COMMON LARCH must not be forgotten in a choice of trees suitable for planting on the flank of the hills, but the fact of its being deciduous is rather against than in its favour. It gets heated badly about, and in the plantation to which I referred it certainly could not hold its own with either of the three Pines that have been spoken about. The branches on the worst side always become short and twisted and appear as if they had been nibbled off by sheep; but, for all that, it is an excellent tree for the purpose under consideration. The Larch is such a valuable forest tree, speaking economically, that we cannot do without it, for none other has yet stepped in to take its place, so that even if it will not succeed satisfactorily on the outside of an exposed plantation, yet inwards it is one of the best, and should be largely planted. By planting even a treble line of Austrian, Corsican, Scotch, and Mountain Pines, the amount of shelter afforded is just enough for the Larch, for then it will succeed, and if the soil is at all good, grow away rapidly. Next to the Pines mentioned one of the best trees I know of for planting on exposed ground is the American Winged Elm (*Ulmus alata*), or, at least, what is generally known under that name. All along the outskirts of a strip of woodland that many years ago was planted on one of the Welsh hills for shelter to the neighbouring sheep farms, this small-growing, wiry, tree has stood well, and clearly distinguished itself as a capital subject for planting where the winds blow hard and long. It is certainly a tree of no great pretensions, rarely rising more than 26 feet from the ground, and having thickly arranged branches that are furnished with the curious wing-like appendage, from which the name has doubtless been derived. Far and near, deep and shallow it sends out its roots, while the thick, corky bark of stem and branch seems as if purposely intended for protection.

SYCAMORES do unusually well, but they are hardly suitable for the more exposed ground, but form fine, sturdy specimens, and produce a lot of good timber when not directly exposed, or, in other words, where the first brunt of the storm has been faced by other more hardy species. Several of the Willows, and first-class trees for the exposed hillsides, good

examples of which may be seen away up in the mountains by the base of Snowden and around the beautiful lake of Gwynn and Eidwall. Then two at least of the Poplars, the Bird Cherry (*Cerasus Padus*), the Hornbeam, and the common Scotch Elm are all well able to hold their own on breezy ground at high altitudes. The Beech must not be despised, and asserts its own rights, as the grand old specimens on that Kottish peak of solid chalk, Knockholt, and which is visible for miles around, will at once prove to the sceptical. The Oak, although it gets twisted, stunted, and scarcely recognisable, is a good wind-resisting tree, and not one whit behind it is the common Alder. But about the Birch and Elder it is perhaps needless to speak, for everyone knows full well the friendly shelter afforded at meal-time by a clump of the former, while the victor to some of our wildest coasts, and where he can scarcely keep his feet, must admit that, though despised, rooted out and neglected, the common Elder is one of our most valuable shrub-like trees. A.

CELSIA CRETICA.

THIS charming and if not exactly "long lost" at any rate sadly neglected plant appears to be at last attracting some amount of attention, so that a few notes and hints on its culture may not be out of place. When it becomes thoroughly known I venture to say there will be scarcely a well-kept greenhouse or window that does not contain at least a plant of this graceful subject. Here, in Sussex, it is a favourite window plant with the cottagers, but though I have lived in several parts of the country, as well as in and near London, and always taken a great interest in this kind of thing, I had scarcely seen the plant until about two years ago. Then, although it had been grown in a few cottages for thirty or forty years, no one seemed to know what it was, but now I notice it is becoming much more common. It is a nearly hardy perennial, with comparatively few ovate leaves, thickly covered with small hairs or down. The flowers are borne in long, arching spikes, which even in quite small plants often reach a foot or even 18 inches in length, and the spikes are produced successively during the greater part of the spring, summer, and early autumn. After attaining a height of about 3 inches the young plants push up a first or central spike, and when this has flowered and died, or been cut away, others spring from its base, and others again follow these almost indefinitely. The flowers themselves, which are of a deep golden-yellow, with a curious central mass of purple and hairy anthers, are fine lobed, and almost flat. Individually they do not last long, which is a pity; but as they expand in succession from base to point of the spike, this remains effective for a considerable time. The plant, when in full bloom, emits a faint but very perceptible perfume, especially in the early mornings, which resembles the vanilla-like fragrance of some Orchids—*Onoclidium* in particular. This *Celsia* appears to thrive best in a rich, mellow soil, composed of fine loam, leaf-mould, a little very old manure, and some sand, and they like plenty of water while in full growth and bloom. They also enjoy a cool temperature, with shade from hot sun; and, in fact, succeed under much the same conditions and treatment as would suit an ordinary *Calceolaria*. They are easily raised from seed, and if this is sown early in the year the plants will produce the first single flower-spike in June or July, and others in August and September. They also do well planted out-of-doors during the summer. I have never been able to succeed in striking cuttings. B. C. R.

Carnation "Grsnadin."—I believe this to be the most reliable Carnation in cultivation. It is perfectly hardy and thoroughly fog and disease proof. The inclement weather that lays havoc with Carnations generally in low lying situations does not in the least affect *Grsnadin*. All other kinds I am obliged to shelter in winter, but this remains green as Grass when subjected to an ordeal that kills other so-called hardy varieties. It is remarkably showy and prolific, and produces a half a dozen two-year old plants will yield hundreds of blooms for cutting.—E. H. B.

FERNS.

POTTING FERNS.

Most kinds, both large and small growing varieties, will, before this, be throwing up their young fronds. To keep them in good condition should be the aim of the cultivator, whether it be in the case of large quantities or where a few only are grown. This desirable object may be facilitated in various ways, according to the kinds grown. Broadly speaking, Ferns are oftentimes far over-potted from some mistaken view or other of their requirements. I knew two growers of Ferns who used to keep their plants in what some would think a far too restricted condition at the root. Not so, however, for the plants were the picture of health. In one instance particularly the plants were in such small pots as to necessitate their being stood in pans similar to those used by some who force Strawberries. This was requisite to safeguard them against any oversight in watering. Some might urge that repotting would have been more desirable. That, however, would have meant increased vigour with more room required to grow them than could be conveniently spared under the circumstances. In the other instance the plants were apparently given the best of soil suited to each kind; this, combined with careful potting, had the desired results. These latter were usually in rather larger pots than the former, being more what might be termed half specimens, the plants themselves, the picture of health, being difficult to beat in competition when examples of much larger kinds were pitted against them. Those instances are cited to show, as many will no doubt have already gathered, that the overpotting of Ferns is a fallacy. This it truly is, done without doubt I do not for one moment dispute with good intentions, but, all the same, wrong in practice. For a time the plants may thrive well, and all seem to be going on as satisfactorily as one could desire, but the time comes when the soil gets into a sour and inert condition. This is not the result of the Ferns appropriating the nutriment in the soil nearly so much as it is of repeated waterings, which send the best of its properties away through the drainage hole instead of being assimilated by the plants through the roots. When a plant is potted before its proper time, the roots rush away again into the fresh soil a long time before they have withdrawn all the nutriment from their previous shift; this will tend possibly to greater vigour for a time, but decline comes all the sooner through the roots being spread over a greater space, thus not in many cases being able to absorb the properties of the soil whilst it is still in a fit condition. This

Vigorous growth for a time has to be supported, but when the season of rest (or partially so) comes round, then there is often a perceptible decline. The best plan to adopt with Ferns is to give moderate shifts only, and the better the soil, the better will be the ultimate results. Poor soil, to which some fertiliser has been added, may answer for a time and be an incentive to rapid growth, but when this is exhausted, then the plant quickly becomes impoverished unless it be repeatedly fed by some manurial agency. In the first case to which I alluded the grower used to water his Ferns with weak guano-water with the best results. Peruvian guano, when it can be had pure and unadulterated, is still an excellent manure for many pot plants. When Ferns are well potted and in a firm manner compared with soft-wooded plants in general, using good soil, the growth they make will be much more enduring. Thus treated, they can be watered far more liberally than when the soil is poor or has a tendency to be sour. I have noticed particularly when growing *Gymnogrammas* what an amount of water they will take when the soil is in good condition and, of course, full of roots. In the case of *Adiantums*, it is readily discernible whether the plants are being potted freely or left somewhat pot-bound by the size of the pinnae. For instance, take note of plants of *A. cuneatum*. When grown under what might be termed a generous treatment, that is, freely potted, the pinnae will be considerably larger, and, if they are also shaded, of a much deeper green. Such a growth is never of so lasting a character; it has a tendency to damp off if over-crowded, whilst if used in a cut state it will not last

nearly so long as well-hardened fronds from plants grown under less congenial conditions. Some Ferns, such as the *Davallias* and *Gleichenias*, for instance, are very shallow rooters, preferring to root near the surface. The creeping rhizomes of these Ferns root as they extend when they come into contact with the soil; hence shallow pans or pots drained at least half way up should be used for these and similar rooting kinds. It is not advisable to be led away with the idea that shifting a stock of Ferns is necessary more than once in a season; young quick-growing seedlings may, it is true, need the second shift, whilst, on the other hand, many Ferns with good management will stand over for two years. Even Tree-Ferns when grown on from small plants do not require such frequent repotting. Some Ferns, such, for instance, as the various forms of *Pteris cretica*, *P. serrulata*, and the smaller types of the *Aspleniums*, seem to be peculiarly adapted for cultivation in small pots. F.

THE LADY FERN (ATHYRIUM FILIX-FEMINA).

This is one of the most elegant of our native species, even in its normal condition. The Lady Fern when growing freely attains a height of some 4 feet, sometimes even more, the large,



The Lady Fern (*Athyrium filix-femina*).

finely-divided, feathery fronds being exceedingly beautiful. I cannot understand why this plant is not more grown in small suburban gardens, which sow remain bare and unsightly. Besides the normal form, as shown in the illustration, there are many varieties, a few of the best of which are named below, all of them exceedingly beautiful and deserving careful attention. It is not amongst the earliest kinds to put forth its fronds in spring. *A. filix-femina corymbiferum*: This is a hard-growing, handsome Fern, nearly of normal size, having the apex of the frond and each of the pinnae densely tasselled. It is one of the oldest recognised sports of this species, and up to the present it retains a first place amongst them. *A. filix-femina Clarissimum*: This is a very large form of great beauty; it is not crested in any way, but the pinnae are unusually long and the segments very finely out. It does not produce young plants readily. *A. filix-femina acrocladon*: Of this form there exist many sub-varieties, all of which are beautiful. The apex of the frond is more or less densely crested with a very finely divided mass of short Moss-like tufts. *A. filix-femina Kalothrix*: This is not a fern plant, but it is one of the very handsomest forms into which the species has crested,

and were it not known to be a seedling it might lay claim to specific origin. The fronds are of large size, and the divisions of each are as fine as hair, with a peculiar translucent lustre. It requires to be sheltered from rough winds to preserve its beauty. *A. filix-femina plumosum elegans* is as other fern of exceeding beauty, but not in any way crested. The fronds are large, much broader and longer is the pinnae than those of the type, and very elegantly divided. Every lover of Ferns should grow this variety. *A. filix-femina Victorie*: In the present plant we have one of the most extraordinary crested forms it is possible to conceive, and at the same time one of the most beautiful. The pinnae are reduced in width, so that no confusion can be detected; in fact, had the plant been grown by rule and compass, it could not have been more strictly symmetrical. The pinnae fork immediately upon the rachis, spread out, and each side pinna crosses the next one near the point, and the apex of each one has a small crest or tassel. The top of the frond has a large crest; the colour is deep-green. The plant under cultivation produces forms more or less true. Only one plant was found in a wild state in Scotland. Besides the above kinds there is an immense number of all sizes and density. Some are small kinds, heavily crested and much forked. The smaller kinds, which require an elevated situation on the rockwork, will thrive well in a Wardian case. W.

The White Lupine.—Few handsomer plants adorn the garden than the white variety of *Lupinus polyphyllus*. The type is well known, its stately spikes of blue flowers continuing to brighten the garden over a long season. It must be a poor soil or position that will not grow this stately plant, and when the white variety is seen in a bold mass it is a sheet of white. The foliage of the Perennial Lupine is elegant, but when the plant is in full bloom its beauty is eclipsed by the splendid spikes of white flowers. It may be grown in small as well as large gardens, and looks especially well when backed by an evergreen shrub to bring out the beauty and purity of the blossom. A good figure of it is given in *GARDENING* of June 10, p. 206.—V. C.

4007.—A plague of rats.—The best preventive of this serious trouble is to place chloride of lime in the haunts of the rats, as they so hate the pungent smell of this that they will decamp rather than endure it. The chloride of lime should be placed, in quantities of half a pound, under the boards, or in the drains in which the rats assemble. Probably, if the house be large and rambling, a considerable quantity may be necessary to drive them out; but they can thus be shut out of one part after another until their "castle" be known, when it might be worth while to open that part, and destroy them with dogs and ferrets, afterwards laying down plenty of chloride of lime (which is also a strong disinfectant in case of there being any dead rats about) before closing the place again. When once a large number of rats has taken possession of an old house, traps and cats are of little use, although keeping cats will usually prevent rats from returning to the house where they are.—I. L. R.

There are two or three ways of destroying rats, of which "R. W. F." may not know: 1. Traps if baited with Sunflower-seed are irresistible. This discovery was made by the keeper of some zoological gardens. Any trap which has caught a rat should be deodorised by putting it on a stove for a few hours, and on no account should it be touched with the bare hands while re-setting, as they will avoid a trap on scenting the human hand. 2. Poison should not be put down the holes, as so many people do. You should spread it on meat or bread, place it in the middle of the room with some saucers of water near, and sufficient hay or straw for the creatures to hide in, as the instinct of every animal is to crawl away to die in hiding. Strychnine or prussic acid are practically the quickest poisons, in which case soak the meat or bread in the poison. 3. Chloride of lime placed about the house near rat-holes or drains is a great deterrent, as rats abhor the sickly smell. *G. Potting Ferns*, and all seeds, if soaked in paraffin for twelve hours before planting, are protected by late N. J. A. W.

OUTDOOR PLANTS.

CATANANCHE CERULEA.

THESE charming plants, closely allied to the Lettuces family, are not nearly so often seen in gardens as might be expected, considering their showy flowers and striking habit of growth. The species figured in the accompanying cut is the most common, and although perennial in light soils, I am afraid it is at the best but short-lived, and in heavy soils at any rate gives most satisfaction as an annual or biennial. We have doubtless much to learn about the longevity of South European plants especially, and may often discard a good plant simply because it refuses to live more than a couple of years or so in our borders, when the same treatment afforded to annuals and biennials would enable us to indefinitely keep the particular species. The species in question is an excellent border plant; the everlasting-like flowers of an intense blue give it a decided character, and as it may be depended upon in a light sandy soil, it could readily be made a feature by being planted on the margins of the shrubberies or even naturalized in semi-wild places. There are a white and a bicolor form, and the three mixed together would be very effective. The stems rarely exceed 2 feet to 2½ feet high, the leaves narrow, lance-shaped, with a few small teeth on each side, and usually glaucous. The three forms are natives of Southern Europe, and were introduced as early as 1596. *C. lutea* is a hardy annual, and is similar to *C. cerulea* in every respect excepting its bright yellow flower-heads. It is a useful border plant, and makes showy patches when liberally treated. The seeds should be sown in the open border about the beginning of April, the seedlings being thinned out to the required distance, which should never be less than a foot.

THE LILY.

THE great family of Lilies reveals many charming things, from the snow-white Madonna flower, *Lilium candidum*, to the graceful *L. pardalinum* that sways gently in the breeze. It is impossible to go into lengthy details, but one general rule may be applied—that is, to have a loamy soil. Peat is not essential, and manure is positively injurious, unless well decayed and applied in the form of a top-dressing when signs are apparent of need of some stimulatory influence. The bolder types, such as *L. longiflorum*, *L. candidum*, *L. chalcedonicum*, the Scarlet Lily, and the brave Tiger Lilies will fare well on ordinary garden ground, if it is not too heavy, richer, more substantial diet being given to *L. anatum*, *L. martagon*, and *L. Humboldtii*. We are not, however, supposing that every kind of Lily will find a place in the amateur garden. A few of the less rare species and varieties, will be amply sufficient to fill the *parterre* with colour and fragrance. Large gardens usually have Rhododendron beds, and it is in these that Lilies do well. Visitors to the Royal Gardens, Kew, in the month of August and throughout the autumn will see a Lily show, the Auratums sending up their burden of flowers above the Rhododendrons, and it is precisely for this reason that a kind of brotherhood exists between the two very opposite families that such success is achieved by the combination. Peat and loam suit both the shrub and the flower, and the bronchos act as a shelter to the rising Lily shoots in spring, which when exposed are apt to suffer severely from sharp frosts and cold winds. The propagation of Lilies is accomplished by either division, or rather moving the offset bulbs from the main bulb, and bulbs in the axils of the leaves. The family of Lilies presents diverse complexions in flower, leaf, and habit. *L. pardalinum* runs up over 6 feet in height; but some of the varieties of *L. davuricum* grow only a few inches. A useful selection for the garden would be *L. bulbiferum*, *umbellatum* (scarlet-crimson, in which there is a shading of yellow), the Scarlet Turk's Cap Lily, *L. chalcedonicum* (rich scarlet, very showy in cottage gardens in July), the common Orange Lily, *L. croceum*, *L. davuricum* (rich crimson, delightful in the shrubby border), *L. martagon*, a favourite with all who care for Lilies, *L. tigrinum*, the gorgeous Tiger Lily, and *L. speciosum*, of which there is a very charming white variety, *L. Thunbergianum*, and its long train of dwarf forms, and *L.*

auratum, the king of Lilies, may be grown with freedom, the last mentioned in particular. It is one of the most precious plants from Japan, and the enormous sale of bulbs each year in London is sufficient vindication of its popularity and splendour. The Lilies are now blooming freely, and those who wish for a good selection cannot do better than select from those named. Bold clumps of the flowers in the garden in the summer months are remarkably attractive, and to get a good effect there must



Catananche cerulea.

be a mass of colour. Single spikes are not showy, especially of the quickly coloured kinds.

C. T.

4033.—Sempervivum tabulaeforme.

—This is a tender plant of a singular form of growth, as the name indicates; but when it is in flower it is not to be despised, as the flower-stem rises from the centre, and if the plant is well grown it assumes a perfect pyramidal form that is very pleasing, as there is a certain degree of gracefulness about it that one would not expect to see in such a pancake form of plant before it commences to flower. Seeing that you have so many plants in one pot, you had better plant them out in the garden at once. It is possible that one or more of them may flower this year; but as they are so poorly grown you will not get a correct idea of its beauty as a flowering plant. Any that do not flower you may take up again in the autumn. I grew hundreds of these plants about fifteen years ago to associate with other succulents, and, if I remember right, the plants flower when they are three years old, and then die. When the seed is properly matured it grows freely, and the second year the plants will be as large as a cheese-plate, and quite as flat.—J. C. C.

— This may be planted out for the summer, and in a bed of succulents will be useful. It may be lifted for the winter and kept moderately dry. It is used for bedding in the park, and is best adapted for such a purpose.—C. T.

4038.—White-flowered plants for cutting.—You do not say whether you require indoor or hardy flowers; if indoor, and you can force them, nothing is better than *Spiraea japonica*, White Polargonium, *Lapageria alba*, a fine massy white flower for cutting; *Bouvardias*, as Alfred Neuner, double white, *Vreolandi*, or *Humboldtii*, corymbiflora *Camellia alba plena*, *Calla ethiopica*, *Staphanotis floribunda*, and *Carex* of the tree class, as *La Belle*, very pure, *Mlle. Carlé*, or the *Malmaison*. But this is only a small selection of white flowers that may be got in the first half of the year. As, however, you mention Pinks, possibly you require hardy plants, if so, you might select White Pyrethrum, which could be in bloom just before the Pinks, and they last well when cut. Both single and double kinds could be chosen. A very lovely flower for cutting early in the summer is the White Snapdragon, known botanically as the *Antirrhinum*. It is as easy to grow as any of its kinds, and the flowers are pure-white. You should certainly make a good note of this. Then you could have the white variety of *Campanula persicifolia*, a very handsome and easily grown plant which has been recently commented upon

in GARDENING. There are many very beautiful hardy plants with white flowers suitable for cutting. The *Achilleas* are a host in themselves; they bloom in the summer months. *A. mongolica*, *A. The Pearl*, a lovely flower quite double and very pure, *A. ptarmica fl.-pl.*, are all hardy and vigorous plants, well adapted to be grown freely for cutting. Than for the autumn months nothing excels *Anemone japonica alba*, a very vigorous plant, strong in growth, and if given a top-dressing of well-decayed manure each year, the display of flowers will be more profuse. A good mass will produce a large quantity. Then you might have the white flowered *Aquilegia*, a very fine thing that is in beauty before the Pinks, and amongst the *Campanulas* or Bell-flowers there is a host of subjects available; the white Canterbury Bells being of note. Then there is a variety of *Chrysanthemum leucanthemum* named *simplex*, which is very pretty, and for the late spring *Trillium grandiflorum*, the Wood Lily, a very distinct and beautiful thing, the flowers pure white, and in a setting of deep-green leaves. The Candytufts have in many cases white flowers, but they are not so well adapted for cutting as many of the kinds mentioned above; whilst you may also select *Lethyrus albus*, *Lupinus polyphyllus albus* (the White Perennial Lupine), *Malva moschata alba* (the White Mallow), White Daffodils, particular varieties of *Narcissus poeticus* for early spring, and the double Fair Maids of France. Other things might be mentioned, but those are all of merit, and indicate the large selection of white-flowered hardy perennials available.—C. T.

— After the bulbs are over, then comes a sort of break among the white flowers useful for cutting till the Pink Roses, &c., comes in. White flowers there are, of course, but all have not the same value. White Forget-me-nots, *Lupinus polyphyllus alba*, White Pyrethrum, including *Mont Blanc*, White Herbaceous Pinks, *Clematis montana*, Double White Rockets, and the Evergreen Candytufts are all more or less useful. *Ranunculus aconitifolius plena* is a good thing for cutting; and I have had the white variety of *Clarkia pulchella* very early and useful from autumn-sown plants. White Brompton Stocks are nice for cutting.—E. H.

— Anemones of sorts would be useful, especially the white varieties of *A. coronaria*, *A. alpina*, &c. Several of the white-flowered *Narcissus* should also be grown in quantity, such as *N. poeticus*, *N. p. ornatus*, and the fine old double white kind. White *Myosotis* (Forget-me-not) is also nice, and *Campanula persicifolia alba plena* is a lovely power for cutting that, if planted in a warm position, will often flower before the bulk of the Pinks.—B. C. R.

4035.—Lilies and Irises.—You can make your border a picture of colour with Irises and bulbs. As to the first, it depends upon what you are prepared to spend, as the Iris family is a large one and embraces expensive and cheap kinds. The following, however, are beautiful and not extravagant. For blooming quite early in the spring you have the violet-scented *Iris reticulata*, a very beautiful flower, deep-blue in colour, and with a strong fragrance of Violets, and amongst the German Irises there is a wealth of beauty, a selection of the best kinds being given quite recently in GARDENING. I need not therefore repeat this selection, but everyone mentioned is of merit. Keep to this selection, otherwise you will get a lot of poor coloured varieties that will disappoint. I should leave such ones as the *Onocycelus* alone. They are not for beginners, and this class include the curious Mourning Iris, *I. pincea*, yellow, very rich and pretty; the late growing *I. ochroleuca*, the flowers white and yellow; *I. sibirica*, the Siberian Iris, a graceful-leaved species with blue flowers, also its variety *alba*, white, and the English and Spanish Irises may be mentioned. Both these sections give a wealth of colour, the flowers varying from white to deepest purple. The latter blooms a week or two before the former and thus provides a succession. The lovely *Kiemperi* Iris requires more moisture than I should think you could afford to give it. It is very charming in July when it flowers at the margin of winter. At the foot of the wall plant the quite late autumn or early winter-flowered *IRIS* which has foliage not unlike that of a Beet in miniature.

Of course, there are many more hardy than these, but you give no particulars as to the size of the border, or the number of lilies you require. The early-flowering species or varieties are many in number, but some are expensive. I have mentioned the more popular kinds, and except *L. alata*, and *L. reticulata*, they bloom in early summer, the great season for this family. The lilies that I should recommend would be the White *L. caedidum* that blooms in June. It has unfortunately been much subject to an invidious disease, but still you should try it. Its white fragrant flowers are very precious. *L. bulbiferum*, the well known *L. croceum*, the early June-flowering *L. umbellatum*, a showy, vigorous kind; *L. elegans* in variety, particularly the quite dwarf kinds, the flowers varying in colour; the Scarlet Martagon, *L. chalcedonicum*, *L. Martagon*, which has, however, a too powerful scent—but perhaps you will not mind the unpleasant odour; *L. auratum*, very beautiful in August, and too well known to describe; *L. speciosum* or *L. laeifolium*, as it is sometimes called, blooming in late summer and early autumn; the Buff Lily (*L. testaceum*), and the Tiger Lily (*L. tigrinum*), in variety, a superb flower for colour. This will form a very good selection to commence with, as of the species mentioned there are many varieties.—C. T.

— *L. caedidum*, *L. Martagon*, and *L. tigrinum*, and the varieties of these species are all good and are sure to do well. If I were only just beginning to grow lilies, I should get all the varieties of the above three species, and grow them well first, and gradually introduce others. These are most of them cheap and hardy, and might, for the most part, be planted in the town garden. For lilies I should recommend the English and the German. The last named are evergreen, and both families are remarkably pretty and very cheap.—E. H.

4032.—Cut-flowers.—Pyrethrums (single and double), *Asterium*, and *Gedelia* should supply your needs. Although *Gedelia* has a flimsy appearance, and when the plant shuts up every evening, it is one of the best flowers in existence for cutting. The fact of separating it from its parent stem seems to paralyse it, so that it forgets to close up at night, and its decay seems to be arrested; indeed, I have known it to stand in water for a fortnight before it faded.—A. G. BUTLER.

—The variety of Yarrow (*Achillea millefolium*) named roseum is of the colour suggested by the name; then if you have a warm, sunny, sheltered border, such as skirting a wall of a plant-house, you might have the Belladonna Lily (*Ameryllis Belladonna*), which has rose flowers, also *Anemone japonicum*, not alba, the type bearing rose flowers, *A. fulgens*, well known for its bright-crimson colour, the crimson-flowered Snapdragon, Sweet William, Thrift or *Armeria*, excellent as an edging, and may be cut, Michaelmas Daisies of this colour; for the autumn, Indian Pink, *Carex*, of these shades of colour, *Dielytra spectabilis*, or the "Lyra flower," Foxglove, Scarlet Lychnis, *Proseis*, particularly the old double crimson and the blush varieties, *Pentstemon* in variety (there are several that have flowers of this shade), *Phloxes*, herbaceous varieties in particular, *Pyrethrums*, *Schizostylis coccinea*, *Spiraea palmata*, the flowers rich-crimson, and, of course, various hardy bulbs. All the above named plants are quite hardy, not difficult to grow, and bear flowers in one or other variety of the shades of colour that you require.—C. T.

—Roses of several sections and many varieties, if planted in warm and sheltered positions, on sunny walls, &c., will generally commence flowering early in June. *Aconitum fulgens* and several of the varieties of *A. coronarium* will also be found extremely useful. *Dielytra spectabilis* is very graceful, and lasts fairly well when cut and placed in water, and a shrub that everyone ought to grow for cutting from is the exquisite *Weigela rosea*.—E. C. R.

—Pyrethrums and Paeonies are among the most beautiful things for June cutting. To these may be added Red Pinks in variety, Oriental and other Poppies, but this season the Oriental Poppies went off very quick, but the same hot summer which hurried those away brought on the Shirley Poppies. Red Lothian or Brompton Stocks will be useful.—E. H.

THE HARDY ANTHEMISES.

ALTHOUGH a large and comparatively showy genus, very few of the species find their way into cultivation, and of these few perhaps the most popular is the species in the accompanying cut. Many of the species are free blooming and showy, and will be found very useful where flowers of the Marguerite class are in demand. Only two of the alpine species known to us are to be found in gardens. *A. Aizoon*, with its silvery leaves and white starry flowers, is fairly well known, but *A. Biebersteinii*, a grand species from the Caucasus, is rare, and although one of the most beautiful early summer rock plants, it does not seem to be very common. They are both easily managed compared with many of these plants from high altitudes, requiring a warm, sunny position, and a deep, light, rich soil. They may be increased by seeds, cuttings, or division—the former as soon as gathered, cuttings in July and August, and division in early spring.

A. AIZOON.—A charming dwarf growing rock plant, rarely exceeding 2 inches to 3 inches in height, has a compact or tufted habit, the loose rosettes of long silvery leaves looking well in winter as well as summer. The flowers are produced in abundance during summer, white, and somewhat resembling a large Daisy. It is a native of Northern Greece.

A. BEBERSTEINI.—A rare species, and from specimens growing in the rock garden at Kew, one to be noted and eagerly sought after. It forms dense mats or carpets of short silvery leaves, narrow, and more or less deeply cut. The flower-stems, which are numerous, are about 9 inches high, each bearing a very large golden-yellow Marguerite flower, almost as showy as that of the fine *Arnica montana*. It flowers from April to July, and is a native of the Caucasus.

A. TINCTORIA is of an entirely different



OUR READERS' ILLUSTRATIONS: The Yellow-flowered Chamaemelum (*Anthemis tinctoria*). Engraved for GARDENING ILLUSTRATED from a photograph sent by Miss Wolley Dod, Edge Hall, Malpas, Cheshire.

character. It may be classed as a herbaceous perennial, and when done well is one of the most beautiful objects in the autumn garden. It is so hardy and requires so little attention that large groups in the wood or wild garden would soon increase and make a grand show. Its compact and dense habit would keep the undergrowth from interfering with it in any way. As a border plant, or even in beds, it has few equals. Its bushy habit, fleshy cut, fern-like, dark green foliage, and abundance of bright yellow flowers (as shown in cut) make it a very attractive and beautiful object. It flowers all

through the autumn months, and is a native of Europe.

Others are *A. Kitchellii*, *A. nobilis*, with white flowers, *A. arvensis*, &c. D.

A note on Hollyhocks.—We welcome back to life again the stately Hollyhock, almost lost to us by the visitation of disease, a kind of fungus, that for a time banished its presence from English gardens. Years ago, before the plague made its appearance on English soil, the Hollyhock was grown and exhibited in all parts of the British Isles, but the cloud of disease over-shadowed its stately spikes, killed outright many of the old varieties, and threatened to exterminate every vestige of Hollyhock from our gardens. It seems, however, to have outlived this remarkable plague, and once again nods over the weeden fence in the cottage garden, and lends dignity to the larger domain. One reason of the peculiar severity of this disease was that the plant, through hard propagation, had become in a sense weakened. It was the fashion to strike the cuttings in a high temperature to get a stock quickly; but the effect of this was to weaken the constitution of the plant, and ill fit it for such a severe attack of a virulent disease. The secret of success in the culture of the Hollyhock is to grow the plants well, providing them with a very rich soil, which should be deeply dug, and incorporated with it plenty of manure, whilst in the case of plants whose spikes are desired for exhibition, weak liquid manure water occasionally will promote the development of splendid blossoms. Stagnant ground in winter is fatal; but it should not be too dry in the summer months, whilst division of the roots is a ready way to gain an increase of stock. Besides division, there are two other ways of propagation—by seeds and by cuttings. These may be taken in spring, placed in pots filled with good soil, and given slight heat, such as that supplied by a hot-bed. When rooted, pot them off, and transfer to a cold frame before planting them out in the garden. If the plants are propagated in the summer, keep them in a cold frame during the winter, and plant out in the following spring. They will bloom well the same year. A good time to sow seeds is as soon as they are ripe, which will be in the autumn, treating them similar to half-hardy annuals, and giving them a little heat. Let off the seedlings in due course. Keep them during the winter in a frame, and plant out in the ensuing spring. When in the beds during the winter they are, if very young, likely to succumb to the trials and privations of English weather in that capricious season. Even when cutting down in the autumn the old stems, after the festival of flowers has been held, leave them of moderate length, so as to preserve the crown as much as possible from the influence of damp.—V. C.

Sweet Peas.—This lovely flower has been increased in interest of late years by the introduction of several very beautiful varieties, that give considerable range in colour, and have lost none of the good qualities, the sweet fragrance, and freedom of the old kinds. The Sweet Pea is not rightly grown, as a rule; it is not used in the best possible way. A few bold clumps are very pretty, but we want something more from such climbers. I lately saw quite a bank of them—a screen, shutting out an objectionable feature in the garden, and the plants fulfilled the object in view. They grow easily from seed, and bloom freely and continuously if not allowed to form seed. Masses of them climbing over twiggy sticks in the border, or running over a hedge, are very pretty, especially when a good selection of varieties is made; and all know the beauty of the tenderly coloured, fragrant flowers when arranged in a bowl or vase in the house. The "invincible" kinds are very pleasing, the scarlet, carmine, and so forth, but a few mixed varieties may be mentioned. Apple Blossom is one of the sweetest; its large, head-some flowers are white, with the wings delicate-rose—a charming contrast. It may be used for posies for its soft colouring. Butterby is another gem, the flowers white and lavender. Cardinal, one of the most recent acquisitions, is brilliant scarlet. And to these may be added Beatrice (rose-crimine), Boreator (rich-maroon), Imperial Blue (a good, distinct, and net dingy colour), and Princess of Wales (delicate blue and white).—V. C.

HOUSE & WINDOW GARDENING.

BRITISH FERNS FOR A ROOM.

THERE are many sitting-rooms with a rather sunless aspect, or in which the blinds are kept down a good deal, where flowering plants will not thrive, and yet some graceful greenery is needed to set off the cut blossoms in vase or glass. For this situation nothing is better than our own British Ferns, many of which are extremely handsome, and now that they have received a little of the attention they deserve there are many very desirable new varieties (some crested and with divided fronds) which make charming plants for a room, while they are quite hardy, and are much stronger in constitution than their foreign cousins. They can be grown to perfection in an area, and lifted into the sitting-room when in full beauty, for they need a cool, damp place without draughts when they are unfolding their lovely fronds. If an area be not available a flat bath or tray, with a layer of damp Moss in it, or Cocoa-nut-fibre, should be placed in a bath-room, or any shaded place, in which the pots may stand at night, surrounded by the moist air arising from the Moss or fibre, which should always be kept damp, and free from the dust and draughts of the sitting-room when it undergoes in the morning the necessary process of brushing and airing. Several beautiful cultivated varieties of the common Hart's-tongue Fern (*Scopolopodium vulgare*) are now to be had, and these are especially valuable, being evergreen, so that they are available for room decoration during the winter months. Another very elegant evergreen Fern is *Asplenium Adiantum-nigrum* (the Devonshire Black-stemmed Fern); it is smaller than the *Scopolopodiums*, but has remarkably pretty fronds, much serrated, and of a brilliant shining-green tint, set off by its dark stems. For larger specimens during summer there are few more beautiful Ferns than *Athyrium Flix-femina* (the Lady Fern), also varieties of the *Laetrasia* family, remarkably elegant, and growing to a considerable size. All Ferns do best in a mixture of peat (not too finely divided) and leaf-mould, with silver sand enough to make the compost light, and a slight admixture of charcoal (burnt wood-ash) is very beneficial, and the plants must not be very tightly potted. In potting Ferns it is necessary to give plenty of drainage, and this should be covered with a little Moss, dipped in soot, to keep out insects, and prevent the drainage from becoming stagnant. Ferns after being potted often lose their fronds, and look very wretched for some weeks, but this need not discourage their owner, as they are only untidy for a time, when, if they have been kept in a damp, cool place, they will throw out fine new fronds, and take thoroughly well to their new quarters. Plenty of water should be applied to them, and if grown out-of-doors the pots should stand on fine ashes, which can be kept in a damp state, to supply the surrounding moisture which Ferns need. I. L. R.

ZEA JAPONICA VARIEGATA (JAPANESE MAIZE) FOR A ROOM.

ONE of the easiest, and at the same time most satisfactory plants to grow in a window (as a change from the ordinary run of room-plants), is this elegant Japanese Maize, with its graceful outline, giving something of the effect of a fountain in shape. The seeds germinate quickly and easily in warm weather, especially if covered with a bell-glass or tumbler until they are an inch or two high, when the glass should be gradually raised, and may soon be dispensed with altogether. The easiest plan for an amateur is to put one good firm seed into each small pot of sandy soil, and put the little plants on as they require it, never allowing them to become pot-bound. They grow so fast, and are so pretty from their earliest stages, that they are always ornamental, but when they reach their full height of 3 feet or 4 feet, and are crowned with their graceful plumes of blossom, the effect is remarkably elegant, and they stand well in a window (on the floor), or in the summer fireplaces, as a background for flowering plants and Ferns. They are also very effective in a balcony or verandah, but must be protected from very strong winds, which sometimes break them down. Good rich soil is necessary for the Japanese Maize (after the first

stage of growth), and they enjoy a rich mulch of compost laid over the surface of the soil to nourish their surface-roots. Plenty of water, too, is needed for their nourishment, and they must never be allowed to become dust-dry. Soot-water (easily made by brushing down some soot from the chimney, and tying it securely into a hit of coarse canvas, which should be deposited in a pan of soft-water), should be given them once or twice a week in a thin and clear state, the water surrounding the bag of soot alone being used, when more water can be added while soot remains in the bag, giving it an occasional stir with a stick. I. L. R.

3991.—**Creepers for a wall and plants for boxes.**—The best creeper for a north-east aspect are the *Oleiro de Dijon* Rose, *Clematis montana*, with white blossoms, flowering early in spring; *Ampelopsis Veitchi*, with magnificent autumn foliage; the winter-flowering *Yellow Jasmine* (*Jasminum nudiflorum*), and various handsome kinds of Ivy. For the north-west a more delicate set of creepers may be selected if the situation be a sheltered one. William Allen Richardson Rose or the Red Glory (*Marie Henriette*) may be tried, with the larger-flowered varieties of *Clematis* (C. Jackman and many others), *White Jasmine*, *French Honeysuckle*, *Virginian Creeper*, and a *Banksian* Rose. But if the aspect be more northerly than westerly, the latter will not thrive; it also requires shelter from high winds. For window-boxes at the same aspects many plants may be selected; in fact, few will not thrive at one or the other. Tuberous *Begonias* well hardened off will do well with the morning sun only of the north-east aspect, and they make admirable plants for a box if the drooping, neat-habited double varieties are grown. The trailers in front of them may be either *Blue* and *White Lobelia*, used alternately, or *Nierembergia gracilis*, with the rich-bronze lace of *Saxifraga sarmentosa* alternating with its delicate masses of bloom. *Tropaeolum canariense* (Canary-flower) makes a charming creeper for the ends of boxes, being easily trained on string, with a few stout nails, to form an arch over the window. It will grow well in a north-east aspect, either for boxes or walls, and is very useful to cover bare walls quickly, though it only lasts till the frosts come in autumn. For the north-western boxes Ivy-leaved *Polargoniums* (pink and white or carmine and white) may be grown, which will trail down over the box in great beauty if strong plants are selected; or *Calceolarias*, *Zonal Polargoniums* ("Caraniums"), *Lobelias*, *Petunias*, and *Marguerites* will all do well here, although they may not bring quite such a profusion of flowers as in a sunnier aspect. Much depends, however, on the soil provided for them, and the daily care they receive. Plants in boxes need plenty of nourishment, and must have a good compost to start with, and the box should be drained with crocks and ashes, and not overfilled, so as to allow room for a plentiful supply of water, which will be daily needed. Most plants in boxes are more or less starved; they need much more moisture in that exposed position (crowded together as they must be for the sake of effect) than when they are in separate pots or in the open ground, and they should be syringed or watered with a rose every evening during dry weather. A top-dressing of rich compost laid over the surface soil once or twice during the summer will help them much, and liquid-manure in a very thin, clear state will suit them once a week. Soot-water (easily made by tying up a little chimney-soot in a coarse canvas bag, and placing it in a pan of water) is one of the best of liquid-manures where the plants grow in or near a dwelling-room, as it has no impure odour, and is most health-giving to the plants. If it is not possible to give all this attention to the plants, very pretty and cheap arrangements may be made by growing in the boxes a mass of the common *Nasturtium*, which does best in poor soil, and is hardy in constitution, so far as the question of constant watering is concerned. The Dwarf *Tropaeolum*, with flame-coloured flowers and deep bronze foliage, makes a handsome variety, and if well selected the result is very good. An edging of the new Hybrid *Mimulus* tones well with *Tropaeolums*, and this will grow in a very unpleasing aspect.—I. L. R.

3992.—**Early Fuchsias for window culture.**—Fuchsias will succeed in a window

through the summer if kept carefully watered, and not exposed to cold draughts. A very good variety for this purpose is *Earl of Beaconsfield*, which has very bright, long-tubed flowers. From experience I have found this very free and strong in growth. One of the best is *Sun Ray*, which has very brightly variegated leafage, keeps its colour well, and is not "spotty." A useful double kind is *Miss Lucy Finnie*, which is very free, the flowers quite double, yet not ungainly or grotesque, and pure-white, the corolla and tube rod. *Rose of Castilla* is a good kind, the flowers with white sepals and petals are purple-coloured corolla. Try *Ma. O!* and *Mrs. Rundell* are also worth notice.—C. T.

—*Mrs. Merball* (light), *Sourciry* (dark), and *Rose of Castilla* (purple and white), are, I should say, three of the earliest-flowering Fuchsias in cultivation. Of the last-named the improved form is superior to the old type. *Lady Theobald* is also early, and a very free and elegant variety.—B. C. H.

FRUIT.

EARLY CHERRIES.

CHERRIES are not grown so much as standards and pyramids in gardens as formerly, owing to various causes. Of late years, choice varieties have suffered badly from canker, and as the tree flowers so early the bloom is frequently injured by frosts, so that a poor crop is the result, while birds in most gardens are so troublesome, that only under the most favourable circumstances can a crop be secured. In orchards with a quantity of trees the last named difficulty can be minimized by earing, but does not pay with a few isolated trees, so that there is no better plan than wall culture, as the trees can be protected from frost and from birds by netting. One great advantage with wall trees is the long time the fruit will hang without shrivelling if the trees are in a healthy condition, with ample foliage and kept clear of black-fly, which is a great pest, and attacks most Cherries on walls. Unless stringent measures be taken in time, the whole crop is disfigured and the trees crippled for the following season. By planting Cherries in different positions a supply of fruit can be kept up for a considerable period. The earlier kinds, when planted on a warm south wall, will give nice dishes in June. One of the best is *Early Rivers*, a large shining black handsome Cherry (indeed, one of the best of all the black kinds) of rich flavour, with a great quantity of flesh and but little stone. It is equally good indoors or out, and the tree grows vigorously, rarely failing to bear a heavy crop. It is a seedling from the *Early Purple Gean*, a good old variety. The fruit of the *Early* (lean is richly flavoured, but the tree is very delicate and does not do well in many gardens. The *Early Frogmore* *Bigarreau* is another valuable wall fruit that can be relied upon, and though classed as a second early kind, with ma on a warm wall it ripens during the second week in June in a good season. The tree is a vigorous grower, of good constitution, and an abundant bearer, and if only two or three varieties of Cherries are grown this one should find a place. It does not canker so badly as some kinds, and keeps well if there is not too much moisture at the roots after the fruit is ripe. *Governor Wood* is also a favourite variety. It is a large pale-red fruit, richly flavoured. It is a useful variety for

WALL CULTURE, and equally good for pot or indoor culture. This last named is not quite so hardy as others, and to do it well it must have a warm wall, as in cold districts I have found it gum badly. On my light soil in a sheltered corner it crops heavily and makes plenty of clean wood. *Belle d'Orleans* is an early rich fruit of medium size. It comes into use early in June, but I prefer *Early Rivers* to this variety. *Early Lyons* is also superior, and a free grower and heavy cropper. *Bigarreau*, commonly called *Amber Heart*, is a sterling variety, and one of the best wall Cherries grown; my trees are old, and bear heavy crops of fruit of rich flavour. This is grown in quantity in Kent and other counties as a standard for orchard culture. The fruit on a south wall is large, red and yellow in colour. The tree is very hardy and vigorous and a great cropper. Though one of our oldest and best-known Cherries, it is worth wall space in every garden. This is a good variety to plant on a north wall, as it gives a later crop and is a free grower on that aspect. *May Duke* does equally well on a

north aspect, and should be included in the list of good early kinds. Duchesse de Pallau, a large dark-red kind with a brisk flavour, is a good north wall variety to form a succession to earlier kinds. Bigarreau Banmann's May and Belle de Choisy are early kinds, but I do not think they are so good for general cropping as those more fully described. For later purposes we have a wider selection of excellent kinds. The great drawback with these fruits is that the choicer early thin-skinned varieties crack badly in wet seasons. If the heavy rains can be thrown off them when fully ripe they last in condition much longer. On walls this is more readily done. I use the Vine-border shutters or corrugated zinc cover for the purpose. In dry seasons when the trees are swelling their fruit, moisture is equally necessary, or the fruit fail to swell and are soon attacked by black-fly. A good mulch early in May of decayed cow-manure greatly assists in the swelling of the fruit on light gravelly soils, as the trees do not thrive long in such positions without good feeding. With the roots in a good depth of loam less manure is required, but drainage is necessary, and in all cases the roots of Cherries should be kept as much on the surface as possible, and be encouraged to come to the top by feeding with liquid and top-dressing. When this is seen to there will be less loss of trees from canker and gumming, a freer growth being secured if due attention is paid to summer pinching of the shoots and extension of the main branches. G.

LAYERING STRAWBERRIES.

THE preparation of a stock of plants for growing in pots next year, or for making new plantations in August or September, should be no longer neglected. Where so many persons fail in growing Strawberries in pots is by making too late a start in securing the runners. It is not possible for late plants to make vigorous crowns and mature them afterwards. It is the same with plants out-of-doors. Those planted before the end of September will, if strong at that time, give a fair crop of fruit the following year, but those planted during the winter or spring will not produce any the first season. Plants in the garden that are allowed to fruit do not give early runners in quantity. My plan is to put out a few plants of the sorts required at the end of September when sufficient have been obtained for pots and outdoor supply, especially for giving an early and full crop of runners. I choose a position just within a Box-edging of one of the fruit borders, Gooseberries for instance. Here the runners are easily layered into pots and are convenient for watering; the soil is not carried off the quarters on to the paths as in the case of layering between the ordinary rows. I plant these runners 10 inches apart and 8 inches from the Box. The plants are not allowed to fruit, but are induced to throw out early runners. Fill to within half an inch a sufficient number of 3 1/2-inch pots, with loam two parts, and partly decayed horse-manure one part. Make the soil firm in the pot, placing but one crook at the bottom, merely to retain a free water passage. Plunge the pots up to their rims in the ground near the runners. Fasten one runner on the top of the soil in the pots with a small peg thrust into the soil, or by laying a stone on the runner immediately behind the leaves. If there are plenty of these early plants, without requiring to take a second on the same runner, cut off the runner directly beyond the leaves to induce all the strength to enter into the one plant on each runner. If more are required, as many as half-a-dozen can sometimes be obtained from one, so freely do they branch from strong and early runners. The soil in the pots must be kept moist to induce roots to form quickly in the soil. When the pots are nearly full of roots, sever the plants from the parent, and either plant out in their permanent quarters, or place them in their fruiting-pots if required for that purpose. It is a waste of time to allow the plants to wait longer in the small pots after they are well supplied with roots. An early start in the ground or in the fruiting-pots means a lot towards obtaining success the next season. S. P.

A good Gooseberry.—One of the best Gooseberries is Roseberry, a little green kind, very sweet, prolific, and a splendid dessert fruit

when ripe, whilst it makes good pies. I saw lately some bushes of it perfectly laden, and the flavour of the fruit, whilst sweet, is refreshing and not insipid. The old Warrington is another good kind, also the Champagne, and such sorts as these are far better than the big, watery, coarse fruits that are often seen at exhibitions. These are of no use for the table, although they may be thought much of for their size. One needs to discriminate carefully in the selection of all fruits, as the lists are filled with kinds that are not worth ground. Rosebery is, I believe, not a common kind, but it is worth a place in the gardens of all who want good table fruits.—C. T.

THE LARGER APPLES.

THESE form a considerable class of themselves, but by far the larger number of them belong to the cooking section. This is, in fact, as it should be, for nothing beyond a medium-sized fruit is desirable for the dessert. The larger Apples are most useful in their respective seasons, either for baking whole or for the well-known dumplings. Apples of large size (or rather under) are not so much wasted in paring, relatively speaking, as the smaller ones; hence



Apple "Warner's King."

they are in that respect rather desirable than otherwise. When speaking of "larger" Apples I do not allude to those of abnormal size, brought about by other than ordinary methods of cultivation. These may in their way be all very well, and as specimens of high-class cultivation reflect great credit upon the growers of such, but these fruits of extra size will not, when extra attention in labour is considered, proportionately recompense the cultivator. Those Apples which attain to a large size without more than ordinary attention are certainly most desirable, when the sorts are of a relatively good constitution, and at the same time reliable croppers. Of such is the Warner's King, otherwise known under the synonyms of D. T. Fish and Nelson's Glory, well illustrated in the accompanying engraving. This Apple is in good condition for use from October to January. When generally shown in October at the autumn fruit shows, it is of a fresh green colour, but a few weeks later on the fruit changes to a rich-yellow shade. The tree is a vigorous grower and a good bearer, being suited to either pyramid or standard culture, and is less liable to disease than some kinds. Belonging to the same category is Golden Noble, a truly noble Apple, and, considering the many years it has been in cultivation, a name that should receive far more recognition than it has hitherto done. Cox's Pomona is

another reliable kind for autumn use, and small examples of this when well coloured may be used for the dessert. Stirling Castle and Echlinville Seedling are two free-bearing varieties. Stone's Apple is of handsome appearance, bears early, not making too much wood. Waltham Abbey Seedling is another first-class Apple; this was formerly confounded with Golden Noble, but it is quite distinct from that kind. As an early sort Alexander is to be recommended as a good orchard variety. Winter Hawthornden is larger than the old variety of the same name; also a good cropper. Alfriston is an excellent late kind. Two first-rate Apples of recent introduction are Bismarck and Sandringham, both of which should be seen more in a few years when better known. Peasgood's Nonsuch is a very fine-looking Apple, but I doubt if it can be classed as a good keeping variety. J.

EARLY PEACH "AMSDEN JUNE."

THE above variety is useful on account of its earliness, its free-bearing varieties, and good flavour. Some good Poach growers may not agree with me in my estimate of this variety—and here let me remark I am only speaking from my own experience, as I do not think it is widely known and is not often planted indoors—but it deserves a place, as when it succeeds well it is not inferior in flavour to older and good-flavoured varieties. I may state I prefer it to Alexander and Waterloo, both of which are American introductions of late years, and here, no doubt, many will not agree with me, as Alexander is supposed to be the best of the trio; but with me it does not do nearly as well; it certainly blooms well, but more than three parts drop; indeed, all the first flowers never set; only a few late blooms and smaller flowers set. It is wonderful how soon these late flowers set and swell up, finishing long before the older kinds are ready. I do not depreciate Alexander on any other account, as it is really a valuable early Peach, but its erratic behaviour when in bloom causes much uneasiness and a thin crop at the best of times. Waterloo is much liked by some, but I prefer Amnden June. I grow Waterloo in pots better than planted out, as I get more colour in the fruit. It is quite six weeks earlier than some of our good sterling kinds. For outside culture it is very good. The great value of these early Peaches is that they can be forced readily, thus prolonging the season greatly. I formerly grew Early Beatrice indoors, but the fruits are so small that they are not to be compared with the above kinds. One point worth recording is that it is best to force slowly till the fruits have set; then there is less danger of dropping, as they will stand more heat later than is often given if not hurried too much at the start. For instance, Amnden June last season was ripe in fifteen weeks from the day of shutting up the house, and at the coolest end, this latter being greatly in its favour. Some think these early Peaches, such as Alexander and Amnden June, one and the same, but Amnden June is distinct in colour and sets much better than Alexander. Amnden June colours all over with the least difficulty, whilst Alexander requires more exposure. I prefer Alexander to Hale's Early for a cool Poach-house; indeed, those who have late houses would find these varieties useful, as they then get the treatment they like. Alexander is earlier than Hale's, though much like it in appearance. For outside culture Hale's Early is very good, but it is, I consider, less suitable for forcing, as being later than those named. We have Dr. Hogg, Early Grosse Mignonne, and others that cannot be replaced for their good qualities to succeed the early kinds. With me the Amnden does much best, sets freely, comes of a nice size, and is always of a good colour; therefore, I have no hesitation in recommending it for a few early dishes of fruit. G.

4037.—Treatment of an Apricot.—The root-pruning was not efficiently done, or the Pear-tree would not make such luxuriant shoots; most likely the tree has a strong tap-root; if so, until this is severed it will be useless to expect fruit. Do not give the tree manure in any form at present until the conditions are altered for less growth and fruit.—S. P.

THE KITCHEN GARDEN.

BRUSSELS SPROUTS.

The Brussels Sprout is no doubt the best winter green vegetable we have, and I always have a good breadth, one of the best plots in the garden being especially set apart for the purpose. Why people will persist in setting out their Brussels Sprouts between rows of Potatoes I cannot imagine. Planted between rows of Potatoes, the young plants become so weak and attenuated that they do little good. As a set-off to this, moulding up the stems is resorted to to keep the plants erect, but when planted by themselves, at a fair distance apart, the stems stand up erect, and produce sprouts from base to summit. Moulding up the rows is a good practice in itself, but this will not compensate for other shortcomings. The seasons, again, are so short, that if the plants do not receive rational treatment from start to finish they have not time to do their work, and winter is upon us before they have fully completed their growth. Sowing in the open is of little use except in the milder parts of the country. Recognising the above, I always now take the precaution to sow in a cold frame about the third week in February. I do not believe in sowing in a box and drawing up the seedlings in heat. To get an early supply of plants I have known the seeds to be sown in the autumn, but it is a risky method, as the seedlings are very apt to bolt. Brussels Sprouts, like other Brassica crops, succeed a deal better on some soils than others. It is quite evident that

GRAVELLY SOILS do not often receive so much manure as they ought, and although on very strong soils this can be overdone, yet with the former it is often the reverse, the stems being stunted and puny, and the foliage taking on that bluish tinge so plainly caused by poverty. Close planting is also a very great evil, 3 feet on strong soils and 30 inches on light soils not being any too far apart. Good Brussels Sprouts can never be secured under the system of close planting. The tops in these cases meet almost together, if not quite; consequently, with the loss of light the lower leaves upon the approach of autumn speedily turn yellow and decay, to the detriment of the sprouts. Besides the loss of foliage through the exclusion of light, the sprouts open out and have the appearance of small Coleworts. I like to see the foliage retained until the winter is far advanced, this affording protection largely from frosts. The selections of Brussels Sprouts which are now obtainable from our best seedsmen are excellent, the plants being much smaller and compact. Large sprouts are not cared for, as herbs being too large they are strong in flavour. The Aigburth is a step in the wrong direction for private consumption, however well adapted it is for market. This type appears to be favoured by exhibitors. I find Northway Prize a capital selection, the sprout being of just the size for table use. This season I am growing Northway Prize with Veitch's Paragon and also the Aigburth, but the two former are the best. As far as hardness is concerned, coupled with a dwarf, sturdy habit, the Aigburth is quite as good, but on our strong soil the sprouts are too large and also strong in flavour. The Imported grows too tall and not sturdy enough. From a good strain the sprouts are of the right size.

A.

CELERY TRENCHES.

THERE ought to be no fixed rule as to the depth of trenches for Celery, so much depending upon the position of the garden, nature of the soil, time of planting, and the variety grown. In cold, low-lying positions, and also in all cases where the soil is of a heavy, clayey nature, deep trenches are a mistake, and that whether dug for early, midseason, or late Celery. Nor are they to be commended for shallow soils. Cultivators would appear to be under the impression that the Celery does and ought to derive its sole support from the trenches in which it is planted; whereas, the best produce, as far as quality is concerned, is had when the roots spread out well into the surrounding soil. If the latter is warm, and has been recently manured and trenched, then the roots will spread out into it freely, but when it is of a cold, sterile nature, the Celery roots will be principally confined to

the trench. In cold, sunless summers, Celery planted in deep trenches starts badly, and subsequent growth is of an unsatisfactory character, and rather than plant in trenches from 10 inches to 15 inches deep, I would prefer to put out the plants nearly or quite on the surface. Deep trenches, if frequently unsuitable for early and midseason Celery, as well as dwarf varieties generally, are still more, or always, so for the late crops. Buried deeply in saturated soil, the soft, sappy stalks and the hearts, as a matter of course, are liable to decay prematurely, even during mild winters, while should we experience severe frosts, Celery planted high and well moulded up is not so liable to be badly damaged. Nor am I a great believer in the efficacy of

SOLID MANURE when used to excess, as it very often is in Celery trenches. That this crop revels in a rich and moist root-run there is no disputing, and it must also be admitted that a deficiency of moisture at some period of the plant's growth is very often the principal cause of premature belting. By all means let the Celery have plenty of water and also liquid-manure at the roots, not merely when first put out, but more especially after the moulding-up has been partially completed, this being often the time when the plants suffer the most. Properly attended to in respect to watering, it is not so very much manure that is needed, the plants foraging for themselves right and left, and instead of the top-growth being soft and rank, the flavour also being much too strong, a solid, crisp, and sweet stick will be built up, this keeping better and proving altogether superior to that obtained with the aid of so much manure and deep trenches. What I consider deep trenches are any wholly cleared from the first deep spit of soil. The latter being distributed on each in the form of a level topped ridge certainly makes the trench appear to be much more below the level of the surrounding soil than it really is; but it is, as a rule, too deep all the same. In many cases a depth of from 6 inches to 9 inches of manure is thrown into the trench, a very little soil being brought up to the surface or mixed with this mass of manure, and this is supposed to be exactly what meets the requirements of Celery. I hold that the trenches ought not to be at any time cleared of more than half-a-spit of soil, and that a depth of 3 inches of good manure is ample for mixing with what good top soil is still left in the trench. When ready for the plants most of our trenches are filled with this mixture of soil and manure to within 10 inches of the top of the ridge, and the sides being made sloping, shrinkage is prevented, while the sunshine can reach the bottom of the trench throughout the greater part of the day. Those trenches intended for the latest crops are still more shallow, but as they are rarely 4 feet apart, there is plenty of soil between for banking up with. From the very first the plants do well, no matter how small they may be when put out. After having tried

TRENCHES OR BEDS 5 feet wide, these to hold four rows of plants, and others 18 inches or rather more in width to take two rows of plants, I long since arrived at the conclusion that in all cases where garden room is not very limited in extent and labour scarce, trenches 15 inches wide and single rows of plants are the best in the end. As far as the double rows are concerned, there is very little gain in the number of plants in a trench, especially seeing that in a single row they may well be put out not more than 3 inches apart. It is not huge "sticks" or such as gladden the heart of the exhibitor that are the best for home consumption—they are really very wasteful—but neat solid stuff, having hearts large enough for anything. In each and every case it is of the greatest importance that the trenches be got ready some time before they are wanted, as they will then be in much better condition for the reception of the plants than is the case when only dug as required. It is also most unwise to defer planting till the pricked-out plants have overgrown and spoilt each other, and having the trenches early dug does away with any excess for not getting out the Celery at the proper time. If the plants are sturdy and moved with a good square of soil and roots, they flag only slightly in quite hot weather, and being freshened up with water occasionally, soon recommence active growth.

PREPARING FOR WINTER.

AT this season of the year it is advisable to make a note of what we may term green vegetables which will be required during the following winter and spring. Failures of the past can be guarded against, and kinds which have exceeded well must be planted in sufficient quantities to meet the supply, as it is very annoying after having only planted a small quantity of any kind for the supply to be quickly over, and to have to fall back upon others of poor merit. Many people only commence to find out what they really require when the planting season is over, or, indeed, perhaps not until the winter storms have commenced their destruction. It is very evident that crowded planting is answerable for many of the failures which do occur, and whilst summer vegetables are allowed ample room for their development, the winter kinds, and which should have the most room afforded them, are generally the worst off in this respect. High prices have often been obtained by growers for sale during the past dry months, and those who were wide-awake enough to give their produce rational culture were well repaid for their pains. Last year, when so many green vegetables were destroyed by frost, Spinaoils was about the only kind which came out unscathed, and growers who were fortunate in having good-sized breaks realised good prices. But however wholesome a vegetable Spinaoils may be, it is not everyone who cares for it, especially to use it regularly. However desirable it is to grow such a crop, other staple kinds must be forthcoming. Of the undoubted hardness of Brussels Sprouts there cannot be any question. It is without doubt the most popular and useful winter vegetable we have. To crowd such a useful and esteemed winter vegetable upon amongst rows of Potatoes is a great mistake, and I know of no other crop which so well repays for good culture. The plants after they have finished growing should stand up erect, and when this is the case, through having a due amount of room afforded them, solid sprouts from base to summit will reward the grower for his pains. This is in marked contrast to crowded-up plants, for these are invariably weak-stemmed, and the sprouts are loose instead of being solid and compact. Of the value of Kales there cannot be any doubt, and although these may stand rougher treatment, yet they will repay for liberal attention. These must be fall-grown plants by the time winter sets in, and then whatever weather—for they seem proof against all kinds—occurs, may they be relied upon in proportion to the strength of the plants, as will secondary sprouts be produced. It is in these secondary sprouts wherein lies their value, for after the main head has been cut out, sprouts which are more delicate in flavour burst out in profusion and keep on until the month of May is well advanced. The old Cottager's Kale is as useful as any, the young sprouts being very delicate in flavour and not at all bitter. The Green-courled, Road's Hearting, and Aparagus Kale may all well find a place, the last being the latest of all. It also does not appear to be very particular as regards site, as in my case it was planted in the shade of trees and has turned out well, being now (the first week of June) still good for use. Of other useful vegetables, or rather green kinds, I may instance the hardy Coleworts, so well known in the London markets, but not seen very much in private gardens. Why not, is a question, for they have a flavour, and this a very palatable one, peculiarly their own. Of their undoubted hardness there cannot be any question. By two or at the most three sowings, a succession may be obtained if a lengthened supply is needed. The first may be made in June, the second in the beginning of July, and the third with the sowing of the earliest Cabbage. Other

USEFUL VEGETABLES are Chou de Burghley and the Winsigtadt Cabbages. Large plantings of Savoie are not so very serviceable; certainly they are very acceptable whilst they are good, but not so hardy as the above mentioned kinds. Tom Thumb from a sowing in May is always very serviceable, and, being of a small size, the plants do not succumb so quickly to frost and damp, and after being touched with frost they are very delicious. Like the Coleworts, they may be planted a foot apart on borders cleared of early Potatoes. Preccoli I have

touched upon in a former article, and grown as there suggested serviceable crops may be secured. All the above kinds being of a hardy nature, there should certainly not be such dearths in the early spring as there have been in many gardens during the past two seasons. It may be probably on account of relying on doubtful kinds of Broccoli and also too many Savoy. I cannot give any other reason, as if the kinds I have mentioned are rationally grown, a winter supply of green vegetables should be assured. Of the value of late Celery, or, indeed, a good main supply, there cannot be any question, and if care is taken not to commence earthing too early, the stems keep sound and good throughout. When Celery decays it is through forcing on the growth, through over supplies of rank manure, and this with early earthing is the main cause of failure, too often attributed, but very erroneously, to the action of the frost. Certainly frost does play havoc, and seriously at times, but the saddle is only too often put on the wrong horse. Another useful vegetable is Celeriac. Spinach cannot be dispensed with, but the mistake is generally made in not making two sowings instead of one, or it is even better to have three, the first the latter end of July, and which will be fit, and may be gathered from early so as not to interfere with the winter crop, which should be sown about the middle of August, or even a few days later, and the third the latter end of September. Root crops I need scarcely refer to, as the value of Balsafy, Beetroot, &c., is well known. The above, it will be seen, is a fairly long list of

Early Beet.—The ordinary Egyptian or Turnip-rooted Beet has long been grown by me solely for early use, the roots becoming coarse and badly coloured before storing time arrives. The improved form, in addition to being quite as soon fit for use and better in quality, or, at any rate far more reliable as to colour, also keeps better, the roots not growing to such a great size as in the case of the old form. Last season my seed of Gilman Bill was not sown till April 20, and I commenced drawing roots about the size of tennis balls on June 24. When properly cooked these young roots prove of good colour, tender, and exceedingly flavoured.—E. W.

4002.—**Paraffin oil and water for plants.**—It is not safe to use this mixture to dip plants in, as the oil floats on the surface. It is not, however, generally known that paraffin mixes much better when first beaten up with the same amount of fresh milk, thus making it use with the syringe for easier then without this mixture. A wineglassful of paraffin, beaten up in the same quantity of milk, should be added to 4 gallons of hot water, in which 2 oz. of soft soap has been thoroughly mixed. Having added the paraffin and milk, the syringe should be brought into requisition to thoroughly mix the solution, and, in fact, used alternately between each time of syringing the plant, for the purpose of keeping the solution well mixed. Managed in this way, the paraffin will do no harm to the foliage, and it should be used thoroughly, allowing it to run down the stems, where it will collect in the "eyes," and if used as strongly as



Autumn-sown Onions.

hardy vegetables which may be produced in the open air. Do not forget to sow plenty of Onions for spring in August. A good autumn-sown variety is illustrated herewith. A.

4006.—**Tomatoes not setting.**—You have been treating them too generously, thereby causing them to make wood instead of setting their fruit. Tomatoes require an abundance of moisture and food when swelling their fruit; but until a bunch or two of fruit is formed it is easy to overdo them. Let the soil nearly dry out before watering, and then give them just enough to moisten the soil through. Give all the air possible in the day-time, and leave some on at night. This is the only way to check overluxuriance, and throw them into bearing. Pinch out the side shoots, but let the leaves that come from the stem remain.—J. C. B.

Kidney Bean Smyth's Hybrid.—This did not greatly please me when grown in pots; it proved inferior to the old Lyon House, in fact. On a warm border it has done better, and last season I gathered several good dishes of it, commencing July 13. It is of erect growth, more wiry than stout, and a very heavy cropper. The pods are somewhat small, and disappointingly thin to look at, but when cooked remarkably tender and delicately flavoured. It is certainly quite distinct from any other variety I have seen, and its productiveness, coupled with the superior quality of the pods when cooked, may be sufficient to make it become popular. Note that the pods must be kept closely gathered, as they quickly become old.—I.

some reoommend might kill the plant. Many gardeners injure the tender foliage and buds irretrievably by using too strong insecticides. It should be borne in mind that it is far better to use a weak insecticide twice (at a distance of a few days apart), with clean water between, than to risk injury to the plant by the too strong or too frequent use of paraffin. But when syringing is done, it should be carried out thoroughly. There is a great difference in the way the syringe may be used; a light sprinkling from the top is of little service, and the right way to ply the syringe is in short, sharp jerks, throwing a strong jet of water both on the tops of the leaves, and more especially on their under surfaces. When syringing with vigour ordinary soap water, used once or twice a week, will keep down green-fly, with clean water between each application. It is necessary to remember that nothing should be allowed to clog the pores of the leaves for any length of time, or the health of the plant will suffer.—I. L. R.

Lychnis Haagsana.—This is a very bright flower, and one an amateur should take note of. The plant grows about 2 feet in height, and produces deep, scarlet flowers, fringed at the margin of the petals, and they vary somewhat in shade. It is a good garden plant, thriving in even none too favourable spots, but requires a little shelter to prolong and retain the colour of the bloom. The best position for this very handsome Lychnis is one that is light, well drained, and warm; but in too damp spots, frost inflicts injury. I have several fine clumps of it, and in other gardens have noticed it flowering. The robust foliage is in rich contrast to the large, showy flowers.—Y. C.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in *GARDENING* free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of *GARDENING*, 37, Southampton-street, Covent-garden, London. Letters on business should be sent to the Publisher. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as *GARDENING* is sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be omitted, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely, that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in *GARDENING* should mention the number in which they appeared.

- 4015.—**Show Ferns.**—Will someone kindly tell me the name of the best six Show Ferns?—**LIKE TO KNOW.**
- 4017.—**Blinds for conservatories.**—What is the best material to use for an outside blind to a large conservatory?—**B.**
- 4043.—**Hawthorn.**—Can the common Hawthorn be propagated by cuttings or, and if so will someone kindly give me all necessary instructions?—**S. LEE.**
- 4049.—**Hardy Azaleas.**—I should be glad to have hints as to hardy Azaleas for outdoor blooming—soil, treatment, and best kinds to be selected?—**INDICA.**
- 4050.—**Shading for a greenhouse.**—I should be glad of a few recipes for greenhouse shade, including one made, I believe, with flour as a basis.—**COMMON.**
- 4051.—**Rhododendrons and Azaleas in shrubberies.**—When is the proper time to attend to these? Mine are much overgrown. Is it all right to cut them back?—**T. S. R.**
- 4052.—**A garden fence.**—I should be much obliged if anyone would kindly tell me the best kind of fence to protect my garden, which is exposed, from the east winds and frost?—**LATE FROST.**
- 4053.—**Quick growing Ivies** to plant and the best time of year to plant them, and what particular treatment would most advantage their growth?—**TOXORANCE.**
- 4054.—**Packing Peaches and Grapes.**—Will someone kindly tell me the safest and cheapest way to pack Peaches and Grapes, the same having to travel from Cornwall to London by rail?—**WILLIAM MITL.**
- 4055.—**Box-edging.**—Would anyone be so kind as to tell me the best way of putting down a Box-edging to a path? Can I take cuttings from a bush of Box, and how should these cuttings be treated, and when taken?—**ALINE.**
- 4056.—**Creeper for a cemented wall, &c.**—What creeper are there besides Ampelopsis Velutina that will cling to a cemented wall without being killed? Is it best to sow Variegated Hop and Canary Creeper in the autumn?—**TOXORANCE.**
- 4057.—**Cucumbers in a greenhouse.**—I have in my greenhouse, in pots, strong and healthy Cucumber-plants and produce a lot of fruit, but when very small, drop off. Heat 60 degs to 80 degs. Can any of your readers tell me the cause?—**A. B. GREENGLADE.**
- 4058.—**Rosa W. A. Richardson.**—I have a plant of this Rose that does nothing but grow and will not flower. It is in a very healthy condition. I planted it in the spring in a greenhouse where there was a little heat. Will anyone kindly tell me how to make it flower?—**H. A. L.**
- 4059.—**Lilies and Irises.**—I am obliged to "J. C. B." for his answer; but my mind was rather directed to growing the bulbs (Lilies and Irises) for the London auction rooms, treating the question of marketing the flowers as subsidiary. Perhaps "J. C. B." will kindly give me further advice?—**AUSTRALASIAN.**
- 4060.—**Marie Louise Violets.**—Will anyone kindly advise me how to grow Marie Louise Violets for the market with profit? What disease ought to be between the plants? Also how could I best common garden frames for the Violets? Would ordinary oil-lamps answer the purpose in winter?—**S. G.**
- 4011.—**Stachys tuberosa.**—I should be very pleased if someone will kindly give me some information regarding the culture of this vegetable? I duly planted the tubers in March; the plants are now about 3 inches or 4 inches high. I was told to earth them up like Potatoes; but I presume, considering their size, that only a slight earthing up is necessary. What size do the plants ultimately attain, and when should the roots be dug up?—**A. S. M.**
- 4061.—**Walnut-tree dropping its nuts.**—I have a Walnut-tree of considerable size and age, and to all appearance very healthy, but I am sorry to find that the nuts, about half-size, are dropping in numbers from it. Can you tell me the cause of this? I am informed it has done this for several years. It is very close to a wall and is rather dry situation, and perhaps this may have some effect upon it—the soil is good and of considerable depth.—**A. P. J.**
- 4063.—**Alpine Auriculas.**—I should be glad to know what is the best time of year for mulching alpine Auriculas, and whether black mud from the bottom of a pond would be good for them? My Auriculas have not flowered yet, although they were sown nearly two years ago, but they are growing fairly well gradually. Also what is the best course to proceed with bulbs of Spanish

Iris to ensure their flowering the second year, as they seem very uncertain about coming up twice. Should I lift them when the leaves are withered?—FIRSKA.

4061.—A plague of cockchafers.—Will someone kindly inform me the best means of getting rid of a plague of cockchafers? There are two or three trees (Horsebeams) a few yards from the house, and in the evening the Chafers swarm round these and the Virginian Creeper which covers part of the house, and thence enter by chimneys and windows into the house. We have had trees and creeper examined in the early morning, but no chafers were found on them. Would it be possible to syringe the creeper with anything which would prevent the cockchafers coming round the house?—T. H.

4062.—Treatment of a Penicillium.—I shall be grateful to be told the proper treatment of Penicillium lituricum. I planted two files but last autumn, and one is just appearing above the ground. A friend, to whose garden they have been long established, has had here over a long time. One that I had three years ago has not come up at all. Should they be planted deep or just below the ground? I think mice might be too deep. I have in my unheated greenhouse two good Prides of Peasbush Carnations. How should they be treated when the bloom is over? They have made scarcely a bit of grass.—A SUB-SCRIBER.

4063.—Ivy growing on forest trees.—I have a number of forest-trees, such as Oak, Ash, Alder, Birch, &c., on many of which Ivy has grown to a considerable extent, whilst on others it is only beginning to creep up the stems. Is its growth detrimental to all of them, and to the Ash in particular, so it seems to me to be most affected by the Ivy? In many cases it has a nice appearance, and I hesitate to cut it away from such. Gught I with those where it has but recently begun to grow out of it off? Or if it is not detrimental to the trees I might allow it to go on. Your opinion or that of any of your readers will oblige.—J. P. A.

4064.—Preparing ground for Rosss.—I wish to plant a bed of Rosss, 20 yards long by 4 yards wide, in an old neglected garden. Will someone kindly advise me as to the preparing of the ground, which is very poor? The soil is inclined to be stiff and is about 3 feet deep on clay. At the present time there are strawberry plants growing and look well, but not up to the stems. I cut away from the bed a White Rose-tree in splendid bloom and covered with bloom (probably the late teatant looked after this). The sepot is looking east and in front of my cottage. Would turning it over and mixing with manure, or manure—or say dig out the top soil and mix up the subsoil with old mortar rubbish, and then put on the top soil—be of any service? I shall be thankful for any advice on above subject?—Novice.

4065.—A Vine question.—I wish to ask a very important question about two lots of Vines. I have three Black Hamburg and three Yellow Muscats, and both of them have plenty of fruit on them, and have looked most fruitful up to a few days ago, and now the berries shrivel up in a few minutes. It is heartrending to see them, and I only look to them next March. I was told that the berries fresh done last autumn, and now they tell me that the berries have come off for three years. I think they must be had at the roots. Would it be better to pull them out and put new ones on, or not? I must further state (from the man that was here last year) they had had spider on them, but it is out on them this, and I painted the house myself before the Vines broke. A note in this matter will be very acceptable to me and others.—A CONSTANT READER, Sals.

4066.—Management of an orchard.—I shall be glad if someone would tell me what is the best to be done with an orchard of rather more than 5 acres I have in South Gloucestershire, not far from Bath. The trees are 27 feet apart each way. They are about 6 inches in diameter, have a clear stem of about 9 feet, and there is a very great deal of unoccupied space between them. The soil so far as I have dug down, about 3 feet, consists of about two-thirds loam, rather more than one third heavy loam, and the lower stratum osody yellow clay. The aspect is sloping due south, sheltered on the north by the rise of the hill, and on east and west by large trees. What I desire to know is what is the best way to till the unoccupied ground under, and between the trees so that I may make most of the ground than just the yearly orchard crop get. Whether pyramid espalier fruit-trees, or bush-fruit, or vegetable, and if so, what sorts and best positions to plant?—ARRIS.

4067.—Preparing ground for planting a hedge and Papaw.—Will someone advise me how to proceed with above? If having purchased a cottage with garden and some ground, which formerly was an old bridle-path and by-road, 60 yards long by 8 yards wide, adjoining I have built a rough stone wall to the height of the ground from the bottom of ditch, and on this ground I wish to plant a hedge for about 30 yards. The ground is in the poorest condition, having run wild for years growing in abundance Hutsells, Ferns, and Blackberry bushes on the part adjoining ditch, and the road being full of Couch Grass-Seed. As the wall will be a protection from cattle, I thought to plant a Privet-hedge or some other shrub that would grow quickly. I could mix the ground or sods with manure or rotten manure to improve it. I have wired off with barbed wire and noted the other 31 yards, and one side I wished to plant a few tall-growing Poplars, which would break the south-east winds, and on the other side I wished to plant a few Rhododendrons. I could out plenty of old sods to chop up and mix with either manure, or lime-rubbish to plant in.—NOVICE.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

4071.—Flelones (Tnr).—I do not like to venture upon naming varieties from sketches, and I might make a mistake. You had better by far wait until they flower, when I should have much pleasure in coming than from a flower of each being sent.—M. B.

4072.—Oncidium cultum (Tnr).—Will you please inform me what plants which you have recently received from the West India. I have often received them as large as you

both different forms of O. curtum, a very beautiful kind. These, with O. proctotium and G. Gordinianum, are apparently newly introduced, and they are often mistaken for each other. Each also differs much in its markings. Your two flowers appear to be a good ordinary form of O. curtum.—M. B.

4073.—Amatungula (G. Cross).—I am asked what fruit produces this preserve, which comes from South Africa? I remember some years ago having a bag of seeds given me to sow, and a box containing some preserves made from the fruit, which I at that time thought was very good. The plant is a member of the Dugheia family, and is known by the name of Arduha. Several species appear to yield a fruit, A. grandiflora being known as the Natal Plum.—J. J.

4074.—Lullia elegans (T. Johnston).—The flower you send me which the name is nothing but a very poor form of Cattleya intermedia, which you can prove for yourself by examining the pollen masses, when you will find but four. You might set this plant on one side for outling flowers. I do not recommend this out of any disrespect; but I know if certain plants can be left for this purpose it saves many a fine flower one is anxious to preserve.—M. B.

4075.—Cattleya Mossie.—Jean sends me a flower of this old favourite, asking me if it is a good form. Now really, to speak (or write) truthfully, I must say this about the worst form of the plant which I have ever seen, and I have seen many. I would advise Jean to try the plant on the fire and not to be troubled with such a bad variety any longer. A fair variety does not require a white more care, and it gives infinitely more pleasure. When you buy ask if the plant has flowered, and what sort of a variety it is; you then have a guarantee.—M. B.

4076.—Oncidium Lepoldianum.—J. C. B. E. asks me what this kind is like? Well, now this is one of the few Orchids which are so cultivated of which I have no knowledge, and, therefore, I cannot enlighten my enquirer's friend. I only know it is a plant that has been introduced by M. Ledoe, of Brussels, who has dedicated it to the King of the Belgians; and therefore, I should imagine it to be a good thing. Perhaps some of my readers have the plant either in flower or just coming into bloom, and if so a flower would be highly appreciated by—MATT. STAMBAK.

4077.—Lullia Picheriana (Chas. West).—You have evidently been misinformed respecting this plant. It is not a cross between Lullia crispata and Lullia elegans; the last-named plant is quite innocent of any complicity in the cross; but I, in the address made by my good old friend, Mr. Dunlop, between L. crispata and L. Picheriana, and it is dedicated to Mr. Picher, who had charge of Mr. Rucker's Orchids to the last. I think, however, that the plants is very rare. You certainly would not pick it for a few shillings. A plant having this name you may have got, but it certainly is not Lullia Picheriana.—M. B.

4078.—Oncidium essale (C. Jessop).—This is the name of the flower you send, and in spite of what you say I cannot help assering that it is a very beautiful species. It used to be very rare, and now, although not commonly seen, it has yet been imported in some numbers. Its flowers are of considerable size, in those blooms no just under 3 inches across; the sepals and petals are bright esary-yellow, with bright brown dots, and these give rise to the esposito name. The lip being of the same colour, dotted with reddish-brown. It first flowered in this country upwards of forty years ago.—M. B.

4079.—Lagerstromia.—G. Robinson asks if these plants are really beautiful plants. I can only assure him that they cannot have heard their praises overrated, for they certainly may be said to be amongst the most lovely flowering plants that I know. They belong to the family of Loose-strifes, and are species of L. Indica; they thrive and flower well in the open border in the south-western counties. They should be grown in a mixture of peat and loam, made esady. They should be potted firmly and watered freely. In the winter season they should be kept by keeping them feily dry, but the wood should not be allowed to shrivel.—J. J.

4080.—Cattleya intermedia (Tnr).—The flower sent represents an excellent variety of this pretty plant, and it is one which I am very fond of. If you cannot keep it moist enough on the back, build a little Spagnum upon it. I do not see why you should be compelled to take it off the wood. If you do not do so, but endeavour to hang as I told you, it should be alive upon it. You will have no trouble in keeping it supplied with the necessary moisture, but then you will have the advantage of growing it in its natural condition. If you wish to pot it, in the spring is the best time to do so, taking advantage of the time before it starts into growth of either root or shoot.—M. B.

4081.—The Papaw-tree (C. Jenkins).—This, my enquirer says, is said to be a native of the East Indies, to which I must differ from him, for I think it is now admitted to be a native of South America. But the Papaw (Carina papaya) is cultivated in most tropical countries, so that its exact native place is somewhat obscure. It is said to have the property of making fresh killed meat quickly tender, simply by hanging it up amongst the leaves, and the fruit gives a mild presh and pigs renders their flesh tender. But it is the ladies appreciate it the most, for they use it to juice for the removal of freckles from the face.—J. J.

4082.—Sophronite grandiflora (Tnr).—Yes, I have noticed all the three forms that you sketch, and I hope you will not be disappointed with No. 3; but this one I have observed produces small and poor flowers; but No. 2 of your Illustrations I have seen produce very fine flowers.—Indeed, the finest form of this species which has ever been seen, I think, was from a bulb in this description. The No. 1 I have never seen to yield but poor blooms. The price paid for it, however, was by no means excessive, but the sale prices for the others were simply absurd. You do not deserve to get a good variety from other, and this is my candid opinion. I am glad you are making the home of the late Captain Maryett famous. His mother used to have a fine collection of plants there in her day; but perhaps you do not remember it?—M. B.

4083.—The Turk's Cap Cactus, Mislococtus (Columbus) (Henry Mansell).—These, I should think, are the plants which you have recently received from the West India. I have often received them as large as you

name, and like yourself, failed to save even a single one of them. Long before twelve months was over the place that knew them once knew them no more for ever, because they decayed just in the same manner you describe yours to be doing. This set me to thinking—what could be the cause of it? And I come to the conclusion that it was quite a mistake these large plants, which in all probability were near their full size, and these, perhaps, in consequence of their size, received more damage to the transit than would be the case with smaller plants. So I got a box of plants 6 inches and 9 inches high, sent home, and these came home under the esptial's charge, and the plants came to hand in sound condition. They were potted in old mortar rubbish and a little loam, treated like other Cacti from warm regions, and they grew and increased to size beautifully.—J. J.

4084.—Jalantiss.—C. R. C. says his plants of these are now growing well, and he thinks they would like a shift now. Might he give it them? They are to large 60's cow, three bulbs in a pot, and they are now about half grown. Yes, certainly, shift them into a small 3 1/2", using peat-fibre and Sphagnum Moss, with a little sharp sand mixed with it. You may keep them in the warmth of the stove, with a nice moist heat, and do not allow them to want for water to their roots during the growing season. No, I should not advise you to use mortar of any sort to them. I do not like it. I have seen many collections to which liquid-manne had been given dis quite out after a few years. They became attacked by a black spot which affected the bulbs first; afterwards increased with the growth, and eventually spread over the young bulbs, finished them off and causing death and destruction to the whole lot. If you have not begun to give your plants any liquid, do not give them any, and if you have given them some, I advise you to stop it at once.—M. B.

4085.—Blight on a Pear-tree (The Rev. H. I. Rawlinson and F. Barchard).—Your Pear-trees are attacked by the grubs of the Pear Saw-fly (Sals adria esalis), which eat the surfaces only of the leaves, the veins remaining untouched. When these grubs are fully fed, they climb their skins, and having got rid of the dark brown, shining covering, appear as bright yellow grubs. They now leave their mid quarters on the leaves, and reaching the ground, bury themselves and become phrysalids within a dark papry cocoon, two inches or so below the surface. In this condition they pass the winter, the Saw-flies emerging to the spring. If anyone in a certain district would remove the earth in the winter from trees which have been attacked to the depth of 3 inches, not harm or bury it, this pest might be almost stamped out. As regards means of destroying the grubs when on the trees, dusting the leaves with well powdered quick-lime, or gas-lime, or esyloging with 7 lb. of soft soap, or extract from 8 lb. of Quassia-ships, or 2 lb. of Tobacco, and 100 gallons of water, are the best.—G. S. S.

NAMES OF PLANTS AND FRUITS.

*. Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C.

Names of plants.—Miltbush, es. Kidare.—Festuca pannosa.—Subscriber.—Cattleya Mossie, good in size, but deficient in colour.—C. Hebbel.—1. Phlogos norooopis; 2. Valeriana dioica; 3. Parlatia officinalis; 4. Potentilla reptans.—C. Dyanond.—1. Epilochium radicans; 2. Cattleya Forbesi; 3. Odontoglossum luteo-purpureum.—G. Ellis.—1. Lycaste Harrisonis; 2. Cattleya Mossie; 3. Lullia purpurata; 4. Oncidium festuosum; 5. Vanda tricolor insigne.—C. Bell.—1. Athyrium Filix-femina glomerata; 2. Luetra Filix-mas gracilipes; 3. Polystichum angulare divilatum; 4. Scopolopium Wilsoni; 5. Luetra Filix-femina; 6. Luetra Filix-femina; 7. Luetra Filix-femina; 8. Athyrium Filix-femina; 9. Luetra Filix-femina; 10. Luetra Filix-femina. —Mrs. Marchant.—1. Cattleya Steudleriana; 2. Lullia Russelliana; 3. Epilochium violaceum majus; 4. Odontoglossum luteo-purpureum radicum.—G. Berrie.—1. Euphorbia Helioscopia; 2. Poly-pogon monspeliensis; 3. Allium triquetrum; 4. Senecio Jacobina.—Charles Watson.—Venus Looking-glass (Specularia speculum).—Mrs. Prince.—Speculons not numbered, so we cannot name them.—A. M. C.—Thlasium adanifolium.—Antoinette.—We cannot name garden varieties of it, but we can name some of the Rose.—J. Dain.—Impossible to name from such dried-up specimens.—J. Polkett.—1. Acer Nigrum variegatum; 2. Weigela rosea; 3. Yucca Traversi (probably). Send again.

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CHINA ASTERS.

It not infrequently happens that these Asters, ere they can become well established, are badly infested with aphid. The leaves then become stunted, and the side shoots, which at once break up prematurely, are never capped with fine blooms. Generally this season so far, and in spite of the earlier drought, Asters are very good, and we may look for a full bloom in due course. It is difficult when Asters become blighted to dislodge the insects, because they usually favour the undersides of the leaves. Perhaps the best plan is to water liberally with soapy liquid in such a way that much of the water will splash up under the leafage and render it obnoxious to the aphid. If this be done at night and a good dressing of soot added it will prove very efficacious. The soot should, however, be partially washed off by sprinkling with clean water next morning ere the hot sun scorches the foliage; those waterings thus serve a double purpose, as whilst checking the fly they also help to manure and stimulate the plants, so that very soon new roots are formed. Stout growth ensues, and a wonderful change is presented. It is not at all satisfactory to sow Asters where they are to bloom, not only because owing to our late, cold springs germination must be both late and uneven, but also, unless transplanted, too thick to be of any use. Aster seed, if of a good strain, is also too expensive to be sown in any other than a shallow box, or in frames, or pans, or in frames, of course, under glass, is at once the wisest and most economical. I can remember the time when in a large nursery in the south of England it was the rule to raise the tender annuals on long hotbeds covered with soil, and which were protected from the weather by hoops of Ash or Hazel, and covered with mats. That was the practice some 50 years ago when glass was not so cheap and frames not so plentiful as now. In the area of a frame some 8 feet by 6 feet it is possible either in shallow boxes or by sowing the seed in shallow drills in a soil bed, that is, near to the glass, to raise plenty of stout plants. There is, perhaps, no better way, because plenty of air can be afforded as desired.

DRILLS may be seven inches apart, and the seed should not be sown thickly, as if such be the case the end of the grower will be largely defeated by producing an excessive quantity of weak plants rather than fewer stout sturdy plants. The same rule applies to raising Asters in pans or boxes. Once the plants are 3 inches in height they need immediate transplanting into either frames or where they can have shelter from cold winds and frosts. The soil should be specially prepared with plenty of chert manure or leaf soil to promote abundant root growth, and some shading can be given if required until the plants have become established. Even in preparing for this first transplanting it is poor policy to pull the plants bodily from the seed-bed or pans to the manifest injury of the roots. The best course, as in all similar cases of seedling plants, is to employ a small hand

fork to assist the roots coming up freely and without injury. When so much trouble is taken the plants are far less likely to be attacked with aphid than when roughly used. If then dibbled out carefully at some 3 inches apart all over the frame in prepared ground, they will soon form strong plants. If seed be sown early in April, even in a cold frame, for bottom-heat is rarely needed for good Aster seed, the seedlings will be ready to dibble out in five weeks, and again may be finally transplanted where to bloom early in June, being then very strong, sturdy, and well-rooted. Each plant lifted with a trowel will have a good clump of roots and soil attached, and planted also with a trowel will, if well watered—that is, if the weather be dry—hardly suffer at all, and, making good growth all the summer, carry in the early autumn fine heads of flowers. In the case of growers of the best seeds of plants, either for market sale or seed-production, it is the rule to transplant seed only, that is, from the seed-boxes or frames direct into the open ground. Where that course is perforce followed, it is best to sow seed thinly in shallow boxes, getting it to germinate quickly in frames; then as soon as the plants are well in rough leaf, leaving them fully exposed to light and air except at night, so that the plants in no way become drawn and are rendered hard and wiry. These plants have to be put out when comparatively small, and, of course, presenting an easy prey to slugs; therefore, the harder the stems before being exposed to that danger the less likely are they to be attacked. If, however, after being well watered in, a dusting of soot be given some two or three times during a fortnight, very few indeed will fall a prey either to slugs or aphid. Once well established in the open ground, Asters can take good care of themselves and in due time give a superb show of bloom. Truly beautiful indeed are the colours to be found in the various sections. We may, if we want variety, have a dozen diverse sections, and a dozen of diverse colours or markings in each. Growers for ordinary garden decoration like plenty of variety; growers for market like a few striking colours, such as white, blue, purple, carmine, red, and crimson. Of this last hue, some sections give most brilliant shades, and masses of them growing in the broad sunlight are indeed beautiful. The crown or edged flowers are pretty, but not so constant or, on the whole, so useful as are the self flowers. Striped flowers also are more or less pretty, the white and blue and red and white of the Victoria and Peony-flowered sections perhaps being the most effective. Those two sections give the best flowers for exhibition, the dwarf Chrysanthemum, dwarf Victoria, and the Bouquet the best for market work, lifting the plants and clumping them into pots for sale. The Mignon is the best section for cutting from. Those who like quilled Asters will find them easy to grow, but the flat-petalled forms are on the whole cheaper and more effective. A.

Marigold Orange King—A fine variety of the common Marigold is named Orange King. The flower is of very large size, the boldest I have ever seen, and the colour is intense orange.

It is a bright and handsome variety, and although very large is in no way excessively coarse, as many high things. The Marigolds are so easily grown that the variety Orange King may be tried. In a group its large handsome flowers tell well.—V. O.

FLOWERS FOR DUSTY GARDENS.

ONLY those who are fond of flowers and are similarly situated can understand the difficulties and annoyances that have to be endured by those who have gardens in front of their houses close to a dusty road or which there is much vehicular traffic. Three years ago my advice was sought in this matter, since which I have been experimenting with a view to find out what are the most suitable flowers to grow in such gardens, and I find that these with a pendant habit give the most satisfaction. Fuchsia, I should say, head the list, and next to these the drooping forms of the Tuberosa Begonia. These two subjects may be called almost dust-proof, as not much of it finds its way into the centre of the flowers, and, what is equally so important, the dust is more easily washed off without injuring the blossoms. Anemions do fairly well, and the same may be said of the Dwarf Nasturtium. Amongst hardy flowers the old-fashioned Columbine, Pentstemon, and Antirrhinum are fairly satisfactory. I may also include the Tufted Pansies, not because the dust does not lodge on the foliage and flowers, but because the blossoms are not injured when it is washed off, which it can be through a fine rose watering-pot. Plants with narrow leaves and small flowers are certainly the most suitable for dusty gardens. Roses are, I think, the most unsatisfactory of any, especially those with cup-shaped blooms, and double Pelargoniums do better than single ones. I should mention Sweet Peas as being serviceable, because the dust can be removed by gentle syringing with water without damaging the flowers. Taken altogether I do not know of a garden in any other position so unsatisfactory as those to which I refer. I fancy there must be many readers of GARDENING who could help each other by sending the names to the Editor of any flowers they have found to be suitable for such gardens as I have alluded to.

J. C. C.

SHADING PLANTS DURING DROUGHT.

THE prolonged drought is beginning to tell its tale with all sorts of plants, although some, by their stronger or deeper-rooting nature, withstand it better than others; but all will need extra care to guard against injury, or the probability is that many valuable plants will be lost, and others greatly crippled. Amongst those that show signs of distress with me are the Primrose, Polyanthus, Daleia, and other spring-flowering plants which have completed their growth and are about to rest for awhile; but it must be remembered that they are not able to defy drought like the Cactus or Agaves, and if allowed to go fully exposed to the burning sun and acid drought will probably succumb, and I find that slight shading helps them greatly—in fact, far more than copious supplies of water,

for if a covering of long Grass is shaken over the beds before the soil gets very dry, one good soaking will last for a long time. Violets are moisture-loving plants, but as they are making their growth now, they cannot be shaded in the same way; but I always plant between rows of fruit-trees, where they get partial shade. They must be kept well watered at the roots, and a good dash with the garden-engine in the evening will greatly help to keep red-spider at bay. Plants in pots, especially Azaleas, Camellias, &c., when placed out-of-doors, need shade from the direct rays of the sun. A good place is where they get shade from 10 a.m. to 3 p.m., as the sun's rays will do them good at other portions of the day; but in such seasons as the present, when we are getting a double share of sunshine, great care is needed to guard such plants against full exposure, as, however good sunshine may be for many plants, there are many that cannot withstand its full force without injury.

J. G. H.

GARDEN WORK.

Conservatory.

Many plants which have been brought on in the stove will now do in the conservatory. Gloxinias will make charming groups mixed with Maidenhair and other light-foliated Ferns. Specimen Bougainvilleas may have prominent positions, and Caladiums will last in beauty of foliage a long time if kept a little close and shady. Groups of Calceolias, mixed with Ferns, may also be employed to give variety. Lilies, a variety and others, now throwing up flower-stems should occupy a light position to prevent being drawn up weakly. Insects have a preference for the flowers of the plants which are now in course of formation, and must be kept down by dusting with Tobacco-powder or by washing or dipping insecticides sufficiently strong to kill the insects, but not strong enough to injure the tender growth. Winter-flowering plants growing in the border, such as Abutilons, may be cut back to get a new growth for winter flowering. Should mildew appear on the Tea or Nettle Rose planted out, dust the first affected spots with sulphur; but, as a rule, mildew will not give much trouble under glass at this season unless the Rose roots are too dry, and this should be soon to. Indeed, all specimen plants growing in the border will require more than the usual supply of moisture in the present season. The last of the hard-wooded plants should have their growth sufficiently verdured to bear exposing outside if the removal is well-timed. Pick a dull day, if possible, to take them outside, or else stand them in a shady spot for a time till the foliage hardens a bit. Specimen Plumbagos, both the lilac and white, will be very useful now, though the flowers are hardly lasting enough for cutting. Both kinds are rather a pretty plant for blooming in summer. It belongs to the second class of old-fashioned plants. The Brugmansias are striking plants, and either planted out or in large pots will require a good deal of attention in the shape of water and liquid manure. These are useful plants when grown in tubs for standing outside in association with Agapanthus, Orange, Myrtles, &c. Cut down Pelargoniums and put in the cuttings. They will strike anywhere now. Surplus Fuchsias may be planted out. Outside plants are the best to get cuttings from in autumn for early blooming in small pots. Zonal Pelargoniums for the conservatory should have their final shift. If over-potted the plants will get the growth ripened sufficiently before the short days come. A good specimen may be had large enough for winter bloom in a 6-inch pot, and many of ours will be in 5-inch pots, as these pots are more suitable for placing on the shelves near the glass.

Stove.

The various varieties of tropical Asparagus are charming things to plant out in the stove wherever there is room for freedom of growth—the ferns are so nice for cutting for table decoration and other purposes where elegant greenery is required. Young plants should be grown out in pots, shifted into those of larger size as more root-space is required. They are easily raised from good seeds, but seeds are scarce. Propagation by division is rather a slow process when one only has a few plants to deal with. It will be better if those foliage plants, such as Crotons and Dracomas, which require a strong light to colour the foliage, could be moved to a small house where less shade is used. The syringe must be used freely to keep down trips and other insects, but soft water alone should be used. It is well to have a deposit of lime on the foliage that would spell the effectiveness of the plants for a long time. A little more ventilation may be given to the stove during the next two months or so, and a little less moisture used inside. Tote will tend to the maturing of growth, and fit everything to pass through the next days of winter. Orchids which have completed their growth will be all the better for a little more air and less moisture. Achimenes and Gloxinias may be moved to the conservatory with any other plant in bloom which can be spared.

Ferns under Glass.

If the fronds are required for cutting give as much light as is consistent with plenty of green colour in the fronds. If the glass is unshaded, or not shaded sufficiently, the fronds will be of too dark a green. We want to be the happy mean of producing dark-green fronds with sufficient substance to remain firm in a cut state. Young plants which are in 60's or 3 1/2-inch pots, and which are moved at once into 6-inch, will be useful for winter decoration. Ferns of all sizes are requiring the room and table decoration nowadays. Even plants in thumb-pots,

if healthy and well grown, can be usefully employed. There is an endless variety in Ferns, but the number that will bear the rough usage of the decorator is limited. If fertile fronds, with the spores sowing a dark colour, are gathered and placed on white paper in a cool room, the spores will fall as they ripen, and may be sown immediately.

Hard-wooded Plants in the Open-air.

These should be arranged on beds of coal-ashes, with paths between, at suitable intervals to give free access for the purpose of watering &c. Camellias will be better in the shade, as their hard, shining leaves are so easily injured by hot sunshine, or otherwise damaged. It is not customary to pot hard-wooded plants so late as this, but if there are any plants in a pot-bound condition, see the principle of choosing the least of two evils, I should repeat now, pressing the soil in with the pointing-stick as freely as possible. Plants in the open-air often require more water than they do under glass, especially at first, and constant vigilance must be used that nothing suffers for want of water. Every pot must be tapped with the knuckles to insure its proper condition being ascertained. In very hot weather it is beneficial to sprinkle the surface of the ash-bed every evening.

Frames.

These will chiefly be occupied now with young stuff coming on from the production of winter bloom. A little air will be useful now to harden and check luxuriant growth. Seedling Begonias which have been raised this year may be planted out. The early raised plants will be in blossom, and even the latest plants will make more growth if planted out in a bed of good soil than in pots. These small tubers will, of course, be lifted and packed away in boxes of sand for the winter. Primulas, Cyclamens, and Cinerarias are growing freely now, and will require shifting into 6-inch pots.

Window Gardening.

Among flowering plants will be Fuchsias, Hydrangeas, Double Petunias, Musk, Tuberosus Begonias, and Zonal Geraniums. All these may be improved by weak stimulants. The well supported plants look sounder, better, and happier than those which are given the help beyond what is contained in the soil and water, as obtained in a state of Nature. Do not keep any plants in the room which are not effective, as they will recover tone sooner outside. Cuttings will strike even in a shady window, or even outside, if placed in a shady position.

Outdoor Garden.

Now that rain has fallen in sufficient quantities to make some impression on the thirsty ground, budding of Roses and layering of Carnations must be no longer delayed. Unless Carnations can be layered as early as possible, the strong plants ready to pull out early in October, they do not get that grip of the soil which will enable them to resist successfully the lifting power of the frosts of early winter. Unless I could get Carnations planted in the beds early in October, I should pot them and keep in a cool frame or cool house all winter, and plant out in March. I am convinced that this is better than late autumn or winter planting. There is yet time to sow annuals for spring blooming. Most of the hardiest annuals may be sown, if desired, including Iceland and other Peppars; but for bedding purposes something compact in growth is required, and in this respect Silene composita, Bapenaria caerulea, Limnethes Douglasii, Myosotis denticiflora, and Clarkia poliochilla alba, are reliable. Prick out Wallflowers and any other biennials or perennials large enough to handle. There is always a lot to do among Dahlias, Hollyhocks, Phloxes, and other late-growing things. Delphiniums have been wonderfully good, and have stood the drought well. Asters are also good dry weather plants where well established and fast enough in the ground. The dry warmth of the season seems to have suited the Toll-pieces; several fine specimens which have come under my notice lately have been beautifully in blossom quite a month earlier than usual. The Tulip-tree should have a place on every lawn, where there is room to plant a tree that will grow 70 feet high. Bedding plants are growing freely now, and will used a good deal of attention.

Fruit Garden.

The land intended for Strawberries should be made as good as it can be by deep culture and fairly liberal manuring. It is a good plan to trench up a piece of land in winter for the purpose of getting the ground as early as possible, and not likely to be drowned; and when the Potatoes are lifted give a dressing of soot and superphosphate; fork it in lightly, and plant the Strawberries. Here the plants as strong as possible, and take a good crop first year. This is quite feasible if the early conners are secured, and either layered in pots or in mounds of rich soil placed among the plants for the purpose. Red-spider will be busy, both under glass and also outside, where the water supply has been too limited. Watering is heavy work, but it is such a pleasure to be able to point to clean, healthy, well-developed trees in a season like the present, and healthy nourished fruit-trees and plants are a standing reproach to those in charge. This is what makes a good man feel so uncomfortable when his hands are tied for want of means. If the young shoots or the fruits on Peach-trees still seem crowded, remove the surplus at once. It is the worst possible treatment to leave too many; this has ruined more trees than either frost or insects. Young trees on walls making very strong growth should be stopped to reduce eyes to break level down, and the best of these lateral shoots may be laid in. In strong growths which young trees often produce grow out their full length unstoppped, as they will have to be shortened back considerably to get the bottom furnished. Leave a little air on vinerias and Peach-bowes all night now.

Vegetable Garden.

There are some things which must be sown or planted, no matter what may be the condition of the weather. If sufficient Cabbages are not sown, get the seeds in as once, having first well soaked the bed with water the night previous. The only kinds suitable for sowing now are the earliest of which a good selected stock of Ellam's Early is the best. Endive, both the green curled and the Bolognese, will come all right now. Every bit of seed that should be sown as soon after the preceding week as

cleared off as possible. There are many things which ought to be sown or planted within the next month. Sow Brown Coo Lettuce. Spinach of the prickly variety so now; a few of the plants may bolt, but for the most part, if the seed is in good heart, as regards depth and mairing the crop will stand. Lift early Potatoes, and prepare the land for other crops, such as Turnips, Leeks, Cauliflowers, &c. Get out a good patch of Veitch's Self-protecting Autumn Broccoli; it will prove invaluable towards Christmas. See that the plants have a fair number of strong fibrous roots to come on for succession. Trim off the leaves from Cabbage stems where the Cabbages have been out; several good hearts will spring from the stems. The rows of early White or Red Celery may be blanched by wrapping folds of paper round them, first tying up the leaves. Any kind of paper will do, so that the light is excluded. Watering can be continued after the paper is on. Give ample support to Tomatoes, both on the side and under glass. Stop all leaders on the outside plants by the end of the month.

E. HOSKAY.

Work in the Town Garden.

If the showery weather we have been having for the last two or three days continues, things will grow more in a week than they did in a month previously. No amount of watering has the same effect as the natural moisture that falls from the clouds, and it is curious to notice how quickly even plants under glass respond to the effects of a rainy day or two at this season, for no matter how freely watered they are, they are always a little behind those on the outside air is heavily charged with moisture. In the outdoor garden stage, of which I have seen little or nothing for months past, will soon be putting in an appearance again, and steps must be taken to check their ravages in good time. They are particularly fond of the young shoots of Dahlias, so that every plant must be surrounded by a good ring of ashes and soot; sawdust is also a capital thing, and so long as it remains in anything like a loose condition they cannot possibly crawl over it. Pelonias, Marigolds, and some few others they are also very partial to, and these must receive particular care. To destroy, or rather keep down, the multitudes of small fry that are found in some gardens, the best way is to get out after dusk on a moist evening, with a muslin or other open-textured bag full of quicklime in a finely-powdered condition, and a stick, and by a judicious use of the latter give the whole of the beds and borders a light dusting. This will effectually settle all that it touches, and do no harm to the plants. This is the right kind of weather to plant out seedling or small Begonias; with very little care they will get hold almost directly, and grow right away. Chinesa Begonias in May should be planted out at once; those who do not want these charming and everlasting flowers until the autumn will find this plan an excellent one, and far less troublesome than the usual method of sowing under glass. Carpet-bedding should be finished off without delay; in many places the bedding-out has been delayed long beyond the usual time on account of the scarcity of water, and the period of extreme drought and tropical sunshine we have lately passed through (I trust), has been very trying to small plants of a tender description only just put out. Best layering of Carnations as soon as possible, the earlier they are got to work the better, and the "Grass" is usually forward, and where the plants have been well attended to, strong also. Prick off seedlings in stove beds as soon as they can be handled; there is nothing to equal seedlings for flower production. A light sprinkling of nitrate of soda on a burnt-up lawn will quickly restore it to a healthy colour new.

B. O. I.

THE COMING WEEK'S WORK.

Extracts from a garden diary from July 8th to July 15th.

The budding of Roses and layering of Carnations has taken up a good deal of time during the week. The flowers of both of these classes of plants are so beautiful for every purpose for which flowers are required in a cut state, and the plants are so popular with that no one is likely to be too busy to do them. Carnations are sown on the dwarf Brier, some on the seedling Brier, and others on the stocks raised from cuttings. Tus chief thing that is impressed on my mind, after many years' experience, is that care to dwell overmuch upon, is the necessity for dressing and manuring the soil for Roses of all kinds. And I have had more ups and downs in my struggles in growing Carnations than with Roses; and I envy those who have nothing to do but potter about and watch these things grow and blossom. Wireworms are a terrible pest in a garden; they can be got rid of in time, but it takes years to clear them out. Thorough cultivation is the best remedy for wireworms. In all the land I have seen turned up, I have never found a dead wireworm, and their bodies, if they died through the application of lime, soot, &c., which has been scattered over them, would be found sometimes. If one could turn in a lot of chickens every time the spade was used their sharp eyes would detect a good many of them. But in the struggle with insect pests man will, if he perseveres, conquer. Sowed Cabbages of the earliest kind. I have seeds sown earlier, but I generally sow two sowings. The best sowing not injured by floods in the seed-bed till spring, and Cabbage-plants are always useful, both to plant out, and give away to neighbours; but the old-fashioned idea of giving away surplus garden stuff is now expanded. Even the squire and his lordship sell garden produce. We shall soon all be shopkeepers or market gardeners; the only difficulty will be, in face of the increasing foreign competition, to find customers. Nailed in young wood on Peach wall. Early kinds of peaches are showing signs of ripening; turned back the leaves which fall over the fruit, and some of the leaves have been plucked; fruit cannot colour unless exposed to the light. Peaches on walls have been heavily watered over the mulch of manure which had been previously placed over the soil containing the roots. This mulch will be raked off when the Peaches are gathered to let the solar warmth into the border, and to help in the ripening of the wood. Gave another top-dressing of Patent Silicate Measure to borders of late vinery. Tomatoes in unpeeped-house are ripening in large quantities now. Ham Green Favourite nearly as much earlier than the old red, and the round kind which ripen well, though the crop does not

* In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equally good results.

look so heavy on the plants. It pays to mulch Tomatoes with manure; it saves watering, and the roots derive much support from it, and the blossoms also. I always find it necessary to begin this feeding when the first trace of blossom has set and the fruit swelling. If this support is not given in time the upper blossoms fail. I do not believe in syringing Tomatoes, as a rule, but in hot, parching weather I often turn the hose on just to give the plants a light, refreshing spray; it helps the setting. Potted on Cinerarias, Primulas, and Cyclamens. Potted off seedlings of Dracaena and Aralias. Put in cuttings of Hydrangeas.

FERNS.

NOTES ON FERNS.

CONSERVATORY FERNS.—Under this head I would more particularly direct attention to those kinds which will thrive in a minimum temperature of 40 degs. or thereabouts during the autumn and winter season. In most conservatories and show-houses there is room for

are grouped together. When the supply of flowers is at all short, a good stock of Ferns is of great assistance in conjunction with other plants of fine foliage. It pays therefore to grow some few kinds in goodly numbers, according to the case in point. Of these mention should now be made more particularly of the hardier of the Aspleniums, most of which can be easily increased at this or any time of the year by the small hulihs forming on the fronds. About now these are in a good condition for removal. This may be done by taking small pieces of the old fronds with several young ones forming and pegging down upon sandy soil, or it may be effected by taking each young plant separately and then carefully embedding it into the fresh soil. For this purpose shallow pans will be found the best, as no great depth of soil is really required. If taken now these hulihs would form nice y ung plants fit for 2½-inch

CYRTOMIUM FALCATUM is another fine enduring Fern for the cool-house. The greenhouse varieties of Lastreas (Aspidiums) should also be noted, particularly *L. lepida*, *L. Sieboldi*, and *L. Standishi*. Several of the Pteris family are decided acquisitions. Of the taller growing kinds *P. tremula* is one of the best of all Ferns, suitable both for associating with other kinds as well as for grouping with flowering plants. The various forms of *Pteris cretica* and *P. serrulata* are also excellent Ferns for many purposes, particularly *P. cretica nobilis* and *P. serrulata cristata major*; *P. nimbrosa*, although of more vigorous growth than *P. cretica*, is equally useful. Woodwardia radicans is not half enough grown; when seen fully developed it is a noble plant. The foregoing list does not include nearly all that are well worth more extended cultivation. I feel fully persuaded that not nearly enough is made of Ferns on the whole for the purposes indicated at the commencement of this article. If looked after with ordinary care they are always to hand, and are so useful when rearranging is being seen to, filling in many places when flowering plants would not be nearly so suitable. Scale may in some cases be found troublesome, but with attention bestowed in nothing more than the average way it is easily kept under.

HARDY FERNS FOR DECORATION.—One often hears the complaint of such an amount of plants being required for indoor decoration, with the results consequent thereto of the plants being permanently injured, or so much crippled, as to require careful treatment for some time to come. Now if hardier plants were more used, as those now under notice, a deal of future trouble and annoyance would be saved. They are well suited for the purpose in many ways, and may be chosen in considerable quantities as to variety to suit given cases. These are those which always look best when placed upon the floor or sufficiently low to be looked down upon. For instance, the Polypodiums, the Lastreas, the Onundas, and the larger forms of the Scolopendrium all look well when stood upon the floor. For vases and baskets there is also a good selection from amongst the following: *Adiantum Capillus-Veneris* and *A. pedatum*, *Allasium crispus*, the *Asplenium* and *Athyrium*, *Cyatopteris bulbifera* and *C. fragilis*, with the crested forms of *Scolopendrium vulgare*. A few of these latter may require for greater safety the protection of a cold frame in winter, otherwise when they grow shabby in the autumn all that will be required is to plunge them in a bed of ashes, quite covering the pots. For this purpose a north aspect against a wall would be as suitable as any place that could be chosen. Here they could remain until the first signs of growth are apparent in the spring when any needful attention in the way of potting or top-dressing could be seen to. It should be borne in mind that large pots are not in any case required, whilst if not so much over-watered during the summer as to cause injury to the roots, they would remain for some few years in the same pots. Loam, not too heavy, with leaf soil and road scrapings is a good mixture for them, potting being done pretty firmly. One great advantage in making use of these hardy Ferns is that they never need occupy any house room during the winter, neither, indeed, do they require it at other times, although probably they might be found useful even in conservatories during the summer months. These hints on hardy Ferns and a few of their uses in pots are made now so that those readers who during their country rambles may come across the British kinds can collect them for potting up this autumn. If not obtainable in this way, they can be easily purchased at a cheap rate, but in any case it is best at the start to repot in the autumn rather than the spring. The hardy kinds (not British) are catalogued, and the best sorts even can be purchased at cheap rates in small pots; this it would be desirable to do next month whilst they are still in good condition. F.



A Maiden Hair Fern (*Adiantum*) in a basket.

small or medium-sized plants of this character. There are frequently in such houses places where it would not be possible to keep flowering plants for any length of time with even a moderate amount of success, but where Ferns that are of an enduring character may be kept for months together. By growing a goodly number for such purposes there is a considerable saving in the quantity of flowering plants required to completely furnish a house, whilst the effect is in nearly every case considerably enhanced by the addition of the green foliage of the Ferns in contrast to or the subduing of the various colours of the flowers, particularly when these are employed in a liberal manner. In the case of tall-growing flowering plants, as Lilliums of various kinds, the Callias, the Tuberoses, and the Francoas, these Ferns constitute a most desirable and effective groundwork, in this manner looking much better than when many flowering plants

pots by the end of September, and 3-inch pots the following spring. *Asplenium hulhiferum*, *A. flaccidum*, and *A. diversifolium* are three of the most useful as well as being those of the easiest to propagate for decoration by the aforesaid method. *Asplenium lucidum* is best raised from seed; this is one of the hardiest of all greenhouse kinds, somewhat liable to attack by thrips, but these are easily overcome by the usual methods employed. Seedling plants of *Dicksonia antarctica* are extremely useful whilst in a small state, with the knowledge that the most promising will eventually make good specimens with ordinary care. This Fern, like the *Asplenium*, will withstand the sun's rays remarkably well. Of the *Adiantums* note should be made of *A. pubescens*, a very hardy kind; *A. venustum*, of Maiden-hair-like growth; *A. colpodes*, *A. decorum* and *A. Williamsii*, also partaking of the same character, are all good enduring kinds

4046.—**Show Ferns.**—If exotic Ferns are intended, the best genus to select from is the *Gleichenias*, and the best for exhibiting are *G. fiabellata*, *G. Mendellii*, and *G. spalnance*. I will add five others to these three, and if one only is selected I would choose the last-named as being the easiest to cultivate: *Davallia Mooreana*, *Dicksonia antarctica*, *Polypodium hirta cristata*,

Adiantum concinnum latum, and Davallia bulbata. Six of the best hardy Ferns for exhibition, and such as may be readily obtained, are: Athyrium Filix-femina var. plumosum, A. Filix-femina var. grandiceps, Lastrea Filix-mes var. grandiceps, Polystichum angulare var. plumosum, Scolopendrium vulgare crispum grande, and Osmunda regalis cristata.—J. D. E.

It is generally more a question of culture than variety, though of course a well-grown Adiantum Farleyense will carry more weight than any of the common Pterises or other Ferns which are of similar value. The following six, if well grown, will take a good deal of beating: Adiantum Farleyense, A. cuneatum, Aepelinum nidus, Nephrolepis devallioidea forestans, Gymnogramma Mayi, Microlepia hirta cristata, or the following half-dozen are nearly as good: Adiantum concinnum latum, A. Williamsi, Platycodon alcockiae, Lemeria gibba, Pteris nobilis, and Pteris argyrea.—E. H.

Amongst the chief kinds of Ferns grown for exhibition may be mentioned Adiantum cucullatum, A. concinnum latum, the beautiful A. Farleyense, A. formosum, Dicksonia antarctica, Microlepia hirta cristata, Cyathes decubata, Davallia crenariense, the Nephrolepis, and many others. These, however, are amongst the more important, and you will find much information upon them in recent issues of GARDENING. It is not a very easy matter to get thoroughly fine exhibition Ferns, such as one sees at the great exhibitions of this country—Shrewsbury, Wolverhampton, &c. If you are going in strongly for them, try again and get advice from "J. J."—C. T.

THE KITCHEN GARDEN.

KITCHEN-GARDEN NOTES.

THE present season will be remembered for some considerable period, for having passed the longest day and no rain sufficient to penetrate 1 inch of soil since the first week in March is enough to explain the more or less entire failure of many crops on which we rely for the coming winter's supply. Potatoes of all early and second early kinds must be a very light crop. Late planted ones, if rain falls soon, may yet produce a fair crop, but Onions, Carrots, Parsnips, and many other things, are looking very miserable, and preparation should be made at once for supplying substitutes or an extra supply of such root crops as can be grown after midsummer. To meet this undoubted deficiency I should suggest that Early Potatoes be lifted and stored at once, for after the skins are set rain will not make them swell any more, but will cause them to grow out wherely they are split for table. The land thus early set at liberty should be at once cropped with the following kinds—viz.,

CARROTS of the intermediate and Short Horn kinds will grow to a good size if sown at once, and they are never so good as when pulled and used fresh from the soil. Don't lift and store them, but cover the bed with a good layer of litter if frost threatens, but if it appears likely to continue, lift a portion of crop and cover the rest.

CAULIFLOWER, Early and Autumn, plant out directly a break in the drought allows, for they fill a gap in the list of first-class vegetables somewhat hard to supply by anything else, and Autumn Giant, if planted in succession, will yield a supply from September until Christmas by protecting the latest planted crop from frosts.

SPINACH of the round-seeded summer kinds comes on rapidly, and makes an excellent green vegetable. It can be grown in rows about 1 foot apart, or grown between other vegetables, such as Peas or Beans.

TOMATOES should receive extra attention as they enjoy heat and drought, and as the fruits can be utilised for salads or culinary purposes in place of other vegetables, they are doubly useful.

VEGETABLE MARROWS are excellent dry weather crops. Keep the soil mulched, and the roots well supplied with manure-water, and do not let any of the fruit get seedy, for they check the formation of young fruits. Plants put out now may produce useful crops.

TURNSIPS should be sown in extra large quantity to meet the great demand that is sure to

arise, owing to the failure of other root crops. Sow the seed thinly in drills, and as soon as the lines are visible thin out to about 1 foot apart.

WINTER GREENS, such as Savoys, Kales, Brussels Sprouts, Cabbage, Broccoli, &c., should be planted out as soon as space is available, or between the rows of second early Potatoes; but unless they can be kept supplied with water for some time after they are shifted, it is almost certain death to remove them, and in many places the supply of water is getting so limited that gardens are likely to get out of altogether, and where this is the case, it will be safer to let the plants stand in seed-bed until sufficient rain falls to moisten the soil.

SHALLOTS, Onions, and autumn-sown Onions are now quite ripened off, and should be stored at once, as rain would start them to root again, and detract from their keeping qualities.

JAMES GROOM, Gosport.

VEGETABLE MARROWS.

THESE are most valuable aids to kitchen gardeners, especially in hot dry seasons, for with but a minimum of care they will continue to produce abundant crops when many of the more succulent vegetables are dried up, and a great advantage attending this crop is that it can be grown in positions where hardly any other crop can be produced. I utilise any out-of-the-way corner for rubbish-heaps, and at this period of the year I pack the whole mass into large long ridges placing that which is most decayed on the top, and finish off with a coating of good soil, in which strong plants are at once put out, and abundance of Marrows are procurable until frost finishes off the supply. The following varieties are all good—viz., Long White and Ocean, or the running Marrow, is probably the best for most purposes, the fruits are excellent in all stages of growth, and if allowed to ripen off they make an excellent winter vegetable. The Dwarf Bush Marrow produces very fine fruits, but the shoots do not ramble like the preceding; excellent for small gardens. The Curled Vegetable Marrow is very much liked by many, but is not of such a robust habit of growth as the preceding. Pen-y-hyd is the name given to a very prolific variety raised in Wales a few years back; it produces an enormous quantity of fruits, but they do not attain so large a size as the preceding older sorts, but for cutting in a young state it is one of the most useful sorts that can be grown.

J. G., Hants.

WINTER SALADS.

THE advantage of having plenty of the above cannot be over-estimated, and though there is little difficulty in getting salad in abundance in the early autumn there is often a scarcity in the winter and early spring. Of late years there has been mere choice of subjects for the salad bowl owing to the taste for Tomatoes and the greater quantity of Cucumbers that are now grown. In this note I will only refer to such salads as can be grown with ordinary care and at moderate cost. To get winter salads in quantity it is necessary to make preparation early in August, and in cold late districts the sooner the better, as by sowing various seed at this date, such as Lettuce, Endive, and such like, there is no loss if they are sown a little early. If not sown too thickly they may be thinned out to make room for these that are to stand the winter. Many sow earlier than advised, but to do this requires plenty of room to winter the plants. When sown too early the autumn frosts are most destructive to full grown Lettuces, whilst others much smaller are rarely injured. Again, varieties have much to do with hardiness, as some are much more tender than others. Of late years we have had several new varieties introduced that were to withstand our winters, but they are no better than older kinds.

LETTUCE—As this is always in demand for salads, I will give a few words as to its culture in the winter, and those who require it in quantity would do well to depend upon two sowings; some make mere, especially those who require plenty of large Lettuces early in the autumn. To get a regular supply through the winter, beginning in October, I prefer to sow the end of July or early in August, and again the third week in August, and for a quantity of

young plants to put out in the early spring, two or three weeks later. To get Lettuces through the winter, seed should be sown on a dry sloping position sheltered from the east end north, as it is the winds that play such havoc with the plants when on the move after a long winter's rest. The earlier sowings—that is, those sown in August—will furnish nice heads early in October, and as we rarely get severe frosts to do much injury till the end of September, they should then be covered on frosty nights. If there has been delay in sowing for this supply, a little time will be gained by immediate sowing on a warm border in drills 1 foot apart, using the thinnings for a once-over, planting on a warm rich border. Good ground is necessary for this sowing, as a quick growth is required. When these Lettuces are large, if covering is objected to they may be lifted with a good bell and transferred to cold frames or under shelter, piling thickly together. By sowing in drills, there is no delay or check by transplanting. The second sowing in August will prolong the supply through the winter and will require protection or lifting. I generally plant these out of the seed bed much closer than usual, 6 inches apart each way on a warm border, and this is covered with temporary frames, a few lights placed over them, and some boards round the sides. This planting does not give large, full-hearted blenched Lettuces, but nice sized heads, as it will be found large plants decay in the winter months. With a little extra covering to severe weather in the way of mats this lot comes in about the middle of December and lasts some time. To continue the supply through the early spring some of the largest plants from the late sowing are planted thickly in frames, and these commence to grow very early and are large enough for salad, Cabbage Lettuces being the earliest to come in. In a mild autumn these sown now often continue the supply till nearly Christmas and with little protection. The varieties used for sowing for winter are often a matter of opinion, as some growers prefer Cos to Cabbage, but I advise both. I like Brown Cos (Hicks's Hardy Cos to sow early in August), using the Brown or Bath for the later sowing and to stand the winter. Of Cabbage varieties there are no better for winter than Hardy Hammersmith, Victoria, and Stanstead Park. I like the Cabbage varieties to sow late for early spring use as they come to sooner than the Cos. For the late sowing to remain in the seed-beds or to prick out thickly into frames, the Hammersmith and Stanstead Park are good. After housing or lifting the winter supply, it is necessary to air freely and keep free of decayed foliage. Even those who do not possess frame protections may have good Lettuces till late in the year when covered with mats or canvas. I often utilise dressed covers for this work, or rough wood supports, unrolling the canvas night and morning, and if a late lot of plants is secured on a protected border, these give a much earlier supply in the spring than plants raised to heat, and when a few can be planted early in the year in boxes or on warm leaves, they soon come in. Many shifts can be adopted to raise material for the salad bowl, as if short of Lettuces, a few pans or boxes sown in mild heat very few weeks, and cut over like Mustard and Cress, furnish nice salad at little cost, a quick-growing variety being used for the purpose. Last spring I found Golden Queen and Harbinger very good for the purpose.

ENDIVE.—I have devoted more space to Lettuces on account of their being liked by nearly everyone. Endive is not so popular, but a useful salad, and next in importance to Lettuce, being readily grown and sheltered through the winter. Much the same treatment is required, except that it is not wanted when there is plenty of Lettuces; but, growing freely in the late autumn, it is most useful. To get it large requires early sowing, that is early in July or earlier, but large Endive does not winter well. It is necessary to lift as advised for Lettuces, so that a large quantity early in the autumn requires a lot of room for shelter. I prefer to sow now, and to get medium-sized plants by October; these will then stand a certain amount of frost, and may be lifted later to take out the supply of Lettuces. If a quantity is required a sowing early in July is essential. These may be wintered in frames, lifting as advised for Lettuces, or they may be protected on the open border by covering. I usually plant a good

quantity rather close and protect with litter or mats, and if not too large they do well. Protection may also be afforded by tying up the plants and placing litter between them. There is no gain by sowing Endive too early, as it often runs to seed, and for plants to remain in the open not lifted, the Round-leaved Batavian is the best, very hardy, a compact grower, and readily blanched in the winter if placed in a Mushroom-house. The Green Curled varieties, though more showy, are not nearly so hardy. For an early autumn supply the green and Moss Curled are nice, but the latter will not stand frost. I consider the Green Curled and Round-leaved Batavian the best of all, using the first for the early lot and the latter for mid-winter use.

CORN SALAD is not used so much as it deserves, it being a valuable adjunct to the salad bowl and easily grown. I prefer to make two sowings, a large one early in July and one (a smaller) first week in August; this latter on good land and sheltered and well supplied with moisture, during severe weather throwing a little dry litter over the bed. In the summer this variety is not required with plenty of choice subjects, but in winter it is useful and of easy culture, the Broad-leaved Italian being the best variety. Chicory, a useful plant and easily grown, should be sown early in June, and the roots stored and forced in the winter months. It will give a lot of cutting, and half-a-dozen roots placed in a Mushroom-house fortnightly will give a good supply. When sown too early, especially on light soils, the plant runs badly. The large-leaved or Witloof is the best variety. Dandelion requires the same culture and to be forced, and is valuable for the salad bowl during the winter; indeed, with plenty of Dandelion, Endive is not missed. The value of Beetroot is too well known to need any remarks, and as the last named requires attention earlier in the season to get the roots large enough, I merely note its value as a winter salad. I would point out the value of small Beet for this purpose; and if Dell's Crimson is sown in June, it is of a useful size by the autumn, and keeps good a long time. I do not like coarse Beet mixed with green salad. Celery is equally useful in the salad bowl as in a plain state, and when the blanched tops are used they give a nice flavour, besides eking out the material in the spring when short of green salad. Mustard and Cress should be sown every fortnight. Watercress may be had all through the winter by sowing seed in pans or boxes and growing in frame, or it may be sown broadcast in frames and well supplied with water. I have also grown it in pots, pricking off a few seedlings into 4½-inch pots, and growing close together near the glass in a temperature of 55 degs. to 60 degs., watering freely in bright weather. Early in the year the last-named plan is useful to get early Watercress, and when cut over it continues growing, and may finally be planted out in a shady place for a summer supply. G.

better, with a rise of 10 degs. during the day. Regular attention to trailing and pruning the plants is absolutely essential. Cold water is a source of evil; that which is tepid should be used.—S. P.

— Probably the Cucumbers require more nourishment. Try them with artificiality in the water; one ounce to the gallon.—E. H.

Potatoes and manure.—It is only where manure has been applied with a free hand that this, or for that matter any other crop, is making anything like satisfactory progress this season. As a rule, I am by no means an advocate—quite the reverse—of using stable or farmyard manure in direct contact with Potatoes at planting time; but where this has been done, and applied liberally, the growth and promise is far in advance of those planted in other ways. A man who annually grows a field of Potatoes near here has the last two years had them planted by taking out for each row a square trench in much the same manner as for Celery—that is, flat at the bottom and about 9 inches wide and deep. These were filled full of manure (London dung), the sets being laid on the top, and covered with the soil shovelled out of the next trench. These Potatoes are now growing and promising better than any others in the neighbourhood; but if we get much rain from now onwards there will be a lot of disease among them, no doubt. Early Potatoes are turning out very badly here (in



Chicory, blancheted.

Sussex). In most places there is not a quarter of a crop. Fortunately, I think, I did not plant my main breadth until quite the middle of May, and if the rain comes kindly now, just as the tubers are beginning to form, they will do far better than the early planted lots. I have just given them a sprinkling of ammonia sulphate, which ought to make them move.—B. C. H.

4061.—Stachye tuberifera—This excellent does not take up much space, as the plants do not grow more than about 18 inches in height, and they are planted in good, rich garden soil. I plant them in lines about 18 inches asunder, and allow 12 inches between the plants. The tubers are in good condition to use in September, and they may be dug up for use all through the winter months; but the quality is not so good when they are used in January and February. They are certainly best in October. I do not earth them up at all. It is only necessary to cover the tubers if they should appear above ground, but they do not.—J. D. E.

— The cultivation of this plant is of the simplest kind. The tubers should be planted in drills 3 inches deep, and about 9 inches apart, the drills twice that distance. The plants do not require earthing like Potatoes, and they grow about 15 inches high. Your plants being only 3 inches in height at the present time it is plain they are suffering for the want of root moisture. If the dry weather continues give them a good soaking of water once a week.

The largest tubers are about 2 inches in circumference, and a little more in length. As a vegetable it is a poor thing. In that respect it is not equal to the Chinese Yam. Its only merit is that it makes variety in the winter season. If you take the tubers out of the ground before you want to use them you must keep them away from the air, or they will quickly shrivel up.—J. C. C.

INDOOR PLANTS.

4050.—Shading for a greenhouse.—Fresh lime, mixed with water, so as to make a rather thick wash, is very commonly used for shading, and answers sufficiently well, though, I believe, that in time it eats into the surface of the glass to some extent. A mixture of whitening and water may also be used, and has a cleaner and better appearance, but a small proportion of milk should be added, or some size be dissolved in part of the water, made hot, or else it will be all washed off by the first rain. Flour and water only (not paste), mixed smoothly to the consistence of cream, makes a capital shading, as when wet it becomes semi-transparent, and, consequently, admits more light to the plants beneath on rainy days, but as it throws only a light shade it is sometimes necessary to mix a little whitening with it. Any of the above may be put on with a broad flat brush (a soft house broom will do), or if not too thick may be distributed with a syringe having a coarse rose on.—B. C. R.

— Elliott's Summer Cloud is by far the best material for a permanent shading; but roller blinds are better still. During dull weather the plants are benefited by all available light. In the case of movable blinds they can have it. Flour made into the consistency of paint with clear, cold water, and put on to the glass with an ordinary paint brush, choosing a dry day, is the best cheap shading that I know; it will not wash off for some months. Lime made hot will adhere to the glass for a time, but is injurious to the paint where it touches it.—S. P.

4047.—Blinds for conservatory.—Tiffany is undoubtedly the best material to use for shading a conservatory. As you say the structure is a large one, are you wise in wishing to place the blinds outside? I think not, as there will not only be some difficulty in fixing and working them, but you will find a rough wind blow them into shreds. There is no more difficulty in fixing blinds inside than out, to be drawn up and down. Movable blinds are, however, not wanted for a large structure. If the Tiffany is fixed permanently for the season to the rafters inside that is all that is required.—J. C. C.

— If the house is very large you will find blinds rather expensive, although they are the best kind of shading, as they can be regulated according to the weather, and the plants are never in perpetual shade. During the early summer, for instance, it often happens that the sun is fitful. Tiffany is the best material to make the roller blinds, and get it as white as you can, so as to admit as much light as possible. The old idea of heavy shading has long been exploded. If deprived of a fair share of light plants suffer severely.—C. T.

— What is termed Rot-proof Scrim makes a lasting blind, and the shade is quite dense enough for all flowering plants or Ferns. I do not think anyone requiring blinds can do better than write to Edgington for samples and prices of different materials.—E. H.

Carnations and drought.—These beautiful summer flowers have withstood the trying ordeal of over three months' drought, and are now flowering splendidly; in fact, better than any other class of hardy flowers I grow. I cannot say that the individual blooms are fully up to size, but for height of stem and quantity of bloom they are fully up to the average. My soil suits Pinke and Carnations well, being a light sandy loam of good depth, in which layers strike root readily without any addition of fresh soil. I may add that I have not used artificial watering, having so many other things that were really dying for want of water while the Carnations look vigorous, but I have kept the surface frequently hoed and raked, as I find a good layer of finely powdered dust on the surface one of the best means of saving them in dry weather.—J. C. H.

4057.—Cucumbers in a greenhouse.—As a rule, Cucumbers do not succeed so well in pots as when planted out, certainly during the height of summer, when it is so difficult to keep the roots sufficiently moist without making the soil sour. How large are the pots? If 12 inches or more in diameter it would be as well to plunge them in, or surround them with, a bed of fresh tan or spent Hops; if smaller, better remove or break away the pots and surround them with rich turfy loam, well drained, and made firm—to plant them out, in fact. Possibly the growth is too crowded and weak to perfect fruit. Of course, they get plenty of nourishment in the shape of liquid manure.—B. C. R.

— There are various causes for the premature decay of Cucumbers, such as overcropping, dryness at the root, also stagnation about the roots, caused by too much moisture or the want of proper drainage. Again, another great source of the small fruit turning yellow is fluctuation of the temperature. If no fire heat is employed on a cool night exceeding a hot day the plants receive a check, which results in a stoppage of growth, causing the small fruit to decay prematurely. This is the primary cause of defective cultivation in greenhouses. To succeed with Cucumbers really well the temperature should never fall below 65 degs. and should not

ROSES.

OWN-ROOTED TEA ROSES.

TEA ROSES on their own roots are best, because if well cared for they are virtually indestructible. Place a little ridge of burnt earth or something similar round the base of each plant when first set in, and there will always be life below ground that will push out vigorously should the top be injured by stress of weather. But many planters of Tea and other Roses do not give their plants a fair start at first. The soil for Teas must be deep, well drained, and fairly rich, though strong, rank manure is not desirable, as its tendency is to make the soil close and sour. A good many years ago I turned out a lot of home propagated Tea Roses in various positions. That season I remember I had an abundance of home-grown Teas, mainly because there was a better lot of cuttings to work upon. One lot, consisting of Catherine Mermet, Niphotos, Homère, Marie van Houtte, and other kinds, was placed along the front of a Vine border, where the soil was deep, well drained, and rich. With the exception of Niphotos, these plants along the front of the Vine border did famously, and formed immense bushes from which a supply of fine blooms could always be obtained. Another hatch of plants was set out in a warm south border, and these also were a success, producing the same year they were propagated beautiful blooms. Other plants of similar sorts were placed in various positions, but the plants on the Vine border were the most successful. I have long held the opinion that for anything we wish to grow well it is both better and cheaper to thoroughly prepare the ground first, and Tea Roses must have a dry, warm, deep bed. The

PROPAGATION OF TEA ROSES under glass is as simple as striking Verbenas, and well-nigh as successful. Cuttings which have been obtained from plants under glass are firmer and riper than any growths made in the open ground can possibly be, though as regards the selection of the wood for cuttings, I do not care how old it is. In a propagating bed where there is a temperature of 75 degs. to 80 degs., and an atmospheric heat of 60 degs., all cuttings, except those which are very soft and young, will strike with a small percentage of loss. I think cuttings from wood of more than one season's growth are even better than younger stuff; at any rate, it is a decided advantage to have a heel of old wood at the base of the cutting. Cuttings may be rooted from single buds, but unless the buds are strong the growths they make will be weak, and it takes a couple of years to make them into plants. I have struck Teas and other Roses in pots plunged in Cocoa-fibre in a genial bottom-heat, and I have rooted them by simply thrusting the cuttings into the moist fibre without potting, and have invariably obtained more plants from the same number of cuttings when pots are not used for striking. The reason is, I think, obvious; Cocoa-fibre is always in one even condition as to moisture, and that condition can be maintained from the time the cuttings are inserted till they are lifted for potting without having received any water beyond a very light dewing over during the process of rooting. This equable condition of moisture without the use of the water-pot is worth everything in the work of propagation. Water kills more cuttings than all other causes of loss put together. I like good-sized cuttings, but the wood is too valuable to use big pieces, and by the one-hand or eye system one has to wait a long time for strong plants. This is why a grafted plant has an advantage over the own-rooted plant at first, but as the years roll round the advantage is on the other side. It is true that in course of time if the stocks are hurried in planting the Rose forms roots of its own, and then, I think, the stock begins to become an embarrassment, and would be better away. As regards layering Roses, it is a very old and a very good process, but it is slow. Many years ago, when it was the fashion to have large beds of Roses in gardens of one kind, such as the Provenço, York and Lancaster, Maiden's Blush, and other old sorts which are now being sought for again in some places, the beds were always kept full by layering the strong shoots, this being usually done in February. So far as regards open-air propagation, layering is decidedly the best plan to adopt, and when the

strong old plants of the best and hardiest varieties have been obtained, there will be plenty of own-rooted Tea Roses with hardy constitutions. H.

BUDDING ROSES.

JULY and August are the two best months for budding, the former month being preferable; but in cases where large quantities have to be done, or the stock of any desired variety is small and weak, it must depend in a great measure upon when one can find the buds. To ensure a fair amount of success all stocks should be budded before September, as the sap on which the bud enters itself does not flow so freely after that time, and consequently the bud has not so good a chance of getting "set" to the stock. I prefer the stocks to be growing fairly well, not rampant, or the bud is flooded with too much sap. It is well to have them of medium growth only, and to secure this end I never manure my stocks when planting, finding they grow quite strongly enough for successful budding without any such assistance, and that a steady summer's growth tends towards setting the bud earlier and firmer, both of them getting more matured and better able to withstand winter frosts. If grown too strongly, the bark sometimes swells completely over the bud, smothering and so killing it. This last point applies more particularly to the seedling Brier, a stock that often swells from the size of an ordinary knitting needle to as large as 2 inches in circumference, if growing at all strongly and upon rich ground. Supposing, then, that the stocks are not on too rich a piece of ground, they may be budded as soon as sufficient sap has risen to allow the bark to be easily lifted. Let the Rose-shoot you intend working from be as nearly as possible in the same stage of growth as the portion of the stock you are operating upon, so that they may heal over and unite more perfectly. If this be attended to, they will be set in from two to three weeks, when they may be looked over and any failures rebudded a little higher up the stock. By getting this operation done fairly early in the season fewer failures will result, and one has the opportunity of inserting a second bud where failure has attended the first attempt. It is by no means necessary to have prepared stocks for budding upon, as any strong growing Rose may be converted into a more desirable variety. Where a good plant of any inferior kind exists it is sometimes better to bud a more desirable kind upon it than to destroy it and replace with a nursery-grown plant of the favoured sort. In many cases one has a plant under glass that is growing vigorously, but is unfortunately of some little-desired variety. Almost any variety of Rose will do excellently upon such a stock, and it would be wise to so utilize the established roots of such Roses.

THE MANETTI is one of the staple stocks for dwarf Roses, and if properly budded they will do excellently upon it, and not produce the quantities of suckers too often found upon plants worked upon this stock. Some time ago I advised that all dwarf stocks should have a little earth drawn up to them. If this plan has been followed, the benefits accruing from it will be very patent during the budding season. Before inserting any buds remove the soil as much as possible without injury to the stock, getting as near to the crown of it as you possibly can. Let this operation be done very carefully, so as not to bruise the bark. The lower the bud can be got the better will it be as regards suckers, as you thus leave a very small portion indeed of the original stock to produce them; otherwise they are almost certain to emanate from the space between the bud and crown of the stock, robbing the Rose, and unless constantly attended to eventually resulting in the death of all but the stock itself. On the other hand, if properly worked, very few suckers can result, and the Rose is much more inclined to strike off upon its own roots, and thus receive additional support to that afforded by the stock. In the case of all dwarf stocks, one bud to each is quite sufficient. Seedling and struck cutting Briers may be treated exactly the same as the Manetti; so also may the De la Greffierie and any of the Polyantha or other Roses that are grown from cuttings in the same way, and which are much used by some few amateurs as

HEDGE BRIERS for standard and half-standard Roses require somewhat different treatment, although the actual operation of budding is the same. As soon as the Briers in this form commence to grow, remove all of the young shoots, except the two or three you intend working a Rose upon. The exact height of these must be decided on according to the height you wish your future Rose-tree to be. When the remaining growths are a little thicker than an ordinary lead pencil and the bark at their base is efficiently matured, they should each have a bud inserted into them and as near to the main stem as possible. One bud in each of the two or three shoulders will be sufficient. We now come to a very important point in the operation of budding Roses—viz., what stock to work certain varieties upon. All Roses, of what-ever class, will do well upon either of the Brier stocks; but it is best to put only strong growers upon full standards of the hedge Brier, as the weaker kinds do not possess sufficient strength to keep the Brier roots in active growth and the stem healthy. It will not do to allow suckers to grow out occasionally with this object in view, as they would soon take the whole of the sap, and the Rose itself would dwindle away and die. The majority of the Hybrid Perpetuals, Bonbons, Mosses, and strong growing Tea-scented Roses do well upon the Manetti, notable exceptions among the first being Captain Christy, Xavier Olibo, Marie Verdier, Sultan of Zanzibar, and Her Majesty. The actual operation of budding may be carried out by the most inexperienced with fair prospects of success if done cleanly, quickly, and neatly, after a flower has been cut from a shoot about a week or ten days and the remaining eyes are nicely prominent without being actually started into fresh growth is an excellent time for budding, also when the prickles of a half-matured shoot will snap off readily when touched. If these hang to the bark, as a general rule the bark surrounding the bud will hang too, and this would necessitate too much force in removing the small portion of wood. It is essential that the bud be in as nearly a ripe condition as possible consistent with an easy and free removal of the wood from the bark, also that the seat of the eye be on level with the bark and so rest upon the wood of the stock. R.

4067.—Preparing ground for Roses.—A stiff soil resting on clay is the very ideal of a soil for growing Standard Roses, and for dwarf on the Brier-stock. Never mind about its being poor, you can enrich it with manure. You need not disturb the subsoil unless the clay retains water, but dig over the space two spits deep and mix plenty of manure with the soil as the work proceeds, not forgetting to leave a thick layer of 9 inches under the surface. In a bed 4 yards wide you may have two rows of standards on 2 foot stems, and two of dwarfs on each side. The fact that the White Rose of which you speak thrives so well proves what I say that your soil is very suitable for Roses, and if you get it up to a proper condition as regards the application of manure, you will find that even standards will live and flower grandly for a number of years, especially such varieties of H.P.'s as Merville de Lyon, Boule de Neige, General Jacqueminot, Captain Christy, Alfred Brunnner, Madame Nachary, and Duo de Rohan. The ground should be prepared at once, and the Roses planted early in November.—J. C. C.

Trench the ground up from 2 foot to 3 foot deep, but do not bring any of the bad subsoil to the top, though. A layer of manure should be placed on the top of the broken-up bottom spit. When the whole has been trenched up give the surface a heavy dressing of the best manure available, and fork or dig it in. Do the preparation work now, and leave it to the action of the weather till November, and then plant. The reason why so many people fail to grow Roses well is in the lack of preparation at the beginning. Roses will not thrive with their roots thrust into hard, unmoved, unmanured land.—E. H.

In one point you are at least fortunate—viz., that the soil you describe is just the thing for Roses, and with proper preparation and due care afterwards you may look forward to a perfect feast of Roses in the course of a year or

two. You had better commence by trenching the ground well to the depth of three spades; but do not bury the top spits—throw it on one side, and keep it still on the top. The turf may be pared off 4 inches thick, and be stacked up by itself; when partly rotten it will do capitally with a little leaf-mould to work round the roots when planting. Throw some brickbats or the like in the bottom of each trench and if the water "lies" about put in a drain to carry it off. Work in plenty of rough manure in the the third spit, and some of a finer nature near the surface. It will still further improve the ground to burn part of the clay with small coal or wood, and use the rough ballast down below, and the fine siftings near the top. Take care to employ the plants on the Brier-stock only; the Manetti is useless on such soil. Plant in October.—B. C. R.

— As your soil is poor but stiff, and of such a uice depth as 3 feet, there should be little difficulty in getting it into good order for Roses. I would not use any marl in your case, nor

will be at hand to fill it in and so finish. I cannot think that your soil is quite so poor as you imagine, seeing Strawberries are growing so strongly.—P. U.

— It is necessary to have a good moderately heavy loam, especially if fine typical blooms are desired. It is useless to grow Roses in poor ground, and if the staple is naturally sandy, wanting in fibre, so to speak, then new soil must be brought to the garden. If a few beds are to be planted, first get the ground in readiness, not forgetting to dig in a fair allowance of manure, working it thoroughly into the ground. If left in lumps, little benefit is received by the plants. In soils at all poor there must be an ample allowance of manure—not the kind of material one uses in a hot-bed, but good cow-manure. Always take the greatest care in planting. A distance of 3 feet is, as a rule, sufficient for the plants to be apart, but much depends, of course, upon their size, in the variety. When planting, spread out the roots carefully, and place a little of the finer part of

sufficiently matured, or you prune it back too hard each season. Which of these causes it is in your case you must judge for yourself. With me it is one of the freest of all Roses, and it by no means a difficult variety to ripen. If you have been cutting away the long growths, you have also been removing the best of your flowering wood, provided it was fairly well ripened.—P. U.

THE HOUTTYNIAS.

A SMALL genus, containing only three species of very remarkable plants, they are nearly allied to *Saururus Loureiri* and *S. cornus*, and are the only hardy representatives of the natural order Piperaceae. They are beautiful and graceful as well as curious plants, and are well suited for the bog-garden, where in a rich peaty soil they present quite a tropical appearance. They are all perfectly hardy in the south, at any rate, and may be increased readily by division.

H. CALIFORNICA.—This very remarkable plant is also known in gardens under the name of *Anemionis californica*; it is now, however, placed under *Houttynia*, and along with other two species forms the entire genus. It was first found by Nuttall at San Diego, Upper California, and later by Douglas, who sent specimens home. It is a true perennial, the leaves nearly all rising from a fasciculated rootstock. They are always on long stalks, the blade elliptical, nearly cordate at the base, blunt, and the edges entire. The flower-stem is very hairy, erect, longer than the leaves, and bearing numerous small inconspicuous flowers on an oval cone. This is surrounded by six large spreading bracts, the inner three spotted with red, the others white. These bracts are very persistent, and remain fixed long after they have turned brown. It is a useful plant for the bog-garden and very easily managed. Increased by division. It flowers June to August. The accompanying figure gives a good illustration of a robust specimen.

H. COMATA, figured in the *Botanical Magazine*, 54, tab. 2731, is a perennial, with a stout creeping root throwing out a few fibres. It is quite distinct in habit from the above, the stems growing from 1 foot to 2 feet high, erect, and rarely branched, the leaves alternate, cordate at base, pointed, with entire margins. The spathe or bract resembles a corolla, and consists of four large pure-white spreading leaves from the base of the spadix or cone of flowers. Thunberg first found this curious plant in Japan, where it appears to be known as *Dokn Dami*, or *Kijun-ki*, growing in abundance in ditches by the wayside. It is also found in Nepal and Cochin China, where Loureire found it only growing in gardens. A useful companion to the above, flowering July and August.

H. CHINENSIS, which was first named *Gymnotheca chinensis* by Decaisne, is a native of China, and appears to be a very ornamental plant. I have not seen it in cultivation, though apparently well worth it. D.

Primula sikkimensis.—There is doubtless much variety in this species. I have had plants with very thin scapes 3 feet high, but the most glorious specimen I have ever seen was a plant with upwards of thirty stout scapes about 18 inches high, some having as many as thirty flowers upon at once in an evenly-balanced umbel, and all the scapes carrying bloom at the same time, continuing to do so for more than a month, and to-day in very good form, after the very rainy and windy weather. I particularly mention this plant because it is at least five years old, and some of us have hitherto imagined that good results could only be had with younger plants to be raised annually for succession. The plant, I may say, has not been grown in a wet place, but an ordinary border, screened, however, from midday sunshine, where doubtless it runs a steadier and longer life course.—W.

4061.—A plague of cockchafers.—Possibly others will give you better advice, but I was troubled similarly once with this pest, and the remedy was to syringe with water in which was placed a little soft-soap and paraffin—a very small quantity of the latter. They did not care for this reception, but the great thing is not to use the preparation too strong, otherwise the remedy will be worse than the evil. Nothing



Houttynia californica. Engraved from a drawing sent by Mr. C. A. Orrell, California.

would I turn the soil to the top. If you "bastard-trench" the ground well, and add a fair amount of manure, I do not see that it will be necessary to do anything else. Bastard-trenching consists of the following operations: Take out a trench from one end of your plot, say about a foot deep and eighteen inches wide. Remove this to the other end of your plot, where it will be ready for filling in the last trench you open. Having removed the first foot of soil spread a good layer of manure in the trench, and proceed to turn the subsoil bottom upwards, working it as deeply as your spud will allow. Pig-manure is about the best you can use, but any well-decayed dung and rubbish will answer. London manure is also very good, containing a much larger proportion of droppings than ordinary farmyard manure. Now set out another breadth of 18 inches, and as each spit is lifted let it be thrown over into the open trench by its side. Shovel up the loose soil from the trench you have formed last, manure and turn over the subsoil, and so continue until you arrive at your last trench, when the soil already carried there

the loam over them, into which they will send their delicate fibres. Thick roots without fibres may be cut back hard, but use the knife cautiously. Bold surgery of this kind is easy to perform, but injudicious "hacking" can never be remedied. Avoid deep planting, covering the roots with about 4 inches of soil, and if the trees are standards place a stake firmly to each, to prevent the stem swaying about in the wind. It is essential not to disturb the roots, otherwise they will never take hold of the soil. The best time to plant is late October, as the soil is then in a sweeter condition, moderately dry, as a rule, and the trees have a fairly long season to recover themselves before they meet the trials of winter. A dressing of well-decayed manure on the surface will not be money wasted.—C. T.

4058.—Rose W. A. Richardson.—I would rather see a Rose so recently planted grow freely than flower over much. The Rose is doing well enough; let it grow, and train in all the strong shoots. It will flower in due time.—R. H.

There may be two reasons why your plant does not bloom. Either the wood does not get

ORCHIDS.

ZYGOPETALUMS.

"MARK HUNTLEY" asks me to give him some advice about these Orchids? Now, if I do this I shall confine myself patriotically to the old genus as founded by Hooker, and I think this is what my friend means and wants. Indeed, he refers to the very type species, *Z. Mackayi*, for the genus is used in the present day for anything that one does not know, just calling it a *Zygopetalum*, and there is an end of the trouble. However, I do not profess to know the plants with the accuracy of a Bentham or Hooker, but I will here just record some few of this old genus, which will not require much care in their culture, and which will give you a host of beautiful flowers in return, which last a very long time in perfection either left upon the plants, or they may be cut for the decoration of the rooms of the dwelling-house, or they may be used for purposes of personal adornment, and in each and in every position they may be made to fit pleasingly and well. These plants are strong growers and large rosettes. They, therefore, require a larger space in which to ramble than do many of the Orchid family. They require a large amount of drainage material, for as these plants require a quantity of water during the growing season, so must this be enabled to pass away quickly from the roots, so that everything about them may be kept in a sweet and clean condition, for without this it is done you cannot look for success, and this indeed being neglected is the cause why I see these plants fail to give satisfaction to so many. They want a fairly light situation, although they do not like the bright sunshine, therefore shading should be provided to be on over them when this luminary shines. For soil use about equal parts of good peat-fibre and chopped Sphagnum Moss, and in potting the plants use some sharp sand amongst it occasionally. Pot the plants upon a small elevated mound, and press the base firmly about the plant. Some persons take the plant out of this soil every season, but I do not hold with this plan, as a rule, to be adopted; neither do I appreciate those careless growers' system who will allow the plants of this genus to grow year after year and never give heed to the renewal of soil until the plants get weaker and weaker, like my friend, "Mark Huntley's," and they refuse to flower, this being the second year they have omitted to send up a single flower-spoke. In the growing season they like the heat of the Cattleya-house, with somewhat more shade, and the syringe may be used more freely upon them than upon the Cattleyas, and with a much larger amount of water to their roots, and in the winter months any house with a fair amount of moisture in the air, and a temperature of 58 degs. or 60 degs., as the lowest reading, will suit them admirably. Treated in the above manner, renewing the surface-soil every spring, and picking carefully away any decaying or sour soil, I think no one would have the slightest cause to complain that their plants of *Zygopetalums* failed to produce flower-spikes.

Z. MACKAYI.—This plant is mentioned in my correspondent's letter, and therefore I put it first on the list; moreover, it is the finest in the series here given. It has been a constant plant in our stoves, I think, for nearly seventy years, and I do not think has ever been lost to cultivation since its first introduction by the worthy man whom it commemorates. I have seen some splendid specimens of it bearing many spikes, some 3 feet and 4 feet high, bearing many flowers, each of which measured fully 3 inches across, the sepals and petals being yellowish-green, blotched with brownish-purple, and the large lip spotted and thickly streaked with purple or violet, and which last a very long time in perfection, yielding a delicate and grateful perfume in the autumn and winter months.

Z. INTERMEDIUM is similar to the above; indeed, it is frequently to be found in gardens under the name of *Mackayi*; but, however, may be distinguished from *Mackayi* by its smaller form, its longer, narrower leaves, as well as by its shorter spike and smaller flowers, the colours also are more or less duller, but it is a very beautiful plant.

Z. CRINATUM.—This is a plant which frequently is called a variety of *Mackayi*, as likewise is the last. This may be the case in fact, but the present plants are very distinct,

inasmuch as the flowers much resemble the typical form, but the plant is very much dwarfier, the spike, too, is also shorter; indeed, this may be grown by persons not having room to accommodate such a large plant as *Mackayi* hsoomes, whilst the flowers, which are very little inferior in size, but fewer on the spikes, are similarly coloured. There is, however, a variety of this plant which has rosy-red or crimson stripes in place of the blue or violet. Amongst other kinds there is *Z. rostratum*, having very large white flowers; it, however, requires greater heat, and does not grow with the kinds previously mentioned. *Z. maxillare* is a smaller flowered kind, having a lip of bluish-violet, but it requires to grow in the stems of Tree-Ferns, and is, therefore, not recommended to the amateur grower. *Z. graminifolium* is another plant similar in colour, and with just the same habit; it is a beautiful little species, for which we have to thank Mr. Sander, of St Albans, for introducing to our notice, but it is scarcely an amateur's plant, whilst *Z. Burkei*, introduced by the Messrs. Veitch, of Chelsea, with its white lip and green sepals and petals, stands somewhat in the same category. I think I have brought before my readers' notice the heat of the showy species and varieties, and those, too, are the easiest to grow, so with the above remarks I hope my friend "Mark Huntley" will be satisfied and be able to get on with his *Zygopetalums*. MATT. BRAMBLE.

RODRIGUEZIA SECUNDA AND OTHERS.

This is a very old and pretty Orchid, and a somewhat variable kind in its depth of colour. The spikes sent me by "M. Johnston" are very bright and showy. It is widely spread over tropical South America, consequently it may be expected to vary somewhat; but the plant first became known to us from the Island of Trinidad, and it used to be a frequent occupant of any box of Orchids received from South America in my young days, and I observed that the plants that came from the warmest parts were usually the deepest in colour, and I found that during their growing season they liked to have a good heat, and to be kept in a very moist state, and during the resting season their hulks must be kept in a fairly moist condition, and not subjected to the drying influence which was so prevalent in the earlier days of Orchid culture, when every Orchid had to have a decided dry season, and be shrivelled; but now a better system is adopted, for by lowering the temperature, the plant or plants can be kept and rested far better, because they can be furnished with sufficient moisture to maintain the growths in a plump condition, and this enables them to start away and grow with strength and vigour at once, without the expenditure of time, in making up the growth, or having the new growth from a shrivelled and worn-out old hulk, and these shrivelled and worn-out hulks render the plants so old and worn-out looking, and it gives them such an untidy appearance. I recommend the lady who writes to me to grow this plant in a hanging position, either in a shallow pan, a small basket (see our p. 267), or upon a hock of wood, and I must confess I like the hock system the best for this plant, and I use for it Sphagnum only in this case; but if a small shallow pan be used I would drain it well, and I would use with the Moss some little good peat-fibre, from which all the fine soil had been removed, potting it very firmly, for I have so frequently seen this plant go wrong from being so loosely set in the soil, and this is one of the chief reasons why I like hock culture for this and many other of these small-rooting plants, because they can be kept firmly fixed by the copper wire that is used in fixing them. *Rodriguezias* like an abundance of water, the heat of the Cattleya-house, and a nice moist atmosphere during the growing season. The following are one or two of the best and most floriferous kinds:—

R. SECUNDA.—A small-growing plant, having small hulse and dark-green leaves, which form a beautiful background for the sanguineous flowers, which are thickly set upon the short spikes, and which all stand in a one-sided fashion.

R. CANDIDA.—Now this plant I need to grow under the name of *Burlingtonia*, but according to the modern theorists the latter genus is a synonym, and so for once I accept this theory

and adopt the new order of things. This plant is a stronger grower than the last named, but I like for this plant the hock system of culture best. The flowers are produced on pendulous spikes, they are large and of the purest white, with a stain of bright-yellow on the lip. It is a most desirable plant.

R. FRAGRANS.—This plant resembles the preceding species in the colour of its flowers; they are about of equal size, and they yield a most delightful fragrance which much resembles *May-hlossom*.

R. VENUSTA is a plant which is smaller in its growth than the last-named although I have found some folks who make them to be the same species, but with this I cannot agree. The flowers are not half the size, they are pure-white, stained with yellow in the lip, and they do not possess any fragrance which renders the last-named kind so very welcome, especially by the ladies. The above-named plants are all worthy of a place in any and every collection of Orchids, and all of them will thrive admirably on good-sized hocks of wood.

MATT. BRAMBLE.

4052.—**A garden fence.**—There is nothing better than a good Holly-hedge, but it grows so painfully slow at first, especially on some soils, that one hesitates about recommending it. If the fence forms a boundary, evergreens, such as Yew-tree or Arbor-vita would hardly do, or else they are capital shelters and blinds. White Thoro and Privet in mixture makes both a good shelter and grows rapidly, and when well established will form a good fence against stock.—E. H.

—This question is not very clear, as there is no information as to whether there is an existing fence or not, and if protection is wanted outside of the present boundary. A close wood fence 6 feet high is very suitable for a garden, but it does not give much protection against spring frost. Supposing there is an existing fence, a line of Lomhardy Poplars beyond that will quickly grow into a thicket, and afford shelter sooner than anything else. If planted out 4 feet apart they can be grown in the form of a hedge any height or thickness you want.—J. C. C.

—There are so many kinds of quick-growing subjects suitable for fences that it is difficult perhaps to choose the right one for all positions. Thuja Lobbi is perhaps the one that will grow the fastest up to 30 feet high if needed, and it makes a capital screen also. The common English Yew is another quick-growing evergreen, preferable to any other where a fence up to 10 feet high is required. Common Holly makes a thick and warm screen, but does not grow so fast. Portugal Laurel is another fast-growing subject, but requires more space in width. Evergreen Privet is of rapid growth, but is not quite so firm as the others; still, it makes a good screen. Quick is undoubtedly the best of all hedges where cattle are kept, but some years are required to get a really good Quick fence. Whatever is chosen, all the difference is made in its progress by the manner in which it is planted. The ground should be trenched 18 inches deep at least, and plenty of manure added at planting time, not hurrying it too deep either, afterwards mulching the surface to prevent evaporation of moisture from the soil during the summer. With the exception of the Quick all the other subjects are best planted in the early part of April. Should dry weather set in for any length of time during the months of May and June the plants will need attention in watering. Whatever pruning is required should be done in February, or March at the latest.—S. P.

4028.—**White-flowered plants for cutting.**—If you exclude trees and shrubs, the hardy plants that flower before the Pinks are mostly of low stature. The Double White Rocket and Brompton Stocks might possibly flower before the Pinks if they were given a warm position. The Perennial Candytuft (*Iberis coronifolia*) and Snow in Summer (*Cerastium tomentosum*) are two low-growing plants that may help you with white flowers. Amongst shrubs that bloom early I may mention the White Lilac, *Dutzia gracilis*, and Syringa.—J. C. C.

TREES AND SHRUBS.

CHOICE SHRUBS.

RETINOSPORA AUREO RETICULATA.

CONIFEROUS plants do not, as a rule, do at all well in a town garden; but this plant (here illustrated) is quite an exception to the rule. For window-boxes, when the plants are young, or for a lawn this Japanese Conifer has no superior. It should be much more largely planted than is the case at present.

PLANTING EVERGREENS IN SUMMER.

I AM not aware that anything new can be said in favour of planting evergreen trees and shrubs during the summer months. The questions bearing on this matter are two—the probable results as compared with spring planting, and the effect that a hard winter has on newly planted subjects. As regard the first, I have no hesitation in saying that the best results will be obtained from summer planting in all cases where the plants to be moved exceed 6 feet in height, provided they have only to be moved from one part of the grounds to another; but in the case of large plants that have to be brought long distances by railway, I should prefer to wait until the middle of September. When practicable, I prefer to prepare all the plants to be moved if they have stood in the same position more than four years, and if they exceed a height of 6 feet. The preparation should be made in the previous October, and should consist in digging a trench round the stem of the tree 2 feet deep and 1 foot wide. The distance that this trench must be from the tree will depend on its age and size; for a tree or evergreen shrub 8 feet high, the inner side of the trench should be 2 feet from the stem all round, and the width should be in proportion to the height. In digging out the trench all roots met with should be cut clean asunder; the trench may then be filled in again and left in that state. It will be found, when the time arrives for removing the tree thus operated on that every root cut asunder has broken out into a mass of fibres, and it is considered that these fibres are of far greater benefit to the tree after removal than the single root would have been if left undisturbed until the time of lifting. Experience proves this, for in practice I find that all trees or shrubs prepared in the way just described suffer much less than those not so treated; in fact, the percentage of living trees thus managed is far in advance of that of the other. The question as to the effect that a hard winter has on newly-planted trees is one that demands the serious attention of intending planters. It must be taken for granted, I think, that a shrub or tree only recently removed is not in so good a condition to withstand the severity of a long winter as one that had not been disturbed. In my own experience I have had trees removed during the late summer months that have stood to all appearance sound and healthy up to the time when severe frost has set in, then become brown in the foliage and ultimately die. This, however, to my mind does not to any serious extent injure the cause of summer planting, because it is only in the severest winters that trees thus suffer. On the contrary, it cannot be too well known that there is a decided gain by adopting summer planting. If a tree is moved towards the end of July, it will in great measure have completed its growth for the year, and if moved as soon as it has done that it will

get, other conditions being favourable, pretty well re-established before growth commences next season, and under ordinary circumstances it may be expected to make a fairly good growth the first year after removal; but in the case of autumn or spring planting it generally takes the whole of the next season to recover, and makes little or no growth. There is just one particular time in the summer eminently favourable to removal—I mean that period of the tree's first summer growth when it comes to a standstill. Many trees make two growths in a year, and the best time to move them is in the interval between the first and second growth. A little observation will enable anyone to detect when that time occurs, but as the habit of different trees varies, the selection of the time for

the A. mollis type I think it is best to purchase seedlings. Named varieties can be obtained at a higher rate. I would leave the selection to the dealer who supplied them, but a few good varieties of the Ghent type are Admiral de Ruyter (deep red), Altacalensis (bright yellow), Carnes elegans (pink), Coccinea major (scarlet), Cupree splendens (pink and yellow), Elector (orange-scarlet), Sanguinea (crimson), Mirabilis (delicate pink), Horteri (yellow), Viscose floribanda (white), and Decorata (pink).—J. D. E.

The best varieties are Mollis, which have so many shades of colour; the Ghent type also possesses a great variety in colour; most of them are richly perfumed. Amens and pontica are early free-flowering kinds, with smaller flowers, but interesting and useful. The month of April is the best time to plant the bulk of sorts. It is needless trying to cultivate these Azaleas in the natural soil if there be the slightest trace of lime in it. Where the soil is peaty, or even sandy loam, they may be grown with success if leaf-soil be freely added. Where the soil is clay or heavy in character the whole of it should be removed to a depth of 18 inches, replacing it with peat and leaf-mould, two parts of the former to one of the latter. If the former can be easily obtained dispense with the leaf-mould entirely, but where peat is scarce the leaves may be used to economise the peat. After planting, if the weather be hot and dry, water should be supplied to the roots freely to induce the roots to push quickly into the new soil. A mulching of half-decayed leaves spread on the surface 3 inches thick checks the evaporation of moisture from the soil, and renders watering less necessary. Freshly-gathered cow-dung laid on the surface 2 inches thick directly the flowering season is past is a capital stimulant to plants that have somewhat exhausted the soil by free growth and continual flowering for, say, ten years.—S. P.

4053. — Quick-growing Ivies.—Rægneriana will grow quicker than any other variety, as much as 4 feet of growth being made in one season. The Irish Ivy follows next, and is perhaps the best of all for clinging to walls without assistance, or in fact but little, the vigorous growing young shoots do require occasional tacking to the wall. Any ordinary garden soil will grow Ivy. If it is poor in quality, add partly rotted manure freely. Ivy is a moisture-loving plant, and is much benefited by copious supplies of water during the spring and summer months when dry, and occasional doses of liquid manure is a great help to a speedy growth.—S. P.

Two of the quickest growing Ivies are the ordinary Irish and Emerald Gem, a green as it is also called; but any of the stronger growing green-leaved kinds will make quick growth and the strongest of the variegated kinds. Emerald Gem is, however, very robust, and makes more rapid progress than any kind I know. It is a very fine variety too, the leaves abundant, large, and rich glossy green in colour. Half the battle is, however, to get good plants, strong and healthy, and, if they are in pots, they may be planted at any season of the year, even in summer, provided that they are properly watered afterwards, and the soil is fairly good. Many seem to think that Ivies will grow anywhere, and stand any kind of treatment, but this is a mistake. If the position is so to say rough, an outbuilding or anything of that nature you wish to cover, then select the large-leaved Rægneriana, which will grow quickly, but it is rather too bold for a conspicuous position in the garden. Avoid the small-leaved variegated kinds, which are very liable to coax into



OUR READERS' ILLUSTRATION: Retinospora aureo reticulata. Engraved for GARDENING ILLUSTRATED from a photograph sent by Mrs. Stafford, Wallcut, Ebbick.

removal may extend over three or four weeks, according to the character of the subjects to be operated upon. J.

4049.—Hardy Azaleas—These are truly beautiful plants for culture out-of-doors, and no garden should be without them. There is no doubt that a good light peat soil is best for all the hardy Azaleas; but it is an error to suppose that they cannot do without peat. Leaf-mould, mixed with light sandy loam, is excellent for them; if the loam is rather heavy add some coarse sand. Turf loam is best, and if this can be obtained, and leaf-mould to mix with it, peat may be dispensed with. There are two classes of them, the old hardy Ghent Azaleas, as they are called, and the Azalea Mollis, which have been introduced from Japan more recently.

respectable growth and require care. The best time to plant *Ivy* is the autumn or the spring, and these seasons should be selected unless the plants are in pots, then as previously mentioned it might be done even now. *Ivy*, as a rule, like a moderately shady spot, not exposed to keen winds and moisture, then they make surprising growth.—C. T.

—The Irish leaf very rapid growth, and a variety of it, called Emerald Gem, though less vigorous than the type, is in other respects superior to it. *Ivy*, like every-thing else, will grow best in good soil; and the ground should be trenched and improved, and some old manure or leaf-mould added. May be planted now if the plants are in pots.—E. H.

4018.—Propagation of the common Hawthorn.—The common Hawthorn of the hedgerows has to be raised from seed. The Haws are gathered when ripe, and when the outer coating decays the seeds may be sown. It is best to sow them in the early spring. Any quantity may be raised in this way. Any special varieties are propagated by grafting on the ordinary Hawthorn or White Thorn as a stock. It is in this way the nurseryman propagate the double-flowered red and white varieties, and also the single red variety. The only objection to raising the Hawthorn plants from seed is the length of time it takes to obtain plants large enough to form a hedge. They can be bought very cheap from the trade.—J. D. E.

—Probably the common Hawthorn could be propagated by a skilful propagator from cuttings, but the plant is difficult to strike. And the usual way to raise the common kinds from seeds, and graft or bud the choice varieties on the common sort.—E. H.

4051.—Rhododendrons and Azaleas in shrubberies.—Rhododendrons can be cut down and will start again much in the same way as most other shrubs will; but when they are planted in masses it is better to lift them at intervals of three or four years, and give the plants more space. They form such masses of roots in suitable soil that they may be lifted when of large size almost at any time without injury. I planted some a few years ago that had not been removed for fifteen years. The bushes had to be carted a few miles, and were out of the ground a week, but I did not lose one, and they grew away freely the following season.—J. D. E.

—The best time to cut these is immediately the flowers have faded and before the new growth is made. They may be cut during the winter, but so many of flowering shoots would then be sacrificed that it is better to wait and have the benefit of these. Both these shrubs are amenable to pruning, and if not done too freely in the case of old bushes they are improved, as new shoots push out and the old plants receive new vigour.—S. P.

—If you do not mind sacrificing the flowers the best time for cutting these plants back is, undoubtedly, the beginning of March, as then young growth will appear towards the end of summer, and when it is necessary to cut back into the old hard wood there is no better time than that which I have given. You may, however, have the benefit of the flowers next year and cut them back as soon as they go out of bloom. In that case not much young growth will be made until the following spring.—J. C. C.

—These may be pruned back when overgrown, but I should prefer doing this earlier in the season, say in March. If cut back now they would be some time before they broke out into growth, and the shoots made would not have time to ripen, and a severe winter would injure or probably kill them altogether if cut back much. But if the pruning was not of a severe character, and was limited to the shortening of certain straggling shoots it might be done now.—E. H.

4066.—Ivy growing on forest trees.—Certainly allowing *Ivy* to grow on forest trees is detrimental to the latter; no matter how nice it looks, it should be cut away if the trees are valued more than the appearance of the *Ivy*. When tree-stems are covered with this creeper light and air is excluded from the bark so that it cannot perform its proper functions. There are, however, instances where it would be useless to cut away the *Ivy* with the idea of saving the trees. I allude to those already decaying, which is best known by the continuous falling of the branches. Over such trees a mass of *Ivy* might be allowed to run, and make a fine

mental specimens of no mean beauty. Where the *Ivy* has not reached more than 12 feet up the stem and but young, no harm is being done; it is when the stems are, say, 4 inches in diameter that the harm follows.—S. P.

—There is a diversity of opinion amongst practical men as to whether *Ivy* does or does not injure the growth of trees of any kind when it climbs them. My experience is that in the case of young trees it does check their growth; but after a tree has reached a height of 40 feet or 50 feet, I think the injury is not great if they are kept free from *Ivy* until that time. According to my observation the Ash and Birch trees suffer more than any others.—J. C. C.

—*Ivy* should not be allowed to grow on forest trees cultivated for timber. In private grounds, where ornament is more thought of than the value of the timber or even the life of the tree, *Ivy* may add its picturesque beauty to the scene.—E. H.

4094.—A Privet hedge.—Cut down a Privet-hedge to thickness in March. You might fill in with young plants, which are better than cuttings. They are cheap enough.—E. H.

THE SKIMMIAS.

THE only species of this genus—there are but four altogether—worth cultivating are *S. japonica* and *S. Fortunei*. The former, as its name implies, is Japanese; the latter is a native of China.

First of all, I must state that there has been very much confusion between these two species, and to Dr. M. T. Masters belongs the credit of having cleared away the mystery which surrounded them. The plant universally known in gardens as *S. japonica* is really not Japanese at all, but a native of China, whence it was introduced into the nursery of Stoddish and Noble in 1849. Mr. Fortune—the discoverer of the species—met with it in 1848 in a garden at Shanghai, the nurseryman from whom he obtained it informing him that the plant was brought from a high mountain in the interior called Wang Shang. Of all the plants Fortune sent to the nursery above mentioned only one reached England alive, and this identical plant was exhibited at the Horticultural Society's rooms, 21, Regent-street, on October 23rd, 1852, "when the Knightian medal was awarded it, and the plant, in popular parlance, made a great sensation." The proper name of the species is *Skimmia Fortunei*. The true *S. japonica* is a Japanese plant, and did not find its way into British gardens for some years after *S. Fortunei*. Like that species, it was introduced by Fortune. Unlike *S. Fortunei*, this is dioecious—that is to say, one plant bears female flowers and the other male ones. Both sexes have received specific names, and mere forms of both have been described specifically in horticultural periodicals. *S. fragrans*, for instance, is simply the male plant of the true *S. japonica*. The first plant of *S. japonica* which flowered in this country was named *S. oblata* by the late Mr. Thomas Moore in 1864. As, however, Dr. M. T. Masters has clearly shown that this plant was exactly identical with the one named *S. japonica* by Thunberg, that name had to be transferred to it, and the one named *S. japonica* in gardens was called *S. Fortunei*.

The *Skimmias* thrive under very varied conditions as regards soil, &c. I have seen them thrive splendidly in strong clay and also in poor sandy soil and peat. The true *S. japonica* is one of the very best town Evergreens we possess. To sum up, the real facts as to the names, &c., of the *Skimmias* above mentioned are as follows:—

S. japonica of Thunberg is the name to keep up. It is a native of Japan. *S. oblata* of T. Moore is the female plant, and *S. fragrans* is the male plant of the same species. Other forms are *S. Foremanii*, *S. Rogersii*, *S. oblata ovata*, *S. fragrantissima*, and *S. oblata Veitchii*. In order to produce such beautifully berried species as those grown by Mr. Foreman, of Dalkeith, and Mr. Rogers, of Southampton, it will be necessary to plant specimens of the two sexes in proximity.

S. Fortunei of Masters is a native of China. *S. japonica* of gardens is identical with this. *S. rubella* is a seedling form. *S. japonica argentea* is a seedling or sport, only differing from the type in having the leaves bordered with white. *S. Fortunei* is a much dwarfier grower than *S. japonica*, and does well as a pot plant for window-decoration, &c.

4080.—Marie Louise Violets.—No heat whatever is necessary to grow Double *Violets* really well, nothing is better than ordinary garden frames, rendered secure from frost by enclosing the sides with a thick coating of leaves or litter. The lights should be covered with mats or other protecting material sufficient to keep out any frost. If provision can be made for this there is no fear need be entertained about success. The chief point in growing Double *Violets* of White Marie Louise is the best kind is to have thoroughly well-prepared roots by the middle of September, which is the best time for placing them in the frames. It is useless to expect good flowers and a quantity of them from poor weakly plants. It is difficult to advise at what distances in the frame the plants should be placed, as so much depends upon their size. The best guide is to have the leaves of one plant just touching those of its neighbour. An ordinary frame of two lights about 6 feet by 8 feet will accommodate about six dozen plants. This will give some idea of the number of plants to prepare during the summer. The end of April is a suitable time to set about preparing a stock of plants. The roots which flowered last season in frames should be pulled in pieces, planting them in rows in well-worked, not highly manured land 10 inches apart. During dry weather supply them freely with water and keep them free from runners and weeds. The best winter quarters for the frame is a sunny position sheltered from north and east winds. Place the frame on two bricks at each corner to raise it above the soil, which is a preventive against the rotting of the frame. At the bottom of the frame I place a layer of faggots or old Pea-stalks for a twofold object—viz., raising the plants near to the glass, and permitting of thorough drainage, as I find the development of the bloom is retarded if the roots are waterlogged. On the wood a thin layer of stable-litter is placed to prevent the soil running among the faggots. Over the straw a layer of last year's leaves is placed, into this the roots of the *Violets* find their way, they being especially partial to decayed leaves. The soil we use is mainly composed of roadside refuse, with which is mixed a quantity of grit that assists in keeping the whole porous. To this we liberally add decayed leaves, with the addition of a small quantity of horse-manure partly decayed. This compost is about 9 inches thick. If the soil in the garden is naturally inclined to be sandy add the horse-manure and decayed leaves to it simply. The plants are then lifted with a good ball of soil and roots attached, and planted in the frame; the soil is pressed firmly about the roots. When the plants are placed in the frame the leaves are quite at the top of the sides of the frame. In a short time the soil settles down, so that by the time the lights are placed on the plants are within 2 inches of the glass. They should receive a good soaking of water which settles the soil about them. Do not place the lights over the plants until there is danger of frost or continuous rain, even then tilt them at the back to admit air to the plants. The roots make progress but not the leaves, which is what is required if many new leaves are made before the April following, the crop of flowers is a thin one. Although a few degrees of frost will not injure the *Violets* when the lights are on, it is not wise to have the leaves touched by it. Abundance of air should be given at all times when the thermometer out-of-doors stands above 35 degs. Anything approaching to scolding the plants is detrimental to their welfare.—S. P.

Lilium candidum.—In reference to the tendency of this Lily to fall after it has made considerable growth, no doubt, as with many other things, remedies may not equally apply in all gardens. With regard to the shallow planting of which I spoke before, I think there can be no doubt as to its being the proper thing to do where the soil is still, and it may further interest readers to know something of the results of shallow planting, because many of us have seemingly grown the plant well up to the stage when the buds are half developed, when they have gone off. All this seems to point to a drier state as being desirable for the bulb. There cannot, of course, be the least cause for fear as regards the action of frost on the bulbs close to the surface, as this causes no injury whatever to bulbs that are well established.—

HOUSE & WINDOW GARDENING.

ARRANGING CUT FLOWERS.

At several of the exhibitions of the Royal Horticultural and Botanic Societies in recent years various groups of cut flowers, arranged on a new principle, have attracted much attention. These groups are in the form of a cone or pyramid, the only evidence of a containing vessel being the edges of a flat plate, which appear here and there where not concealed by the border leaves of the group. It is clear that, except by the use of soft plastic clay, it would not be possible to produce these effects in any ordinary vessel. But as clay is not without its inconveniences, a special kind of vessel has been invented by Mr. March in the form of a solid dome or hemisphere, in which are sunk numerous tubular orifices, upright in the centre and gradually

appropriately mixed with Forget-me-nots, Rushes, Arrowhead (see illustration), and other leaves of water plants, while stove and greenhouse flowers are appropriately treated with foliage which thrives in a warm temperature. The smaller domes are best adapted to table decoration, as the flowers do not rise to an inconvenient height, but some of the tubular holders are made of large size for the display of massive subjects, such as Sunflowers, Peonies, Hollyhocks, Hydrangeas, branches of flowering trees and shrubs, large Ferns, Rushees, and Pampas Grass. These are not easily arranged in ordinary vases, but placed in the wide and deep tubes of such flower-stands, they form striking decorative objects, having all the better effect for irregularity of outline. The main and commendable idea of the invention is to avoid overcrowding, and to give to each spray of leaf or flower its separate and distinct meaning.



Water Lilies and other flowers arranged in a tubular flower-stand.

diverging outwards till they approach the horizontal. This vessel rests on a separate plate of glass, terra-cotta, &c., of wide diameter and nearly flat, but capable of holding sufficient water to refresh the border leaves of the group, which form a distinct feature in this kind of decoration. The plate is sometimes placed on a flat circle of dark Utrecht velvet. Flowers and leaves inserted in the tubes take the exact inclination desired, and the design can thus, as it were, be sketched out and studied as the work proceeds. This system gives the power of forming artistic groups, in which characteristic foliage takes a far greater part than is usually assigned to it in floral arrangements. In the case of wild flowers, for instance, Primroses, Bluebells, Digtalls, Campanulas, and others, according to season, are intermingled with Grasses, Ferns, Bramble, and other beautiful foliage which can be found in every hedge-row. For an aquatic group, Water Lilies are

Hydrangeas in small pots.—Few flowers are more durable than the Hydrangea, for coming in as they do just when heat is so trying to ordinary flowering plants they fill a gap that it would be hard to find a substitute for. To get good plants in 5-inch or 6-inch pots, the cuttings should be struck now, taking off the tops of shoots which have not flowered, and inserting them singly in very small pots. They strike well in handlights or cold frames, kept close until rooted, and then potted into their flowering pots, and grown on in cold frames, merely protecting from frost in very severe weather. As soon as they start into growth in spring, and the flower-heads are visible, give manure-water twice a week.—J. O. H.

Achillea rupestris proves to be more than ordinarily useful, as it is setting for a second complete set of bloom. Possibly this may have been influenced by the specimen having had all its strongly growing heads cut off in March as cuttings. Still, the buds are showing on younger stems that have formed since that date.

FRUIT.

NEW WOOD ON OLD FRUIT-TREES.

THE Vine is perhaps the most familiar example of fruitfulness—in fact, it has grown into a proverb to be as fruitful as a Vine; but there is a great deal of difference between the fruit grown on old wood and that produced on young wood even in Vines, and the same holds good with the majority of fruits. Now, taking Vines first. We are all averse to rooting up those that are producing fruit in anything like a crop; but, as a rule, old, hard canes and knotty spurs will produce even more bunches than the Vine can support, but they certainly become smaller as the Vine attains age, not apparently from exhaustion of the Vine, but from hardness of the wood; and the question how to rejuvenate one's Vines so as to get a new head of bearing wood without loss of a crop in any one year is a problem that many would like to solve. Yet it is a very simple process, for, supposing you have a dozen main-stems in your viney that have been closely spurred in for many years, I would select half-a-dozen of the most promising shoots at the base of each alternate Vine, and let them grow entirely unchecked during the whole season, merely pinching out any lateral growths, and at the end of the year you will have half-a-dozen finely-ripened young canes. Then at the winter pruning cut out half the old rods and shorten the young rods at least half way down the raffor; you will get as many Grapes and much finer bunches from the young wood; and the following year you may replace the other old rods in the same manner; in fact, there should be a constant change of rods, taking out and replacing a few every year. Wall fruit-trees, of which Paachea, Nectarines, and Morello Cherries are familiar examples, are usually trained on what is called the fan system, and bear their fruit almost exclusively on young wood of the preceding year's growth, the requisite quantity of young shoots being selected at the summer pruning, and either tied in loosely or nailed to the wall; and at the winter pruning the older shoots that have borne the crop of the preceding year are cut away to make room, and very seldom is there a failure of crop on trees treated in this way. But with Pears, Plums, Apricots, and Cherries of the dessert kinds, whether trained on walls or trellises, and pruned on the short spur system, it will be found that after a few years the old spurs get so hard and long that the crop is greatly reduced, unless means are taken to introduce young wood. I find it a good plan to cut any very long spurs right off at the winter pruning, and fresh shoots, that can be shortened to form new spurs, will push out close to the base of the old spur, and from the light and air lot into the centre of the tree young shoots, that will eventually form main-bearing branches, can be trained in, and some of the older ones cut right away at the winter pruning—in fact, some kinds of Pears, as, for example, the Jargonelle, will not bear fruit at all except on the young wood. To sum up, no matter what the form of training is, a proportion of young wood should be laid in every summer, and an equal quantity of the old cut away—at least, such is my experience, and I grow fruit-trees solely for the fruit they produce; and although I have a decided liking for old trees, I wish to see them well furnished with vigorous young wood, fruitful from base to summit.

J. GROOM, Gosport.

4068.—A Vine question.—It is certainly a very unusual occurrence for the Vine berries to shrivel up all at once "in a few minutes." When anything is wrong with the roots Vines are liable to "shank"—that is, the fresh stalks of the berries decay, rather suddenly sometimes, and as a result the berries shrink up and are worthless. This may be a case of shanking—an unusually bad case—and there is no cure for it except seeing that the Vine-roots are placed near the surface. There is a great deal in the character of the soil in which the Vines are planted. Vines do not succeed in all soils alike. They do not succeed when the loam contains no lime. If mortar or plaster-rubbish cannot be obtained to mix with the soil I would use quicklime, at the rate of a bushel to a cart-load of soil. My Vine borders were well made and the soil had more far than in the proportion added

to it; but after some years' cropping, shanking began; and heavy dressings of manure made no difference. I gave a good dressing of powdered bones one year and the shanking was not nearly so bad; another good dressing was given this year, and the roots came freely up after the powdered bones, and I have not seen a shanked berry in three large vineries. I would try forking in a good dressing of powdered bones.—J. D. E.

The Vines appear to be affected with a disease that is known as "shanking." Directly the berries commence to colour the stalk turns black, the berries shrivel, and eventually fall off. Instead of being composed, as they ought to be, of flesh and saccharine, they are a sour mass of water only. The principal cause of shanking is overcropping, although many errors in culture will cause the crop to be so affected, such as withholding moisture from the roots too long, or having the roots too deep in the border, so that they are stagnated by too much moisture, owing to a lack of drainage. Again, the manipulation of the shoots will sometimes cause shanking. If the laterals are allowed to run almost wild, say, make shoots all over the house 2 feet or 3 feet long, and then to suddenly remove them all from the Vines, this treatment would give a check to the Vines, and most likely result in shanking. Vines growing in a new border, but recently made, should be cropped lightly the first year—say, a 12-foot rod ought not to carry more than 10 lb. of Grapes the first year. This may appear to be a small quantity, but it is far better for the Vines to be allowed to gather strength by making more roots and developing better foliage for the first year after interfering with the roots. I am not in favour of pulling out Vines if they are under twenty years old, or even thirty. Care and judicious treatment will often render old Vines more profitable than young ones for several years—at any rate, during the time the young ones are growing.—S. P.

The information you send points conclusively, to my mind, that your failure is the result of scalding by an overheated atmosphere, owing to insufficient ventilation, with too much atmospheric moisture. You have either neglected to open the ventilators sufficiently to allow the heated air to escape, or sufficient space is not provided in the form of ventilators to keep the temperature down to a safe point. This is a point that no stranger can decide, and as it is a serious case I advise you to seek the advice of a skilful gardener on the spot, who will be able in a few minutes to tell you if my surmise is right. I do not advise you to root out the Vines until you traced the cause. It would have been better if you had sent an outline of your management, and the distance the Vines are from the glass. You had better ascertain the temperature of your house on a hot day by placing a thermometer under the Vines and within 2 feet of the centre ventilator at the top. If it is over 90 degs. at that point it is too much.—J. C. C.

The disease affecting the Grapes appears to be what is termed scalding, and generally takes place just as the Grapes have about finished stoning. The cause generally is want of sufficient ventilation, especially early in the morning. Certain varieties are more subject to it than others. A thin shade placed over the roof will check it. In the meantime give more air. A very small shink of night ventilation would stop it if begun in time, or if the house was opened ever so little as soon as the sun struck the roof, this would answer the same purpose. A little more foliage might be left on the Vine if there is room without overcrowding.—E. H.

4069.—Management of an orchard.—The first thing to do is to find out what kind of fruit and vegetables sells the best locally. The soil appears to be of the right kind to grow any fruit or vegetables. The first thing to do is to plough the land several times between the existing rows of trees, so as to have it thoroughly clear by the middle of October. If it is possible to stir it 10 inches or 1 foot deep by the aid of a subsoil plough some expense will be saved when the time comes to plant the trees, as so much spade labour will not be necessary as if nothing were done at the soil between now and then. So much depends upon the locality and its requirements that it is difficult to give a

selection of varieties, or even kinds of fruit best for the purpose; but no mistake can be made in planting a goodly number of early kitchen and dessert Apples, such sorts as Lord Grosvenor, Echlinville, Warner's King, Stirling Castle, and Lord Suffield, if this succeeds in the neighbourhood. Of dessert, such showy sorts as Lady Sudeley, Devonshire Quarrendon, and Worcester Pearmain ought not to be omitted. Late varieties like Lane's Prince Albert, Alfriston, and Newton Wonder; and for dessert Cox's Orange Pippin, and King of the Pippins for a late supply ought not to be omitted. It is a mistake to plant a lot of sorts, far better plant many trees of one kind in preference. I should advise that they all be bushes, not formally-trained pyramids, which are useless as fruit producers in a short time; besides, too much labour is required to train them to preserve the form. I do not advise that cheap trees be bought at risk. Far better to purchase good trees from well-known firms at, say, £10 per hundred, than others at half the price. One row of bush trees could be planted between the existing rows. A space not less than 10 feet should be allowed between the trees in the rows. Between the newly-planted and the older trees, one or two rows of Gooseberry bushes, Currants, or even Raspberries should be planted to fully utilise the space. Even then, while the trees are young, a crop of vegetables, such as Cauliflowers, Broccoli, Brussels Sprouts, Carrots, or Onions, can be taken off the intermediate space. Or, again, in the place of vegetables, Single Violets would succeed, and these pay remarkably well in some localities. Narcissus, both double and single, especially the Pheasant-eye type, would grow well in soil of the character described. So much depends upon the means at command to purchase stock to start with. The great advantage in having so much variety is that hardly ever in there a season when all things fail, owing to unfavourable weather or other causes. Filberts would answer really well in such a soil; Kent Cobs, too, are in great demand as a rule. Damsons and Plums sell well at times, except when there is a glut. The Fairleigh, or Chester, is perhaps the best kind of the former, and Victoria or Rivers' Early Prolific, the best Plums. Of Peas I will say but little; if they grow and crop freely, by all means plant the best sorts, such as Williams' Bon Chrétien, Pimaston Duchess, Louise Bonne de Jersey, and Doyenné du Comtes. In all cases these should be bush-grown trees, and so should the Plums, but the Damsons are best as standards. Potatoes sometimes pay to grow; they certainly are good for the purpose of cleaning the ground where at all weedy. As for their culture, it is necessary to well stir it both in planting, earthing them up, and again at digging time.—S. P.

In the first place you have to consider whether it is possible to secure a greater profit by stocking and cultivating the ground between the trees than you now receive as a rental for the pasture. Of course I do not say whether you will be able to do so or not, but from the information you send you appear to have everything in your favour of making a greater profit. If it was my case I should plant bush-trees of Apples and Cherries chiefly over one half of the space, and Raspberries and Strawberries to the other half; you may plant a line of bush Apple-trees between the standards. The sorts may be Echlinville Seedling, Lord Grosvenor, Cox's Orange Pippin, Lord Suffield, and Celloni. The trees should be on the Crab-stock and planted 8 feet apart. You may also plant two trees between the others in the same line. There is room for three rows of Raspberries at 4 feet apart between the established trees, and double that number of Strawberries.—J. C. C.

If the ground is trenched up and manured, Gooseberries, Red Currants, and Raspberries would probably pay the best. The expense of preparing the ground and planting the bushes would have to be considered, but there is no doubt on such land it would pay.—E. H.

4054.—Packing Peaches and Grapes.—Peaches travel best when packed in boxes just large enough to hold one or two dozen in a single layer. Lay some soft material in the bottom of the box, such as paper shavings, letting it come up the sides also. Dry Moss that has been well beaten to clear out dirt and dust will do, but there is nothing to equal paper shavings. On this place a sheet of cotton wadding, and the bed

is ready for the Peaches. Wrap each Peach in a piece of tissue paper, and then place a strip of wadding round several folds to take off the pressure where the fruits meet. Pack tightly, and when the box is full lay another sheet of wadding and fill up the box with paper shavings or some substitute. Place on the lid and tie it (not oiled) down. Grapes are best packed in handled baskets that will hold from 8 lb. to 12 lb. Place a sheet of wadding in the bottom, paper shavings or anything soft and elastic will do. On this place a lining of paper. Tilt the basket a little to one end and begin to lay the bunches in the lowest end till the basket is quite full, so that they cannot shake about. It is the shaking about which does the mischief. All fruits and flowers travel best when packed tight enough to prevent moving. Cover the top of the basket with paper, and lace string over the top. Sometimes two pliable Hazel sticks are used with the ends thrust in the basket at opposite sides to support the paper, but if a little wood is cut with the bunches of Grapes these form a protection to the bunches; and when the string is laced tightly over the top of the basket it is seldom any harm is done, unless the baskets are rung about by the railway-porters, and this happens sometimes.—E. H.

4002.—Walnut-tree dropping its Nuts.—I would surmise that the cause of the Nuts dropping is the excessive drought. It is unusual for them to drop before their time, and not to be accounted for in any other way. In this district, not only the fruit, but the leaves also, are dropping from the trees in some instances. I fear we lose many of our Apples and Pears on trees where we have been unable to water them. Small fruits are shrinking up on the bushes. In the case of the Walnut-tree, as it has occurred before in previous years there may be some local cause to account for it.—J. D. E.

It is not a matter for surprise that the tree should drop a quantity of its Nuts in such weather as we have had lately, and especially when growing in such a dry position as that described. Abundant watering and a coat of manure will be found the only means of stopping the loss, though if the tree is already overloaded it will be all the better for being relieved of part of its crop. In future you should apply a good mulch of long manure or something of the kind as soon as the hot weather sets in, or rather just before.—B. C. R.

Your trouble is easily explained. Walnut-trees are raised from seed, and yours is an inferior variety, and not worth the space it occupies. This fruit-dropping is an inherent character for which there is no remedy but to replace the tree with a better variety. Certainly dryness at the root would not cause the Nuts to drop in a good deep soil.—J. C. C.

I have seen the same thing happen with trees out of condition, or in a very dry season. Walnut-trees suffered a good deal this year from spring frosts, and imperfect fertilisation may have had something to do with the Nuts falling.—E. H.

Strawberries after fruiting.—This has been far and away the most trying season for outdoor Strawberries I ever remember. From the time the plants came into growth there has been no interval of rest, and the fruit has had to ripen in the influence of fierce sunshine and a parching atmosphere. Even where plants have been well supplied with water they have, I find, suffered considerably. If rain in abundance does not come watering should be continued after the fruit is gathered, or the crowns will be weak, and the crop poor next year. A little attention in this way will be sure to have its reward.—BYFLEET.

Picrorrhiza Kurroo.—I believe this curious plant, which is, moreover, quite hardy and possesses a very neat habit, is now growing in many more gardens than it used to be a few years ago, and what I chiefly wish to say is that I have grown it five or six years in almost every imaginable way out-of-doors, and I have not yet seen a single bit of bloom. Has any reader flowered it in the open garden? and if so, under what condition as to soil, position, locality, &c.? It may say something for our patience to go on longer with a non-flowering plant, but it would not be much use unless someone has hit upon the way to get flowers. I am told the flowers are a fine blue. Who will tell us how to get them?—J.

OUTDOOR PLANTS.

ANTHERICUMS.

The several species of which this genus is composed are very beautiful and attractive, and therefore deserving a place in all good collections of herbaceous plants. In those instances where they are grown, too frequently these graceful plants are only represented by isolated and solitary examples, and such as these convey very inadequately any idea of the charm which they possess when planted in large groups. What these plants most thoroughly enjoy and what they should receive from all who would grow them to perfection is a good depth of rich loamy soil, rather sandy. Always plant them in a spot where they may remain to become established, for few plants are more impatient of frequent interference than these. But were allowed a few years to establish themselves fully they provide a most pleasing feature. By the above remark I do not infer that it will take years before they reach flowering size; on the contrary, you may get a flower-spike the year after planting, but it will assuredly be weak, and but feebly represent the

some kinds, particularly *A. Liliastrum* and *A. L. majus*, have a peculiar way of multiplication, and of heaping and clinging to each other, censed, in reality, by the roots taking a horizontal course and becoming entangled with each other. There will be many crowns, all of which will prove intact with roots if all the soil be washed away in water, thus leaving them bare. When free from all soil the plants are easily disentangled with the finger and thumb end an occasional shaking, a very simple and easy way, and when carefully done hardly a root will be lost. On the other hand, the knife should never be used in dividing these plants; indeed, it can never be used in the case of established pieces without much sacrifice. Another

MODE OF INCREASE is by seeds, which may be sown when ripe or kept till the winter ensuing in some cool, dry place. Well ripened seeds germinate quite freely, but are very slow, and I do not find that sowing the seeds directly they are gathered forwards their germination in the slightest degree; therefore they may be kept and sown at leisure during autumn or winter. Owing to their slow germination, therefore, it is not safe to discard boxes or pans of seeds of such things under two years, though,

very pretty graceful species, and assumes a more clustered habit of growth, from which issue many flower-spikes and abundance of starry blossoms of the purest white. J.

4063—**Alpine Auriculae**—Black mud from the bottom of a pond would be nnsafe material to use as a mulch for Auriculas. The best materials to place around the plants are good loam and decayed manure, mixed together in equal portions. These should be used in the spring as soon as the plants show signs of growth. They need no other attention at any time, except to keep them free from weeds and to remove decaying leaves from the plants which are nightly. The plants should flower strongly next year. Spanish Irises are better lifted and replanted annually. If left in the ground and the soil is suitable they will grow and flower two and three years in succession, but they do better the other way.—J. D. B.

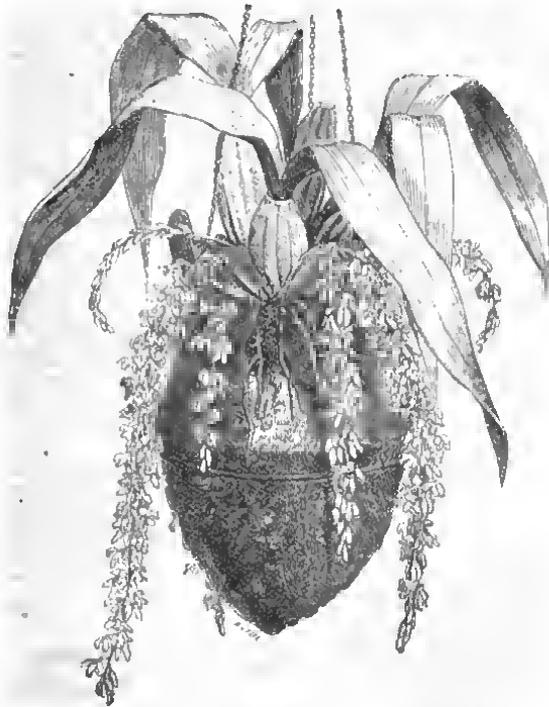
— It would be best to leave the plants alone, as doubtless, from your description, they will bloom well in good time if you have patience. The Spanish Iris is a bulb that hates disturbance, and to be constantly lifting them is one way to court failure. Here are a few hints as regards their culture. The position must be neither too damp nor too dry, and the soil sandy, light, and moderately rich, some amount of well rotted manure or leaf-mould being incorporated with it. Give a rather sheltered spot, not too shady, as the flowers are always happier when not exposed to the full force of the wind. It makes growth early, and the bulbs must get well dried, although after the winter genial rains assist much the slender growth. As yours were only planted, as far as I can judge, last year, by all means leave them alone. Perhaps their unsatisfactory condition may be accounted for by an unsuitable position in which they are placed.—C. T.

4065.—**Lilies and Irises.**—With the soil you mention I should recommend you to confine yourself to the rhizome-rooted form of Iris, especially the varieties of the German Iris, and to such hardy, strong-growing Lilies as *L. ligurium*, *candidum*, *lanceolatum*, and the common Turk's-cap Lily.—A. G. BURNER.

— The most reliable Lilies are *candidum*, *dawnrioum*, *ligurium* (double and single varieties), *croceum*, and *bulbiferum*. These are hardy and vigorous thriving, best in loam of a well drained not too heavy a nature. A clayey loam is not very favourable for Lilies holding so much moisture in winter that the bulbs are apt to suffer. It ought to be lightened by the addition of river-sand, leaf-mould, or anything that will render it more porous. By incorporating some peat with it, it would be possible to grow the varieties of *speciosum* and *auratum*. The English and Spanish Irises ought to do very well, also the beautiful variegated of *Germanica*, *pallida*, *neglecta*, and *variegata*. These are very showy, and when they come to good-sized specimens produce quantities of bloom. The Spanish and English Irises are better for lifting in autumn, replanting in early spring. I should also try a few plants of the lovely Japanese Flag Irises (*L. Kempteri*). These are lovers of moisture, and require a soaking of water occasionally in hot, dry weather.—J. C. Byfleet.

4056—**Creepers for a cemented wall.**

—There is no creeper that will cling to a cemented wall, or, indeed, any other wall, without nailing beside *Ampelopsis Veitchii* and Ivy. Even the latter requires some attention to fasten the leading shoots to the wall; oftentimes when the growth is free it refuses to cling for a time. If an evergreen creeper is absolutely necessary I should advise the planting of Irish Ivy. By fixing here and there a wire to the wall in an horizontal position the Ivy is easily kept to the wall by fastening it behind the wire. Cuttings root freely in the autumn if cut into lengths of 10 inches and inserted in sandy soil, making them quite fast at the base, afterwards mulching the ground between the rows with leaf-soil, vegetable refuse, or anything that will tend to ward off frost. Although this will not kill the Ivy it lifts the soil and loosens the cuttings at their base, in which state they cannot possibly make roots. If the cuttings are put in about the middle of October and allowed to remain until the following April twelvemonths, they will be stocky well-rooted plants fit to put out where required. The first week in March is a



A *Rodriguezia* growing in a hanging-basket. (See page 262)

same plant when fully established. One little item, though a very important one, concerning Anthericums is that they should always be planted or transplanted while dormant, and where this operation is deferred till growth has commenced, it can scarcely be completed without loss of the central crown or growth. It is also a good plan, having dug the ground to a depth of 2 feet or more and thoroughly enriched it with manure, to remove some 4 inches of the surface-soil so as to admit of the roots being laid out in their natural manner of growth, instead of being huddled together in a small hole. Place the crowns about 9 inches apart each way, or nearer if the desire is for immediate effect, and then sprinkle half an inch of silver sand in and among their roots prior to returning the surface-soil. Thus planted, they will be safe for a dozen years or more, and annually constitute one of the most beautiful objects in the garden. But instead of allowing them to remain so long undisturbed, it may be desired to establish other groups in different spots in the garden, and for this purpose it will be necessary to lift and divide the original group. When the plants are lifted after having remained a few years in one spot, it will be seen when all the soil is removed that

as a rule, they show freely through the soil in about eighteen months. For these reasons it is always best when the seeds are sown to cover them with a board or slate, everything in fact that will tend to keep the soil uniformly moist over a long period, and at the same time prevent weeds springing up and likewise check interference by birds or other intruders. Such a covering, too, dispenses with frequent watering, by which means the seeds are often laid bare and such like, a decided drawback with choice or rare species, and where only thinly covered with soil. As with established plants so with the young seedlings, always transplant them when dormant, but in the case of these Anthericums they will not need transplanting till a full year's growth has been completed. The kinds in general cultivation are not numerous, and the best and most decorative of these are *A. Liliastrum* (the St. Bruno's Lily), *A. Liliastrum majus*, a giant form of the preceding. This is by far the most beautiful of all, and a plant which should figure in quantity in every garden, the fine spikes of snowy bell-shaped blossoms being exquisite in the extreme. These two may easily be distinguished by the clear white fleshy roots, which are somewhat thick. *A. Lillago* (the St. Bernard's Lily) is a

good time to sow the Variegated Hop and Canary Creeper in a gentle warmth, removing them to cool quarters directly the plants are above the soil, and grow them on stocks, so that when put out in their permanent quarters the growth will be free and uninterrupted.—S. P.

There are no creepers, except Vetch's Virginian Creeper and the small-leaved or Wild Ivy, that will cling to a cemented or any wall without being nailed. The Japanese Hop and Canary Creeper should be sown in spring in a gentle warmth; nothing will be gained by sowing them in the autumn. March is the best month.—B. C. R.

4065—Treatment of Pancreatium.—Pancreatium illyricum is not hardy in all parts of England, especially away from the south and west. Perhaps this is the cause of your bulbs refusing to grow. If your friend's garden is situated not far away from your own, and her plant flourishes, this may be owing to a difference of soil. If that in her garden is sandy and yours the reverse that would account for the difference. If the latter is the case I should advise you to choose the most sunny spot in your border. Take out the soil 2 feet deep and 18 inches in diameter; break up the soil at the bottom of the hole, and place thereon 11 inches of broken bricks, clinkers, or stones, as a means of causing surplus water to drain quickly away from the bulbs during the winter. Over the drainage lay some freshly-gathered leaves to prevent the drainage becoming choked. Fill up the space with soil of a light character, such as leaf-mould, old potting-soil, road grit, and sand, and plant the bulbs early in March 4 inches deep, finishing off with a mulching of partly-decayed leaves, repeating this latter every autumn as a protection against frost. Should the weather be very dry during the time growth is being made give the plants occasional soakings of water. The Carnations should be potted in a compost of loam three parts to one of partly-decayed horse-mannure or leaf-soil, adding sufficient sand to keep the whole porous. Do not give the roots too much pot-room; an inch all round will suffice. Stand the plants in a sunny spot, and water them carefully.—S. P.

4055—Box edging.—The kind of Box used for edgings to paths is not the same kind as that forming a bush—the former is a dwarf-growing kind named suffruticosa, belonging to the sempervirens type. The common green variety growing as a bush is the type to which that generally used for edging is descended. You must procure some of the right kind; one yard that has served as an edging for several years will divide sufficiently to plant three yards. The months of March and April is the best time to plant. The ground should be thoroughly dug and levelled by the aid of a square-edge and spirit level to determine the level of the path on both sides at each end. The intermediate levels are best obtained with three T-squares, commonly called horning-rods. One of these is stood on the level peg at each end of the path, which has been put in with the aid of the square-edge and level previously named. The third rod is used to get the various intermediate levels, by sighting from the end. That in the centre should be raised, or lowered as necessary, until it comes into line with that at each end. When the soil is made quite level and firm, a trench 6 inches deep should be cut in a perpendicular manner, chopping the soil towards the path with a spade. The Box should then be pulled into pieces; every hit with roots attached will grow. Cut off the tips of the shoots to make the edge look square; this facilitates the planting and makes neat work. With the right knee on the ground and the left foot in the trench, the Box can be quickly laid in order; the left hand hold it in position, while with the right it is placed there and soil is pulled over the roots also. The foot in the trench makes it firm as the work progresses. The trench is filled with soil and trodden firmly—in fact, it cannot be made too firm. The keeping of the ground firm about the roots renders the Box always dwarf. If the tops were evenly cut before planting no clipping will be necessary the first year and but little the next.—S. P.

The Box-trees are of a different variety than that used as an edging to walks. It is no use planting the edging with cuttings. An edging of dwarf Box that has been down for some years can be taken up and the piece divided. One yard of old will plant 2 yards of new.—J. D. E.

The dwarf Box, usually employed for edging, is quite distinct from the ordinary tree or bush variety, and the best way will be to purchase some stock of the form, and divide and plant it by and-by. If you know any other, take cuttings of the bush in October, and put them out next year when suitably rooted.—B. C. R.

RULES FOR CORRESPONDENTS.

Questions—Queries and answers are inserted in *Gardening* free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of *GARDENING*, 37, Southampton-street, Covent-garden, London. Letters on business should be sent to the Publishers. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as *GARDENING* has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who refer would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in *GARDENING* should mention the number in which they appeared.

4086—Ailing Fuchsias.—Some of my Fuchsias are ailing. The undersides of the leaves so rusty looking. Is it red-spider? If so, what is the remedy?—C. N. P.

4087—Striking cuttings of ebrube.—Will any person kindly inform me what is the best soil to strike cuttings of Escallonia and Deutzia? Also please name a few good shrubs that can be struck from cuttings?—DAVID.

4088—Fuchsias for a trellis.—Will someone kindly give me the names of six best climbing Fuchsias for growing on a trellis in a conservatory facing west, which gets the sun from ten to six in summer? Answer to this will oblige.—A CONSTANT READER.

4089—Sweet Williams, &c.—I have a very good Sweet William and a very good Canterbury Bell now in flower. Is there any way of reproducing these plants by cuttings or any other way, so as to be certain of getting flowers of the same colour next year? If so, how is it to be done?—A. T.

4090—Unhealthy Cucumbers.—I should be very glad if someone would tell me the cause of my Cucumbers, leaves turning brown, with dark spots about the middle, and the edges turn up and the fruit gets yellow? They are in a frame on a hot-bed. Been planted about two months. Also what time to give them air to the morning?—SHERKID.

4091—Orchard (14 acres) destroyed by insects, caterpillars, &c.—Will some experienced writer inform me what is a good dressing to give trees in September, October, and November to kill insects, caterpillars, "American Blight," &c.? Trees planted forty years; pasture land under same. I am under agreement not to destroy trees.—R.R.A.

4092—Tomatoes dropping their buds.—My Tomato plants are strong and send plenty of flowers, which set and then drop off at the first joint. I have them growing both in borders and in pots. I have three sorts—18-ld Gem, Conference, and Vick Oriferno—but they are all alike. I have syringed a few times, and they seem a little better. They got the sun all day.—J. R.

4093—Early Roses.—I shall be glad if someone will kindly inform me which classes of Roses are likely to produce the earliest blooms in this district, whether *Tea* or *H. Perpetua*? And perhaps someone can give me the names of about a dozen of the earliest, suitable for button-holes and for planting out-of-doors? My garden is well sheltered on all sides from cold winds, and the bed I propose to replant has an eastern aspect, with sun on it till middle of afternoon.—ROSE, E. Yorks.

4094—The culture of Stephanotis.—Can any reader of *GARDENING* inform me on the following subjects? I want to grow the above beautiful plant for market. Can any kind of dried assist me? How to propagate *Stephanotis*, and its after culture? The best place to rear the plants to begin with, and probable cost per hundred? After being thirty years absent to different parts of the world I have settled down to my old calling. Need I say I feel somewhat perplexed?—SOLMAN.

4095—Broom.—On a will bank in my garden I have several clumps of common Yellow Broom. Being desirous of increasing the size of the clumps, I transplanted several bushes last October, but I find that all beheaded. Can you inform me when Broom should be transplanted, and whether it can be taken up from cuttings, and if so, at what season? My bushes are cut from cuttings, and are weak and woody. If I prune them or cut them down will they grow up afresh, or how can I improve them, and at what season?—S., *Renfrewshire*.

4096—Roses not thriving.—Roses do not thrive in my garden; the neighbourhood is too bleak and dry. Gravelly subsoil, very elevated, dries out quickly. What are the best kinds to try? I should like to grow Roses of some kind, giving the preference to suitable kinds for button-holes work. Would not the hardy kinds of *Tea* Roses succeed? A few that I have planted alongside General Jacquemont have come through the winter better of the two kinds. Locality, Wolverhampton.—C. N. P.

4097—Tropaeolum "Fireball."—Will anyone kindly inform me if *Tropaeolum "Fireball"* is the same as *Tropaeolum speciosum*? I obtained some strong tubers of the latter about two months ago from Mr. Henry South, Gardener, Yetholm, who advertised it in *GARDENING*. I planted the tubers 4 inches deep, as he advised, and put some in all the aspects—north, east, south, and west. It has grown beautifully, but I find as yet, I like your Jersey correspondent, that it is least in the south aspect, and that in the county of Durham. I should be glad to know if it would succeed as a greenhouse climber.—J. H. G.

To the following queries brief & literal replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

4032—Cologium variegatum (B. M.).—You must not put this plant in strong heat. I do not say it will not grow, but I do make the assertion that you have very little flower from it. The plant grows naturally on the Madras Hills, and I am told always upon the north side of the hills. And I have always succeeded with this plant best when it is placed in the house amongst the *O. longosum*.—M. B.

4080—Onocidium hastatum (George Jenkins).—How you receive the name of your flower, and it is a very pretty species, for which we have to return thanks to the Messrs. Low, of Clepton. I have seen the plant in some of the Messrs. name *O. ciliatum leucocaulum*, but it is a very different plant to this, which was introduced by the Messrs. Lodges upwards of fifty years ago; but it was the Messrs. Low, of Clepton, that made the plant popular by introducing it in quantity about eighteen years ago. It has a wide distribution in Mexico.—M. B.

4000—Stephanotis not opening (M. Banks).—You do not get the spire to open now. I cannot think why readers do not ask before the mischief is done. If you had asked before you removed this plant to an arid atmosphere you then might have had a word of advice given, but I am thankful that you now cannot blame old "M.B." for misleading you. And I do not know why you took the trouble to tell me how you had grown this plant in a nice warm stove, and that, not wanting it to flower before the middle of July, you had removed it to a greenhouse, which has been open day and night, at once, and you have reaped your reward, for the bulb which you suppose is as dead as a door-nail.—M. B.

4001—Ants, &c. (H. H. L. G.).—Your first question is best answered by an indirect reply. There is no need to destroy the ants, as they are not doing any harm to your Beans, but only visit them to collect the sweet matter exuded by the "Insects," which are one of the aphides (*Aphis fabae*), commonly known as the Black Colpin, Black fly, or Collier. 2. The ants do not in any way create the insects. 3. The aphides may be killed by washing the plants with 4 lb of soft soap, the extract from 4 lb of Quassia-chips, and 100 gallons of water. Or the tops of the plants may be cut off, taking care that they are not left among the plants, but carried away in baskets and burnt. Remove all Docks and Thistles, on which this *Aphis* also feeds.—G. S. S.

NAMES OF PLANTS AND FRUITS.

*. Any communications respecting plants or fruits sent to names should always accompany the parcel, which should be addressed to the Editor of *GARDENING*, 37, Southampton-street, Strand, London, W.C.

Names of plants.—Clinton.—Probably *Lilium pardalinum*.—J. F.—We cannot undertake to name garden varieties of *Fuchsias*.—F. H.—Numbers all detached, so we cannot name.—M. S., *Redhill*.—*Justia carnea*.—Andrew Forth.—We do not name varieties of *Roses*.—A. F.—Both flowers are *Marguerites*.—K. G.—Dried up, and numbers all detached.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

U. N. P.—Apply to any good seedman.

POULTRY & RABBITS.

4025—An incubator.—Does not "Gardener's Wife" make a slight mistake in her first sentence? Chickens are hatched in incubators, but raised or reared in brooders or foster-mothers. I presume the querist is desirous of hatching some chickens, and asks for information on this point alone. She will understand that it is difficult to advise her fully without seeing the article which she wishes to employ. If the boiler cannot be made to stand higher than 8 inches or 9 inches from the ground some arrangement must be made for fixing the lamp below the surface, or there will not be room for the chimney. I should say a lamp ought to be specially made for the purpose; this might be made to stand on the oil-vessel in order to save space; there would thus be no stand needed as in the case of a table lamp. The chimney need not be more than 8 inches or so high, and of course it will conduct the heat from the flame to a spot where it will play upon the boiler itself. The greatest amount of heat will, of course, be forthcoming when the water can be made to surround a funnel or tube through which the hot air passes. "Gardener's Wife" must arrange for the water to maintain a temperature ranging from 103 degs. to 105 degs. Fahrenheit, and before she puts her eggs into the machine she must be satisfied that the heat is kept at a tolerably safe point. I presume she will use paraffin-oil for the lamp. This I have found safe, and when ordinary care has been bestowed in trimming and refilling the lamp, nothing has gone wrong.—DOULTING.

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WHITE FLOWERS FOR CUTTING.

The demand for white flowers increases with each succeeding year, and no garden of any size is complete without a plentiful supply. Fortunately, all through the summer and early autumn months many plants with white flowers are very easily grown in herbaceous and mixed borders, and in their way quite equal to choice hot-house flowers. In the very front rank I should place White Stocks, and there are few to beat East Lothians sown in boxes in autumn. If pricked out into 3-inch pots, wintered in a cold frame and planted out in April, they will make grand plants in early summer, and last a long time. A *propus* of this Stock, it is rather strange that of the three colours—white, scarlet, and purple—there should be annually so much larger a percentage of single in the purple than in the other colours. White Sweet Peas are almost, if not quite, of equal value with Stocks. It is sometimes advised to sow Sweet Peas in autumn, but they want a lot of attention in the early season if birds and slugs are troublesome. I prefer to sow in February in 3-inch pots, hardening off and planting out early in deeply-dug ground. Of the several varieties of Spiraea valuable for cutting, preference must be given to palmata alba, a lovely variety whose feathery plumes are exceptionally light and graceful. A stock of forced *S. japonica*, planted out and allowed to remain in the ground over one season, will also furnish an abundance of flower. Small or Cactus-flowered White Dahlias are not common; indeed, among the new varieties of the last two seasons one hardly finds a white variety. The best for cutting are still Gilding Star, Lady Blanche, and Camelliflora in the pompona, and Constance and Mr. Tait in the Cactus sections. I should like whilst on the subject of Dahlias to sound a note of warning as to the depredations of earwigs. These insects are very numerous and troublesome this year, and in common with the foliage on Peach and Nectarines, I noticed quite early in the season that the leaves of the Dahlia were getting badly punctured. The use of the 2½-inch pot inverted on the top of the stake (with a little dry hay to tempt the insects to resort thither after their slightly depredations) has proved effectual. I have shaken as many as a score some mornings from each pot. There are few better white flowers for summer cutting than the white Antirrhinum. I have a goodly display of this on the herbaceous border, and a wonderful profusion of flower is produced from individual plants. Many varieties of the annual Chrysanthemum are nearly white. As this is of easy culture, quick to come into bloom, and very free, standing also a long time in water, it can safely be included in any list of flowers for summer cutting. In common with the majority of better class annuals, this should be sown in a little warmth about the end of March. Plants are thereby secured early, and if put out as soon as possible the flowering season is considerably lengthened. No mention of white flowers would be complete that did not include the

blume perfect in form, substance, and colour as be secured. It is not so free with me as the old Crimson Glove, but still quite indispensable as a button-hole flower in its particular colour. Attention has been directed on more than one occasion to the value of Godetia for cutting. Duchess of Albany is a white variety of exceptional merit. I question if there is a more thoroughly useful plant from a cut-flower point of view than the Double White Yarrow (*Achillea ptarmica* fl. pl.). Although not altogether what one might term a high-class flower, lacking the sweetness and grace of Stocks, Spiraea, and other things previously mentioned, it is invaluable for filling up wreaths, crosses, flower-baskets, or to meet any large demands of a similar nature. As summer declines and the days shorten, the supply of white outdoor flowers in quantity seems to increase, and will last until the approach of frost—plenty of White Annual Asters, Summer Chrysanthemums, also *C. maximum* and *uliginosum*, to mention a few of the many good and useful flowers. There are some white flowers, which, although admirable in themselves, are yet from some cause or other not admissible in quantity on the herbar. Take, for instance, *Lilium candidum*. What a miserable appearance this has presented of late years in the majority of gardens! Foliage brown and bad, and flowers nothing like so good as they would be with clean, healthy foliage. Powders, in the shape of "anti-blight" and "mildew preventor," are only partially effectual. I was wondering the other day how two or three applications of Bouillie Bordeaux would answer. It might act as a preventive if the foliage was well damped with the same at intervals before the appearance of the disease. The White Herbaceous Phlox is handsome in appearance, but not of much use for cutting on account of the short time it lasts in water; still, we are glad to use it and renew frequently, for there are few white flowers that produce such splendid heads. Heliotrope White Lady would be a grand flower for cutting were it not that a failing similar to that of the Phlox has to be feared against it. I should like to say a good word for White Verbenas. Given a variety with fairly long flower-stalks, one is never at a loss for a supply of white blooms, and provided they are not kept too long before being placed in water, they will remain fresh for several days, and the delicate perfume is much appreciated. Very pretty nosegays can be made with a mixture of White Verbenas and Sweet Peas, a little *Thalictrum adiantifolium* foliage, and a fringe of Pheasant-foot *Polygonum*.

E. BURRELL, *Claremont.*

Sempervivum arachnoideum.—In or out of flower there is always something to interest one in the several kinds of wobbled Sempervivums. I think, however, that in this season in particular the non-flowering rosettes are more striking than usual, because of the snowy whiteness of their silken webs. A fresh crop is being sown, as it were, just about this time, and when the rosettes are well covered the plants are very attractive. In early spring the plants of the above variety have a reddish

purple hue. On the open rockery in a high and dry position, and surrounded by small stones to prevent the rains washing the soil into the web, it is very attractive. The position can hardly be too hot or too dry. To have it in its best form the rosettes should be pricked out singly on each apart, carefully avoiding planting in lines, and in this way covering a large, irregular space on the rockery in a sunny position. Make the ground firm before pricking out the plants, and when planting is completed sprinkle some clean fine gravel or similar suitable material among the rosettes. Given this treatment, the plants will flower more freely, it is true, and though some may object to this because of the obvious result of such flowering, it should be remembered that only a few of the largest would flower in the first year, and that the remainder would form a very pleasing feature for a long season, while those that bloom may easily be replaced when flowering is complete. Offsets are produced in plenty; consequently some large patches may readily be formed. *S. a. Lageri* and *S. a. Powellii* are two good kinds worthy of attention.—E.

RAISING SEEDLINGS.

I SHOULD like to draw the attention of amateurs and other readers of GARDENING to the interesting practice of raising Geraniums, Begonias, and many other plants from seed by just giving my experience on four seeds only. Last summer I picked four nice seeds off one of my Geraniums (*W. Beahly*). I put one seed in each of four small pots. These seeds soon came up, and, to my surprise, each one of them came quite different in foliage, so it struck me that there would be different coloured flowers. I took care of these through the winter, and the first one that flowered turned out to be a most beautiful salmon. I sent the first bloom to Mr. Jones, of Lewisham, and asked him for his opinion on it. He wrote to say it was the "most lovely colour he had ever seen" and offered at once to buy it if I would part with it. The next of these seedlings opened soon after, and is like the parent only much brighter in colour and the flower seemed to me to be smoother; this is evidently an improvement. The third seedling flowered and is a lovely salmon. If anything, I think, better than the first that I sent to Mr. Jones. This is in bloom now and can be seen by anyone who would like to satisfy their curiosity. The last seedling to open is a beautiful bright pink, a lovely colour and an enormous truss. I see the first pip is just opening this morning (July 5th), and looks as though it would be well worth anyone's while to grow. Now these four plants have been most interesting to me from the first, and I think amateurs could amuse themselves profitably by growing their own plants from seed.

W. COTTON.

4060. — Shading for a greenhouse. — A very cheap and good shade may be made by mixing flour and water with a little whitening; and you can also have lime or whitening made thin by mixing milk with it. A good shade is also made by dissolving Brunswick-green, so as to make it like this paint. These put on will provide a very good shade, very cheap, and easily removed. Such preparations as Summer Cloud, and others that are advertised in these columns, are efficacious.—C. T.

GARDEN WORK*

Conservatory.

Cottings of Hydrangea just getting a little firm will strike now in the propagating frame kept close and shaded. They do best in small pots singly. Myrtle, Oleanders, Spasmadnia striosa (a useful winter-flowering plant) will strike freely now. All the winter-flowering Chrysanthemums are now in the flowering pots and are growing freely. If black-fly makes its appearance use the remedies which have been found most serviceable in the past. The other day I found a cultivator, who grows 10,000 plants, dipping them in a tub filled with Sunlight soap in solution. This may be used as a preventive. A pound of soap is enough for eight gallons of water, and this in a tub will dip a good many plants, so the remedy is cheap one, and may be useful for other plants attacked by insects. The soap is boiled in a smaller quantity of water till dissolved, then more soft water is added to make up the quantity. The Erythras are rather striking conservatory plants for summer droosals. Many years ago we used to grow E. Crataegifol. lately, groups being made of it on the lawn; but there are other forms of it, all of which are useful and interesting. When the frost comes the plants are cut down, the roots potted and kept through the winter in a dry cool house in a dry condition. Fuchsias will now be at their best, and must have plenty of nourishment. Plants with pots full of roots must have attention. There has been scarcely any improvement in the Fuchsias for the last twenty years, the reason being Fuchsias are not fashionable now, and sellers have left the beaten track and are searching after novelties. In a large conservatory the Fuchsias should be planted out where they can either form wood-shed bushes, or be trained up the rafters, and led up into the roof. Leobanilla biloba major is a good plant for the young ambitious plant-grower to try his hand upon. In the days when hard-wooded plants were more generally grown than they are now, a good specimen of this L. biloba, well-bloomed, was taken as a sure sign of careful culture. Hoyas. Celsia is another old favourite sure to be admired when well done, requiring somewhat similar treatment. The chief point in the successful culture of old-fashioned hard-wooded plants are the potting and watering. The best peat, containing plenty of fibre, is required. The drainage must be perfect, and the soil remained in firmity around the plants. Careless watering is the bane of hard-wooded plants. Look over them twice a day, and water only those which require it. It will not do to anticipate nor yet fall into arrears. Peromoea elegant and Cantua dependens are not commonly met with, but careful plant-growers find no difficulty with them.

Stove.

Amaryllidaceae which have done flowering will require less water, but the work of their retarding to rest must be a gradual affair. Raising seedlings from good varieties is the best and cheapest way of getting up a stock. Buy a few good varieties to start with, hybridize, and save seeds. There is some merit in this before seedling flower, but the result will be interesting and profitable. Shift on Polkaetia, Euphorbia, Cranthemum, Gardenia, and other flowering stove plants. Young plants of nearly all the flowering stove plants can be easily rooted from cuttings. Gardenias are sometimes planted out in beds of rough peat, and when the flowers are required in a wholesale way, and a house can be given up to them, the planting out supply answers very well. One of the difficulties in the culture of these plants is the usual presence of mealy-bug. If it were possible to get hold of a perfectly clean stock their culture would be comparatively easy where heat was at command. What a pretty little specimen Hoyas bella makes in good hands! It must have good fibrous peat, with a little leaf-mould and plenty of sand, and charcoal, broken up fine, to keep the soil open. This plant grows well in a basket suspended from the roof. Shift on yucca, plant of the dendrodon fallax, C. wendlandii, C. fragrans, A. pl., and Aphelandra surculosa, and others. There are old-fashioned plants, which used to be had in good condition when there was a bark-wood in the stove. The bark-wood was a great help to the plant-grower, not only in furnishing a little root warmth for plants which required it, but it created a genial atmosphere to a more regular way than can be done by damping floors, &c. Use the hind as little as possible where foliage plants are grown, especially Chrysanthemums. Let nothing softer for want of water, nor yet air, in the opposite direction. The unheated greenhouse may be as charming as any other, or even more so now. If kept fairly close stove plants and tropical Ferns will do well in it, and all the usual kinds of greenhouse plants will be quite at home under glass now, with the lights open eight or nine days. But the winter must be thought of, and the Lilies, bulbs, and other things which can bear the rigour of winter with only the shelter of a glass-roof, must not be neglected. Laurestine, Rhododendrons of the Indian type, Solomons's Star, and other scallier things which for the moment, perhaps, are standing outside will be better plunged in Cocoa-ash- or fibro or a heap, to save watering and to keep the roots cool. Chrysanthemums must not be crowded on together, or the plants will grow up weakly.

Hardy Ferns

are very charming, and may be successfully grown in pots, but in a time like this they should be plunged out to a shady border, and be shaded with tiffany during the hottest part of the day. Spores should be gathered as they ripen, and be sown in pans of soil and placed in a cool frame. I always think of ferns to more do good to keep in stock than are the scallier species. It is true some species, such as Polyanthum anglicum, proliferum, and its variety, produce young plants on the old fronds, which only require to be taken off and pricked out in boxes of soil. Scolopendrium ramosum can be propagated by pulling an old plant up into single fronds. There is a germ at the bottom of each frond, which in a comparatively short time will develop into a plant.

Cold Frames

are for the most part occupied to do Ciceraria, Cyclanthes, Calceolarias, and Primulas, single and double. If there is

a small frame at liberty it may be devoted to the propagation of the Carnation. Seeds of choice alpine may be sown in pans of peat, leaf-mould, and sand, and placed in a frame and kept close and shaded for a time. Set the pan in a cool, shady position.

Window Gardening.

Cactuses form very interesting window plants, and but few people realize what an immense variety there are to choose from suitable for the windows; being of small stature, and for a considerable part of the year requiring very little attention, they must be well supplied with water, and growth encouraged. Any plant requiring more pot room should have attention now. The soil should be composed of very turfy loam, old leaf-mould, pieces of brick broken up, fine crooked charcoal, and sand.

Outdoor Garden.

Among the hardy plants which are flowering well now in the dry, hard ground, and which may be recommended for cutting, are Campanula Hendersoni, dwarf, and very free, and more lasting than the Bell-flowers usually are. C. carpatica is also very effective, both in the border and also on the rockery. (Kochera Youngi, yellow, and G. speciosa, white, are both good, and an old-fashioned plant, Linum catharticum, suitable either for rockery or warm border, is now a mass of charming yellow blossoms, as free from frocks and embryo as if there had been no heat or drought. For cutting out Coreopsis lanceolata and C. grandiflora, a dwarfier variety, are valuable. The Gaillardias, Irlieum patulum, and Stenactis speciosa are also good. All the above should certainly be in every garden, as being among the most useful hardy subjects. Get on with the propagation of Carexones and Finks as far as possible. One of the most successful propagators of the Carnation I know strikes his cuttings in 4-inch pots filled with ordinary red sand, such as is used by builders. Calling upon him the other day, I found him busy potting in Carnation cuttings by the thousand. The pots of cuttings are placed in a cold pit, with the lights whitewashed, and nearly every cutting strikes in the sharp red sand, when they are potted off immediately. But root people layer their Carnations, and layns make good plants, undoubtedly, but those who care a shilling to test the possibility to draw nutriment from the parents as long as possible. On the other hand, layering is tedious, back-swinging work, and those who can make use work with cuttings have the best of it. Hollyhocks, except wern well cared for, are making a poor show of it this season. The side-shoots, when getting a bit firm, cut at single eyes, will strike and make good plants. I have struck many that way of the named varieties.

Fruit Garden.

The drought continues, and Firmas and Peaches are in a terrible plight with red-spider. It is, of course, quite impossible to either mulch or water all the fruit-trees in the country, but those who care a shilling to test the possibility to draw nutriment from the parents as long as possible. On the other hand, layering is tedious, back-swinging work, and those who can make use work with cuttings have the best of it. Hollyhocks, except wern well cared for, are making a poor show of it this season. The side-shoots, when getting a bit firm, cut at single eyes, will strike and make good plants. I have struck many that way of the named varieties.

Vegetable Garden.

In many gardens Potatoes are small, and where the skins are set it will be better to lift them, as superfluous may get in. In rain comes in quantity, and then the quality will be injured. The best course will be to lift all Potatoes which are ready and have done growing, and sow Turnips, or plant Cauliflowers or Yelich's Autumn Bicolour, or sow Winter Spinach on the land. Of course, nothing will grow on newly-sirred lent or in bad air without water, and thus watering will have to be repeated when required till rain falls. In sowing seeds in smallish quantities, first soak the drills thoroughly, sow on the damp soil, and cover with the fine dry soil now. The dry soil will prevent the escape of the moisture from the land, and a shade can be supplied very little water will be required for some time. Only the very best culture will secure good Lettuces now, and one of the principal items of good culture in a dry time is mulch with short manure. Where Mushrooms are grown the old coes, when broken up, form fine mulching material, and may be placed between the plants 2 inches thick, covering the whole surface, but not piling it up to the depth of anything, as that will do harm. Sow Brown Cos Lettuces and Green Curled Endive in quantity now for autumn and early winter use. Another sowing should be made in about three weeks. Te up Early Celery, and wrap paper round the plants to start the blanching. Old newspapers will do very well. Several thicknesses should be used. Cootions to give plenty of water, with stimulants in moderation, the Cardoons, Olive Artichokes, Cauliflowers, and any other crop which has reached the extreme limit of its power of endurance. E. HOBBS.

Work in the Town Garden.

This has been a very trying time for things under glass. (For that matter, in the open air also, though in this case the occasional watering and a good airing of the plants, or fibre or something of the kind goes a long way, in

doore the watering has been a terrible business, and there has been very little to show for it either, for the flowers are scarcely open before they either drop or fade. Shade has been an absolute necessity for almost everything, and even then, and with abundant ventilation, the atmosphere has been really stifling at times. I have been trying to get everything possible planted out-of-doors, and am still at it, for I find that under present circumstances they thrive far better in the open, and require very much less care and labour also. Tuberosa Begonia, in particular, does amazingly wonderfully sturdy habit and healthy appearance when planted in the open ground, and flower profusely, but an abundant supply of water is an absolute necessity, certainly until they become thoroughly established. It is as a bedding plant that the Begonia is destined to shine in the future, I feel sure. Of course, the plants must be thoroughly yet gradually inured to full exposure before being planted out. What charming and delightful things Streptocarpus are for conservatory decoration. I find them more easily grown than either Begonia or Gloxinia, requiring less heat than the latter, and being less liable to damping and decay than the former, while the growth is exceedingly dwarf, the flower-stems "wiry," and the blooms are produced continuously, and in the greatest abundance. The velvety foliage, too, is decidedly head-ome, but in order to keep this in good condition, the plants must be shaded from all strong sun. I hear numerous complaints of Tomatoes dropping their blossoms lately; in many cases this is due to want of moisture, either at the root or overhead, though the extreme heat and drought have also a good deal to do with it. There is as much danger of the plants suffering from want of water under present circumstances as there is of giving too much in the autumn, winter, and early spring. Where other plants are growing in the same house the glass must be studied in some way, and this greatly tends to weaken the growth and predispose to dropping of the blossom. Cyclanthes standing out-of-doors must now be watched, and directly they show signs of retarding growth, they should be repotted and be placed in a lightly-shaded frame until well at work again. Old Chinese Primulas, too, will soon need repotting, and should be similarly treated afterwards. Keep F. obscurata, etc., moist, and shaded. B. C. R.

THE COMING WINTER'S WORK.

Extracts from a garden diary from July 15th to July 22nd.

Sowed Cabbages for spring use. The kinds are Ellam's Early and Kidland Market. As we are much bothered with seed eating birds, the seeds were first dressed with red lead. The ground was thoroughly moistened in the evening, the surface raked smooth, and the seeds sown next morning, and covered with sand. Every good seed will grow. Sowed Pink Spinnock and Tropic in some way, and this greatly tends to weaken the growth and predispose to dropping of the blossom. Cyclanthes standing out-of-doors must now be watched, and directly they show signs of retarding growth, they should be repotted and be placed in a lightly-shaded frame until well at work again. Old Chinese Primulas, too, will soon need repotting, and should be similarly treated afterwards. Keep F. obscurata, etc., moist, and shaded. B. C. R.

4097. — Tropaeolum Fireball. — This is a very different thing from T. speciosum, being of larger and stouter growth, while it lacks the tuberous roots, and is propagated by means of short cuttings. Here, in the south, T. speciosum does best on a north, east, or west aspect, but in the north it is different. T. Fireball makes a capital greenhouse climber, and to a moderate temperature flowers profusely all the winter. — B. C. R.

— This is very different to the kind T. speciosum, the former being scarlet in colour and one of the so-called "Nasturtiums." It is used for the greenhouse largely. T. speciosum is a quite hardy plant, and creeps about charmingly in a moist, cool spot, such as is given to shrubs; but you know all about it, apparently, only the two kinds are quite distinct. The garden is the proper place for T. speciosum, or Flame Nasturtium, as it is also called. — C. T.

* In cold or northern districts the operations referred to under "Garden Work" may be done from the middle of a fortnight later than is here indicated, and in many good results.

FRUIT.

SOME GOOD EARLY PEARS.

For private use the very earliest Pears will never become much grown. Not only is there other good fruit in season, such as Peaches and Nectarines, but the quality is anything but satisfactory; and moreover, as soon as ripe, they are quickly over. Of course, there is one notable exception, this being the well known Jargonelle, which has always been a favourite and will always remain so. By early Pears it must be understood that I am referring to those which ripen up during September and October. Such Pears as these ripen so as to be of good quality when grown in the open; at any rate, they may be so grown in the southern or midland districts, where they invariably come of very high quality, being much more juicy, and, moreover, they keep better. Certainly they may be grown against walls either with an eastern or western aspect, but as a rule this latter aspect is generally retained for the later ripening varieties. For a high-class dessert, Jargonelle heads the list but, as a rule, this is an August Pear, and although so early, it invariably comes very good from an east or west wall, although, as is well known, many a garden can boast of some fine old standards, and as such it will succeed throughout the length and breadth of Britain. As a September Pear, Williams' Bon Chrétien is a favourite with many people, although by some it is

succeeds this kind. I now come to that best flavoured of all October Pears—Beurré Superfin. This is a grand Pear, with a vinnus flavour, and although it comes larger when grown against a wall, I think the flavour is improved when grown in the open; here it takes on that russet appearance, and although to outward look it does not appear ripe, yet it is, and anyone might be deceived. The late Mr. Haycock, who grew and knew Pears so well, told me that he always found it better in flavour when grown in the open, although at that time he hailed from Kent, and which, it must be remembered, is a highly favourable county. Whether grown against a wall or in the open, Fondante d'Automne will always be found of the highest quality. This Pear also has the advantage of keeping longer after being ripe than the majority of October Pears. Beurré Hardy will close my list of good quality early or October Pears. This, again, is a good Pear, coming much larger than the preceding, and from an east wall I have had the fruits very large. On cold soils I should be inclined to grow both of these latter named Pears on an east or west wall, the latter for preference. For extra quality in flavour out of the above-named varieties, and omitting Jargonelle, which should be in every garden, I should select Beurré d'Amanlis, Fondante d'Automne, Beurré Superfin, and Beurré Hardy, taking them in the order of ripening, although the season of each may be prolonged by either growing on different aspects or gathering at intervals of twice, and Fondante d'Automne at three or four times—If.

some experiments undertaken by Dr. Riley, Entomologist to the United States Department of Agriculture. Much interesting information is given. He says that recent experiments made have thrown much light on the comparative value of different arsenical mixtures as insecticides, and as to the relative harm they do to foliage. It was found that heavy spraying with one pound of Paris green to three hundred gallons of water did not injure the foliage. London purple used with the Bordeaux mixture to the proportion of one pound to fifty gallons was entirely harmless to the Peach and Plum. It was found that the eldest leaves were most liable to injury, and that dews, and probably direct sunshine, increase injuries done by arsenites to foliage. Leaves kept perfectly dry can hardly be injured by them, and those suffering from fungous disease are more susceptible than healthy ones. Freshly mixed and applied, London purple is most injurious, while freshly mixed and applied white arsenic is less injurious to foliage. The longer the mixed white arsenic stands the greater danger of injury. A great many experiments were conducted with a view to combine substances which are known to have both insecticide and fungicide qualities. While the results have been variable, it would appear, on the whole, that the combination of an insecticide does not add to the efficiency of a fungicide, but often detracts from it. The reverse of this does not hold true, as experiments have proved that while the Bordeaux mixture, combined with arsenite, does not act well as a fungicide, it is decidedly beneficial as an insecticide, as the arsenite can be used so much stronger. It was found that one pound of Paris green to five hundred gallons of sulphate of copper solution proved very injurious to trees, but that one pound of Paris green in two hundred gallons of Bordeaux mixture reared a large crop of Plums, while other trees not treated lost their fruit from the Cureuligo. These few particulars may be of use to you, as the Paris green and Bordeaux mixture preparation are most efficacious, as far as I have seen.—C. T.



Pear "Beurré d'Amanlis."

disliked on account of its highly perfumed flavour. As a market Pear, it will always be grown, and in America it is very highly esteemed, and is known there as the Bartlett. Like the majority of early Pears, it keeps but a very short time, and unless it is gathered before it parts freely from the tree it becomes mealy instead of juicy. This is where some people make a mistake with the Jargonelle by allowing it to hang until it parts easily from the tree, under the impression that this variety must be gathered and eaten from the tree, as sometimes described.

BEURRE D'AMANLIS (here figured) is a first-rate Pear, and with many it commences the Pear season. This is a very strong grower, and also a free bearer. Triomphe de Vienne I should have mentioned after Williams' Bon Chrétien, which it somewhat resembles, but of better flavour. This variety is not very well known, but its merits fully entitle it to be. Mme. Treve is a very prolific Pear; it also grows to a large size when freely thinned, and does capitally in the open. Fondante d'Automne is a very richly flavoured Pear, and succeeds admirably in the open, even on a cold clay soil. Birds have a particular liking for it, for I think they will find out this and attack it before any other. It has, however, one great fault—viz., that of quickly decaying in the centre, as soon as ripe. Being of such a nice flavour for an early or rather an October Pear, it is well worth planting. Souvenir du Congrès is a very large Pear, somewhat resembling Williams' Bon Chrétien in appearance, but much larger, and

4091.—Orchard (14 acres) destroyed by insects, caterpillars, &c.—This is a big undertaking, and in the case of trees planted 40 years the cleansing is not likely to be remunerative. Better arrange with the landlord to have all the worst trees grubbed up, at any rate, and young trees planted, after the thorough preparation of the site. If he understands his own interest he will hardly object to this; then as soon as the leaves are down give the trees a thorough dressing with newly-slacked lime, and place green bands round the stems. In the spring spray with Paris blue or London purple two or three times at intervals of three weeks, and wash the Plums with a strong solution of sunlight soap, boiled, 3 oz. to the gallon.—E. H.

As regards American Blight, you will find full information respecting its treatment in GARDENING, June 24, p. 239. You do not say what the trees are, and I should advise you to try a preparation of Paris green, a substance that is very much used in this country and abroad, France in particular, for dressing trees. It is used for spraying Potatoes as a remedy against the disease to great advantage, but I do not think has been much used yet in this country, although it will be doubtless in the future. There are two substances used, the other London purple, and I should advise you to try this new treatment in dealing with such a large area. I have had no experience actually of the preparations myself, but have seen the good effects of their proper application. So much destruction is wrought to fruit-trees through pests that one is always willing to give any information at command. I will give you a few particulars of

Periploca gracca.—On no account can this Periploca be called showy, yet when profusely laden with bloom it is very pretty, while close inspection will reveal the fact that the individual flowers are most interesting. It is a free-growing climber of a deciduous character, whose leaves are deep-green, from 3 inches to 4 inches in length, and firm in texture, while the flowers are each about 1 inch in diameter, five-rayed, and of a purplish-crimson colour inside, the reverse of the petals greenish-yellow. These blooms are borne in clusters of about a dozen together, and in the case of a thriving specimen where fully exposed to the sun they are often so numerous that the entire upper part of the plant is quite a mass of blossoms. The scent of the flowers is by no means pleasant. The plant itself is perfectly hardy.—T.

Primula scotica.—How lovely is this gem at the present, blooming for the second time after the recent rainy weather, and how superior in size are the summer-borne flowers to those of spring. It is so refreshing, too, to see this little beauty keeping company with late-flowering *P. sikkimensis*, *P. reticulata*, and *P. japonica*. Its violet-purple colour is of the intensest hue, and the stout little scapes of 3 inches high bravely sustain the flowers through the most windy weather. I wonder this plant is not better looked after, because you have only got to pick off the seed of the spring-borne flowers, rub it out into a little peaty damp soil, and it comes up thickly during late summer, and you have a group of blooming plants for the following spring. Treated this way, as an annual or biennial, it well rewards the little care needed, though I possess plants at least three or four years old. May I suggest a cross between this small species and the larger *sikkimensis*? One can imagine not only curious results from such a cross of the pigmy and the giant, but progeny of considerable merit from the florist's point of view.—B.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruits and vegetables for drawing. The drawings so made will be engraved in the best manner, and will appear in due course in GARDENING ILLUSTRATED.

OUTDOOR PLANTS.

NOTES ON CARNATIONS AND PICOTEES.

The parent of the garden Carnation is *Dianthus caryophyllus*, the wild Carnation or Clove Pink, which loves to scramble about on old castle walls and send its roots into the mossy chinks. It must be a poor garden in which some of the varieties—originated from the wilding form—are not present. The most peculiar Carnation is the Old Clove, a crimson, fragrant flower, spreading out into broad clumps; but often sadly afflicted with a disease called "gout," a peculiar swelling of the stem. In many places it refuses to grow, even with the most kindly treatment. The florist has divided the Carnation into several sections, according to the disposition of colour on the petals. Thus we have scarlet hizarre, pink and purple hizarre, purple flake, scarlet flake, and rose flake, besides yellow ground, faucy, and horder varieties. I propose at first to deal with the border kind, which those who merely wish to have a pretty garden, and not undertake the culture of the Carnation for exhibition, should commence with. The plants for the horder or bed should not be grown at any period in pots, as customers with those for exhibition, and the culture that applies to the Carnation is also suitable for the Picotee. During the past few years raisers of new Carnations have been busily at work, with the result that a fine selection of good hardy border varieties is at command. A typical garden Carnation should be of strong growth, producing plenty of "grass," and here I may mention that "grass" is the florist's term for the leafage, and throwing up on strong, sturdy stems an abundance of flowers, which do not split the calyx. Many of the older forms, and the Clove Carnation is not free from this glaring fault, produce blooms that burst the calyx, the mass of petals proving too powerful for the shell, so to speak, in which they are confined. This is a very important point, as bedraggled petals, tumbling out of their calyces, have an unightly aspect. The finest varieties have been pointed out in GARDENING, all having flowers that do not split. I saw last year a very charming picture of Carnations, the variety used being Baby Castle, which has blooms of a lovely salmon-pink colour, and produced in profusion. Edgings were found of it in the kitchen garden, and these supplied not only a large quantity of bloom for the house, but were pleasing to look at. Scarcely a split calyx occurred in hundreds of flowers. A moderately light friable loam is the soil that Carnations most enjoy, and if it inclines to be heavy a dressing of well-decayed manure or wood-ashes will effect the useful alteration. One of the chief enemies of the Carnation is wireworm, which effects in particular newly broken-up pasture land, and in such material Carnations should never be planted, else wireworm will prove mischievous. I have seen choice collections in the open ground entirely destroyed through planting a newly turned up ground. Strong stable-manure is not required, and, although we see it sometimes applied, is positively hurtful. Many amateur gardeners are filled with the idea that to make plants grow it is essential to give them rank manure to feed them, promoting strength and a superb display of the finest flowers. Such treatment is the reverse of suitable, and plants so treated show their dislike by promptly dying away. Loam should be the staple diet for Carnations, and in spring, after frosts are over, much good results from a top-dressing of loam, manure well decayed, wood-ashes, and, not least important, soil, a splendid fertiliser, giving rich-green colour to the leafage, and assisting to stop the depredations of wireworm. Always, as far as possible, plant Carnations early—that is, if from layers, in late August or September, so as to become thoroughly well established before frosts occur. When this is done, they will go well through the winter, and if planted in spring there is not a very long season for them to become well established before the display of flowers occurs. It is better, however, if the autumn planting is much delayed, to put them in pots, and keep them in a cold frame during the winter, planting them outside in the month of March or early April. As the flower spikes rise such must have a stake, or some form of support.

There are several advertised contrivances, but nothing is better than a deal or Hazel stick, which in country places may be procured very cheaply. Keep the stick as much as possible out of view, remembering that one wants to see the flowers, a point which amateur gardeners do not always seem to consider. The

PROPAGATION of the Carnation is not a troublesome undertaking. Layering of the shoots is the chief method, and about the middle of July, not later, is the time to proceed with the work, finishing it by early August. The first thing to do is to remove carefully the soil from about the plant, so as to form a very shallow basin, not more than 2 inches in depth. If the soil is not considered of sufficiently good quality for rooting the layers it may be replaced by a little light compost, friable loam, leaf-mould, and sand, into which the shoots can be pegged down; but in many soils the extra compost is not necessary, watering and loosening the surface with a hand-fork being all that is required. Remove the leaves from the shoots to within about the three top joints. Weakly shoots should not be layered. All will now be ready for layering, and with a very sharp knife make a slanting cut a little above a joint, so as to form a tongue. Unless care is taken the shoot will be cut right through and rendered useless, except as a cutting. Have in readiness plenty of short, hooped pegs, made from the spray of Pea-sticks, and peg the shoot down into the soil just above the tongue, which, in the course of about three weeks, will send out roots. Over the surface place a little of the prepared compost, and water them carefully through a fine roset-watering-pot. This will settle the soil, and they may be left pretty much to themselves, except for an occasional watering in very dry weather, until it is time to lift them for transferring to their winter quarters. The end of September is the time for this work, and try to get them all planted before frosts occur, as upon that depends in a measure their future success. It may be advisable here to make reference to the Carnation as a garden flower. Flower gardeners seem only now to begin to realize that the Carnation may be made to produce beautiful pictures of colour in bed and border. The old Clove has always held an honoured place, but there is now a long list of lovely kinds, strong in colour, effective, and pleasing in groups, clumps, or masses. In several of the finest English gardens the self-coloured Carnation—that is, those of one decided colour, or shades of one colour, hold a high place, dethroning the rigid hedges which held court through many years. Bold groups of Carnations, associated with Tea-Roses, form a charming picture, and the soil that agrees with one is also agreeable to the other. Even in the smallest garden much space may be advantageously given to this border flower, unique for colour, fragrance, and distinct beauty.

CARNATIONS may be propagated by cuttings, but it is not a favourite plan, as plants from cuttings never succeed so well as those from layers. There is much trouble, too, occasioned by attending to them. They may be struck in pots filled with light soil and thoroughly well drained. Artificial heat should be given to promote, in the case of winter-flowering varieties, quick rooting. It is most necessary not to give too much water, otherwise they will damp off wholesale. The utmost care is essential in this respect. When the cuttings are taken off in the summer, and it is often usual to select shoots which cannot be layered for the purpose, they may be drilled in light, well prepared soil at the base of a shady wall. Cover them with hand-lights, removing each day the glasses to wipe off damp, otherwise the cuttings will rot. When rooted they may be potted out or potted on, at the wish of the grower. The

PICOTEE is a charming flower, telling in colour, and, like the Carnation, divided into various sections according to the colouring. I have many and light rose-edged varieties, and the same distinctions in purple, the ground white—delicate associations of colour, but not effective in the open to the same degree as the more brilliant tones of the Carnation. The yellow ground Picotees and Carnations are not so satisfactory to grow as other types, and I should not advise the beginner to have much to do with them, except Germanie, a very good yellow ground variety.

4089.—Sweet Williams, &c.—The side-shoots of the Sweet Williams may be layered in the same way as its relation the Carnation is done. The Canterbury Bell is a more difficult subject for propagation in any other way than by seeds, and if the plant or plants of which increase is required are isolated these come pretty true from seed. They cannot, of course, be relied upon to do this absolutely; but if seeds are sown exclusively from one colour and no other grown near, the greater part of the seedlings will be of that colour. If Canterbury Bells, or a certain portion of them, have all the flower-spikes removed as they appear, some increase may be had by division of the root-crowns. This is a slow process, but it is a sure one of keeping plants true to colour.—E. H.

— If you only have one plant of each kind there will be no difficulty. All you need do is to sow the seed as soon as ripe, and it will produce plants true to the parent stock, unless your neighbour chances to have something different in his garden. In any case many of the plants will be true. You could divide the roots of the Sweet William in the autumn, but in the case of the Canterbury Bell you must take your chance with the seed. Sow as soon as the latter is ripe, and your plants will then bloom next year.—A. G. BUTLER.

— You will have no difficulty in propagating these. The Sweet Williams may be readily raised from seed, which should be sown in a well-prepared piece of ground in a rather sheltered position, and the surface made firm. When the seedlings are of sufficient size to handle pick them out about half a foot apart, and from thence they may be transplanted to the positions they are to adorn. The best time to sow seed is April or May, and there is a wide selection of varieties, varying greatly in colour. Another way to strike them is by cuttings in the month of June, which may be dibbled in prepared soil, over which place a hand-light; a position on a shady border will suffice. Take care not to give water too freely. They will strike well under these conditions. You can now get quite a selection of colours, and the double crimson is a splendid flower, each bloom like a little rosetta. A mass of this is very handsome. There is much beauty in the Sweet William, the handsome trusses and refined flowers being of great effect in the garden. The most effective are the selfs, or those of one decided shade, set off with a white margin. The Canterbury Bell may be also very readily raised from seed, and it is a charming flower; the colours vary, from pure white to deepest purple, through shades of rose and allied tones. The usual time to sow them is April and May, but it may be sown now, and sown in a warm corner in the open, where the surface of the soil is fine. Sow thinly, and when of sufficient size transplant. It may be also easily grown in pots for the summer decoration of the greenhouse, the seed being sown in spring. The plants when in pots and in full bloom are charming, if you get a good range of colours, especially rose, which I think the more beautiful of the series. Guard against getting them of too large size, as then they are coarse, the big Cup and Saucer type having little beauty compared with those of more normal proportions.—C. T.

— You may take cuttings of the Sweet William in the ordinary way, choosing stubby side-shoots, and if inserted firmly in sandy soil towards the autumn they will root and make good plants. I have never rooted Canterbury Bells from cuttings, and should say that you cannot do better than save all the seed possible, and sow it next April or May. If the seed is ripe now, gather and sow it at once.—B. C. R.

4095.—Broom.—Healthy young plants removed in October ought to grow readily enough. I expect they have suffered from want of water. The best plants are obtained from seeds, but they take some years to attain a useful size. On the whole, it would be better to procure plants from a nursery, which would be more likely to thrive than wild ones; they may be removed either in the autumn or in the early spring.—B. C. R.

— This plant transplants very well in a small state, but I should expect large plants to die, especially in a season like the present. Cuttings will strike in a shady place early in autumn, but the best way to get up a stock is to sow seeds. You might clear a piece of the wild ground during the winter. Stir it up again, and sow the seeds in spring.—E. H.

4095.—Box edging.—Cuttings from a bush of Box will not make a Box edging. The dwarf Box used for edgings is not the same kind. If you have no Box you will,

doubtless, be able to obtain it from a local nurseryman, the cost being generally 6d. per yard; 1 yard when pulled to pieces to furnish enough to plant three. In preparing the site for the edging dig it over and tread it down firmly, then add sufficient soil from edges of border near to make the ground the right height. Make it smooth, and heat it down firm with the back of the spade. Put down the line, and cut out the trench deep enough to receive the Box, leaving about an inch above the ground when all is filled up and made firm. If planted in dry weather the Box must be watered thoroughly till the weather changes. Better wait till autumn before planting Box-edgings.—E. H.

PERENNIAL CANDYTUFTS.

This is a beautiful and useful group of hardy plants, both annual and perennial, and it is with the latter as rock and spring border plants that I am now dealing. Evergreen plants, such as the Iberises, dwarf Vacciniums, and the like are indispensable to a rockery; they should be planted as much with an eye to effect in the dead of winter as when they are in full flower in spring. The hardy species are all evergreen, and as they mostly form dense, healthy green cushions, these take the bareness off the rockery in the dull months, as well as contribute to its beauty in spring and early summer. They are, however, most effective where they can hang over ledges, such as down the face of old walls, rocky banks, &c., and here, too, the more tender sorts would be much safer than if planted in the ordinary way or on the border. As spring bedding plants they are extremely useful, and they may be increased from cuttings in any quantity.

IBERIS GIBRALTARICA.—This, here figured, is a native of Gibraltar, and was introduced to this country about 1732. It is one of the most popular of the genus, and with its variety *hybrida* is in great demand for winter flowering. It grows about a foot or so high, closely branched and tufted, with leaves and flowers much larger and more ornamental than those of any other species. It is, unfortunately, not perfectly hardy, unless the plants when young are established in an old brick or stone wall, and even here they are apt to suffer, especially in wet seasons. It may, however, be easily kept in a cold frame or greenhouse, where it will continue in flower throughout the winter. As greenhouse subjects both the species and variety are invaluable, their compact habit, fresh green leaves, and abundance of lilac and creamy-white flower-heads come at a time when most required; indeed, they may be utilised at almost any time, as they are rarely out of bloom. Plants well hardened might be tried in warm nooks of the rockery, and with a small piece of glass to ward off excessive moisture they might do well. It is as a cool greenhouse or summer plant, however, that this species proves most useful, and as it is increased from cuttings or layers with the greatest facility, no fear of losing it need arise. The variety is more compact in habit than the type, with larger bunches of creamy-white or rosy-purple flowers. *I. Pruitii* is a native of Sicily, and one of the most beautiful and useful of the hardy kinds for the rockery or border. It is little inferior, indeed, to *I. gibraltaria*, with the advantage of standing our severest winter. The flowers, of a pure ivory-white, are produced in abundance in compact corymbs, and continue from early May until July. The stems are shrubby at the base, much branched, and rarely exceeding 9 inches in height. It is nearest to *I. Tenoreana*, but the leaves are smooth, not ciliated, and the flowers pure-white, not purplish, as in that species. It is a really useful species for the rockery, where it should be planted in gritty soil and facing east. *I. exaltata*, widely distributed in Southern Europe, is the dwarfest of all the species in cultivation. The stems are procumbent or trailing, not ascending, as stated in many books. It forms dense tufts of very dark-green, narrow leaves, quite entire, with somewhat ciliated margins. It is very free blooming, producing small bunches of pure white flowers from early April until June. It was introduced about 1740. *I. s. var. correntifolia* is supposed to be a hybrid between *I. saxatilis* and *sempervirens* or *Garrexiana*. It is a very neat, shrubby plant, taller and not so densely matted as the above, and producing

its flat heads of white flowers from May to June. It is

VERY EASILY PROPAGATED from cuttings or layers, and is often used as an edging for walks, &c. It is very neat and effective when in flower. *I. sempervirens* is an autumn and winter flowering species, and unless in southern counties is not of much use as a hardy plant. The flower-heads are large, the flowers pure white and sweetly-scented; the leaves quite entire, smooth, and dark-green. It is a native of Sicily and Italy. *I. humilis* is a synonym. *I. sempervirens*: This fine species is the common perennial Candytuft of our gardens, and with its variety *Garrexiana* is the species commonly met with in small places. It is quite as popular as the yellow *Alyssum*, and deservedly so, as it requires little attention and is attractive in winter as well as summer. It is evergreen, half shrubby, spreading, and will be found useful for old walls and such-like places where plants can get a foothold. It grows about 1 foot high, and seems to flower more freely in a gritty soil than in any other. There are several garden forms, the best of which is *superba*, a really charming variety, free and effective. *Groeco*, &c. *I. s. Garrexiana* is a much dwarfier plant than the above, with smaller heads of white flowers, and a very useful rock plant. It flowers from April to June, and is a native of the Pyrenees, &c. *I. Tenoreana*: A common species in Italy, Spain, and Portugal, and known in some gardens under the name of *I. petraea*. It differs from all the other species excepting *gibraltaria* in the colour of its flowers, which it produces in profusion throughout the summer months. Like *I. gibraltaria*, it is not to be depended upon as a perfectly hardy plant, and when left out some little protection should be given to it. In a well-sheltered nook and in free well-drained soil it does well in the south, where its mass of purple flowers is always welcome, but in any case it can be easily treated as a biennial or even as an annual by striking cuttings in late summer and planting out in spring. It is well worth the trouble and is really effective when grown well.

K.

4059.—**Lilies and Irises.**—I regret that I misunderstood "Australasian's" first query on this subject, and I am equally sorry that I cannot give him much encouragement to embark in the culture of Lily bulbs for profit. Such Lilies

very low rates. It would never pay to grow them in this country. The common White Lily, the Tiger varieties (*umbellatus* and *croceum*) may be grown very well in good well-drained ground; but the Dutch offer them very cheap indeed. For instance, I can buy *croceum* at 12s. per 100, *tigrinum splendens* and *flora-pleno* at about 10s. per 100, all good blooming bulbs, these being trade prices. Really good bulbs of *candidum* now so much in request I can get for 15s. per 100. Auction room prices will frequently run 30 per cent. lower than those above quoted. As regards Irises the case is rather different, as many of the finest of them can be grown and increased in this country. I should, however, be sorry to rely entirely on auction room returns. Growers only send those what they cannot dispose of in any other way. Things very good or rare will make good prices, but I have seen plants and bulbs sold there for a mere nothing.—J. C. B.

4058.—**Creoper for a cemented wall.**—There is no other creoper but the *Ampelopsis Veitchii* that will cling to your wall. The seed of the variegated Hop and Canary Creoper should not be sown until the spring. The beginning of April is soon enough, and an ordinary greenhouse will furnish all the warmth they want. I find the Variegated Hop does very well in a sheltered position in the open; indeed, the foliage is then very handsome, but much wind disfigures its leaves and checks its growth.—J. C. C.

—Various kinds of Ivy, including the small-leaved variegated varieties, will cling to the cemented wall if fairly started. *Euonymus radicans variegata* may be tried, but there are no plants beyond the Irish and Virginian Creeps that will hold so firmly to a cemented wall.—E. H.

—The best thing for such a wall is the Virginian Creoper (Veitch's), clinging well even to such a surface as this; but you might with the aid of wire grow other things of greater interest than this, entailing, of course, the "wiring" of the wall. If you do not wish to go to this expense, rely upon the creoper named, as even the Ivy requires support of some kind to stay with. But you will get much pleasure from the wall if a wire is run across, to which the climbers could be fastened or trained. Then you could go in for many beautiful things, as the *Pyraeantha*, Clematites of various kinds, Jasmines, Honeysuckles, Roses, particularly the beautiful *Gloire de Dijon*, *Tropaeolum canariensis*, and other interesting things; but this



A perennial Candytuft: *Iberis gibraltaria*.

as *anatum*, *speciosum longiflorum*, *Harrisii*, *Browni*, *Kramerii*, &c., are grown in a climate that perfectly suits them, and are consequently imported into this country in large quantities. They are disposed of in the London auction rooms at prices that I do not think could pay English growers, even if they could command the same climatic advantages that the Japan and Dutch growers enjoy. As regards the North American Lilies, they are to be had in quantity from their native habitats, and some of the American trade growers offer them a

small selection will provide much beauty. The seed of the Canary Creoper may be sown in the spring, and the plants will make quick growth. It is a very pleasing feature, the leaves even attractive with their glaucous shade.—C. T.

Registering thermometers.—A spirit thermometer should never be exposed to the sun, as the heat is sure to induce the spirit to evaporate from the top of the column, and to condense at the end of the tube, which, of course, prevents the readings from being correct, unless the amount which collects is made to rejoin the column.

ORCHIDS.

ARUNDINA.

This is a very beautiful plant, and it takes the place of the *Sobralia* in the Western Hemisphere. I am asked to say a few words about this plant by "Mr. Todd," for the benefit of himself and friends, with whom he has shared a boxful of these plants from Sylhet. Well, this plant was introduced in the early days of the present century, and it flowered first in this country upwards of fifty years ago, but it remained a rare plant for many years—indeed, until Mr. Sander introduced this plant in quantity a few years ago. Orchid growers did not know much of the species. Some few other kinds have been introduced from time to time, but they have not long remained in cultivation. I am very glad you have got some living plants home, and I am also pleased to hear of your distributing them amongst your friends, because in this way you are safeguarding the life of the species, for if one fails in keeping the plant or plants alive another may keep them, and thus it will become the source from which you can get a fresh supply. To secure a fair chance of success with this plant, it should be provided with a somewhat light place in the stove or Orchid-house, which should have a nice moist atmosphere, and the temperature should never fall below 65 degs. during the growing season, and water should be freely given to the roots. The pots must be large, as they are coarse rooters, and they take up a deal of room, and as they require quantity of water to their roots they must be well drained, so that it may percolate away quickly, for this is a plant that cannot abide any sourness about its roots, and for soil use fairly fibrous peat, chopped up coarsely with the spade, and good fibrous turf loam, in about equal proportions, made sandy. In potting they should be kept below the rim of the pot in order to allow the plant to get a good supply of water during the winter season. These plants are best kept somewhat cool and drier, but not dry, and the temperature may fall as low as 55 degs. or 60 degs. without the plant suffering in the least.

A. BAMBUSIFOLIA: This plant has been a rare one in collections, and not known by many orchidists. In growth it very much resembles a *Sobralia*; it has slender erect stems from 1 foot to 4 feet high, with long, narrow distichous leaves, which become smaller upwards, and light-green. It bears on the end of its stem a fine spike of flower. This varies considerably in colour, but the leading charms of a good variety, sepals and petals spreading, of a charming rosy-pink, the petals with a broad streak of rosy-purple down the centre of each petal, lip rolled over the column, these side lobes about the same colour as the petals, the front lobe, undulated at the edges, and of a rich rosy-magenta, which colour is carried up round the recurved edges of the side lobes, throat white, bearing a flashy crest.

MATT BRAMBLE.

CYPRIPEDIUM CURTISI.

In answer to the enquiries of several readers, I will now say a few words about this plant, for which we were indebted in the first place to the energies of the Messrs. Veitch and Son, who introduced it from the Island of Sumatra some eleven years ago; but to the Messrs. Sander and Co., of St. Albans, we owe its great popularity, they having introduced it in quantity only a few years since, and I have seen many good forms which have sprung from these plants. It is one of those kinds which have marbled leaves, the upper side having a dull-green ground, which is tessellated with blotches of a darker green, the underside being of plain dull-green; the scape is single flowered, but the bloom is very large, the dorsal sepal being ovate, bright-green, with a white border, and deeper green longitudinal stripes, and the lower one smaller but similarly marked. The petals are slightly deflexed, having a white ground copiously spotted with small purple dots and heavily fringed with blackish-purple hairs, pouch large, dull-coloured, with a few purple veins. It is a very beautiful plant, and it is conspicuous from being quite devoid of the blackish wort-like spots which are such a distinguishing feature in nearly all the species which belong to the *barbatum* section of the

Lady's Slipper family. Many plant growers and plant lovers I know do not like *Cypripediums*, but I myself have a weakness for them, and I have frequently expressed my own conviction from the time when the members of the coriaceous-leaved section could be counted upon the fingers of one hand, that I am heartily in love with them, and I still retain that love, in spite of the great number of seedlings that have cropped up, and all of which I welcome, so long as they reveal distinctness and beauty, and one of the points particularly to be frightened and made gay is the pouch or lip. Well, then, this *Cypripedium* requires exactly the same treatment and warmth that suit *C. barbatum*—that is to say, it likes good strong heat and moisture, and it also likes a certain amount of shade during the hottest and brightest part of the day, using for soil a mixture of good peat-fibre and Sphagnum Moss, and a small portion of good, light fibrous loam, from which all the fine soil has been shaken. This loam is something fresh to recommend, but I have been taking a great interest lately in a collection to which this element has been administered, and with good effect too, so that my readers may take what I say in good faith without hesitation; but you must be sure that the drainage is kept in good open order. Water freely during the summer months, and during the winter keep the plants fairly moist, but never let them get quite dry, and all will be well.

MATT BRAMBLE.

PLEIONES.

CONCERNING his plants of this genus, "Duncan" appears to be in a sad way. He says: "What shall I do? My employer is so passionately fond of them, and I fear that I shall fail with them this season, for the leaves are turning quite brown already, although the bulbs are not more than half the size of the last year's ones." Well, now I fear you have been too fast with these plants, my friend. You have from time to time got the plants on, and from year to year they have been flowered earlier and earlier, so that they have naturally got to grow so early that they have got altogether wrong. Now, I do not like to see those plants flower too early. For instance, last season I saw in a garden belonging to a reader of this paper some flowering in the month of October. This is brought about through the potting of the plants too early, and, like friend "Duncan's," so it goes on until the plants get smaller and smaller, and they eventually die out. In the present instance, however, it may arise from too free an exposure to the sun, and from the atmosphere being kept too dry, and, therefore, I should advise "Duncan" to shade his plants during the hottest part of the day, and to keep the atmosphere moist. This will induce them, perhaps, to finish up their bulbs before losing their leaves, and if this occurs flowers will follow in due course, I should think; but in the event of their not flowering take the plants into the cool-house, and there let them rest in quietness, and allow them to rest as long as possible. These plants are all alpine, and from their habit of flowering during the winter months without their leaves, have retained the name of Indian Crocuses, and nothing can make the Orchid-houses more cheerful than these beautifully coloured flowers. *P. maculata* is the earliest, blooming in about the beginning of November, and the others following on through December and January; but as they are grown now I have observed that even the latest kind, *P. lagenaria*, is all over and done before December sets in, but this I look upon as wrong treatment. The plants should not be subject to too great a heat; it causes them to grow at a great pace, and they grow weak, and do not develop such fat bulbs as when grown, say, near to the glass in the *Cattleya*-house, kept nicely moist, and with a good amount of ventilation, and this too may be given principally at night. In this respect I am quite at home with some of my friends, for I do not agree with my earlier teachers, who taught me to shut the houses up close at night. In potting these plants the drainage should be of the first importance, using for soil a mixture of peat, leaf-mould, loam, and Sphagnum. Water freely when growing, and when the growths are finished, and the leaves fall, they may be kept fairly dry and cool; but I do not like the temperature to fall much below 50 degs.

I hope what I have written will be of some service to my friend "Duncan," and he may depend upon it, in this and every other trouble, he has an anxious and sympathising friend in
MATT BRAMBLE.

HOUSE & WINDOW GARDENING.

THE MANAGEMENT OF ROOM-PLANTS IN SUMMER.

FLOWERING-PLANTS kept constantly in a sitting-room are apt to become flaccid and weak, so that they fail to bring the bright blossoms which might otherwise be looked for in due season. The time has now arrived at which they are best out-of-doors, even delicate semi-tropical plants, such as *Arum Lilies*, *Orange-trees*, &c., being all the better for the invigorating effects of the outdoor air and the heavy dews of summer-time. A thick bed of ashes (sifted from the cinders of the house) laid down in front of a rather low north wall, which will allow of some vertical sunshine without baking the tender roots which cling to the pots, is an excellent place for room-plants in summer. If no such shelter as a wall be available, the pots should be sunk to the rim in fine ashes, which can be kept moist by copious watering in dry weather with a rosetted pot or syringe. Here *Azaleas*, *Ericas*, *Camellias*, *Rhododendrons* will form their flowers for next spring. *Lilacs*, too, of many kinds will bring their blossoms to perfection, being lifted into the drawing-room as they open, and returned to their out-of-door quarters when their flowers fade to slowly ripen their foliage and bulbs until the autumn, when they can be repotted. *Arum Lilies*, *Spiraea japonica*, and all spring bulbs, unless they can be put out into good garden soil for the summer to ripen, which is even better, can here store up strength for next season, being regularly applied with water, and given liquid-manure in a thin, clear state once a week, until their time for repotting arrives in autumn and they are again taken in. *Freesias*, too, having flowered in early spring, will stand here—looking very untidy with their drooping "grass," hanging about half-dead—until the end of July, when the neat little bulbs are ready for repotting, and can be planted (two or a dozen thickly in a 5-inch pot) in light, rich compost, and replaced on the ash-bed, where they will soon start into fresh life, and should flower about Christmas, being lifted into a warm sunny window at the end of September. *Ant-Roses*, looking drawn and weak from being long indoors, will here renew their strength, ripen their wood, and, perhaps, if mulched with good stuff, bring a few lovely autumn blooms; they should be pruned in November and potted at the same time, being allowed to stand out-of-doors until the first severe weather sets in, and given plenty of air and a sunny window. Then *Libonias*, too, well hardened in summer, will bring a mass of bright bloom in early spring, or even at Christmas, if placed in a warm greenhouse, and many another window-plant will renew its strength with plenty of open air. Regular and thorough watering must not, however, be forgotten, and the syringe freely used in the evening on *Azaleas*, *Chrysanthemums*, *Roses*, and, indeed, all the plants will keep off blights and induce strong growth. A rosetted watering-pot, where a syringe is not available, will make a fair substitute unless the plants are already infested with green-fly or thrips, when they should be dipped bodily into a solution of soft-soap, with the liquor of an ounce of shag Tobacco, boiled, mixed with it. This bath can be kept at hand for a week or two, and any plant on which blight can be discovered should be daily dipped for a week, washing off the soapy water an hour later with clean water, so as not to clog the pores of the leaves. After this thorough cleansing regular attention in watering and syringing should prevent a further attack.

J. L. R.

A new room plant (*Grevillea robusta elegantissima*).—This very beautiful variety of *Grevillea robusta* has much to recommend it for the decoration of rooms, for it combines the effect of a fine Fern with the robust growth of a small tree, which indeed it is—the "Silky Oak" of Australia. The leaves of the new variety are wonderfully finely serrated

and of a more drooping character than in the older *G. robusta*, so that the effect is still more like that of a handsome Fern. Seedling plants, raised in heat early in the year, can now be procured and grown on in small pots, with a light compost of leaf-mould and loam, until they are large enough for decorative purposes. This will need a sunny bow-window, without severe draughts, to bring them on quickly, although the little plants must, of course, be kept in a shady, cool place for a week or so after they are potted. As they become larger they will need another shift, but Grevilleas do best in rather small pots for their size, which are also the best for furnishing.—I. L. R.

Diplacus glutinosus for a window.—This plant is an old-fashioned favourite, but none the worse for that; in fact, it is a valuable room plant, its bright masses of apricot-coloured flowers being remarkably decorative. Although it is in reality a woody *Mimulus*, it can be cultivated very much as though it were a "Geranium"—i.e., repotted when necessary, giving the plant only a slight shift, and allowing it to rest during the winter months. Any ordinary potting compost will suit it, if it be well established. Cuttings, which can be taken at any time during the summer, should have light sandy soil, and be placed in a cool, shady

9 inches apart 'in good ground early in April, keeping them clean and well watered in dry weather.—J. C., *Byfleet*.

INDOOR PLANTS.

HYDRANGEAS AND THEIR CULTURE.

THOSE who live in distant parts of the country, on their first visit to Covent-garden-market, if such happens to be during the spring or early summer, see nothing that strikes them more forcibly than the numbers of *Hydrangeas* grown in small pots, not generally more than 6 inches or 7 inches in diameter. The plants grown to a single stem, 6 inches or 8 inches high, are furnished with three or four pairs of healthy leaves, surmounted by a globular head 12 inches or 15 inches through, generally of the freshest and clearest bright pink colour, although a few are met with possessing the blue shade that is so much prized by some, and for producing which there are several different recipes, in the shape of soil more or less impregnated with iron filings, charcoal, or slum, or pure peat. I have always found that if the plants were supplied with the large quantities of manure-water requisite to give size to the heads of flower, whatever the nature of the soil or ingredients added to it, the blooms

in which state they should be taken off at about the third joint below the bud, and inserted either singly in small pots or several round the side of a 6 inch one. Place a few bits of crocks in the bottom of each, on these a little fibrous material, and dry or flaky rotten dung, such as has been used for mulching a *Vitis* border or *Asparagus*-bed. They are in no way particular as to soil, but if it is preferred to have some of a blue shade and others the normal colour, a portion may be struck and grown in sandy peat and the others in loam, in both cases using it for the cuttings in something like a proportion of one-fourth sand to the loam or peat. The cuttings should be severed at a joint, and inserted firmly in the soil, the leaves, except those at the base, which must necessarily be removed, being retained. A slight hot-bed should be prepared, on which place an ordinary frame with glazed lights; in this plunge the pots, keeping them well moistened and shaded from the sun, but with the lights tilted night and day, so as to keep the tops cool, otherwise the heat will have a tendency to cause them to break into growth, and they would be spoilt for flowering in the dwarf state they are intended to assume. They will soon strike, after which the shading must be dispensed with, and when they are well furnished with roots at once remove them to 6-inch pots, in which they may be allowed to flower. Keep them quite cool through the autumn—any pit, frame, or house will answer, in which they will not get frozen—it is better not to subject them to frost; they will cast their leaves before winter, nothing remaining but the woody shoot with the bud at its extremity; but never allow the soil to become dry, or the roots will suffer. If desired, a portion of the plants may be had in bloom early by putting them in a moderate heat at Christmas, such as a vinery or Peach-house at work, or anywhere where an intermediate temperature is kept up. Here they will soon commence growing, making two or three pairs of leaves below the flowers. As soon as they begin growing freely those that are intended to come with pink flowers may be assisted once a week with moderately strong manure-water, which will cause the production of much larger heads of bloom; but we have never been able to produce flowers of a decided blue colour if manure-water was used; when it has been given to them even when they were grown in all peat, or with slum or iron in the soil, they have come neither one thing nor the other, but a not very pleasing mixture of both. Such as are wanted later may be put in a little warmth, and some allowed to come on with the assistance of solar heat in an ordinary greenhouse temperature. So managed, a



A fine specimen of the Pink Hydrangea.

place for the first few weeks, when they will soon take root. Well-grown plants with plenty of wood should be potted (after cutting back the untidy sprays) in March, and covered with a balloon wire frame. If the young growth be trained as it grows to these wires (turning the plant constantly, so that it gets sunshine evenly on all sides), the effect, when in full bloom, is much better than when the plant is allowed to grow loosely, for its habit is not very neat, and the flowers thus trained show themselves remarkably well. When the plant goes out of bloom in autumn, it can be kept in a bedroom, or any place where the temperature does not go below freezing-point, being watered only when the surface soil is thoroughly dry; it must then be given sufficient water to run through the pot, when it will not need more for a week or two.—I. L. R.

4060.—**Marie Louise Violets.**—I should not advise you to grow these for profit in the open air unless you are exceptionally favoured as regards climate. Where fog prevails the flowers and buds are apt to be destroyed wholesale, and frequently the plants are killed. Lifted in October and planted in frames they are satisfactory. Heat is not required, unless protection from our cold, damp winter. The plants need well growing for winter blooming, putting out runners or pieces of divided plants

when fully matured, were pink of some shade. Larger specimens are grown for the London market bearing several heads of flower each, but for general decorative purposes the small plants with single heads are much the most to be preferred. In addition to the pleasing colour, general attractive character, and long endurance of the flowers, the plants possess the advantage that during the time they are in bloom they can be stood in places where there is comparatively little light, even under the shade of other plants, in positions that few if any other flowering subjects would bear without being so injured as to be useless afterwards. There is a

LARGER VARIETY of the common form, with the individual flowers of which the head is composed, as well as the head itself, much bigger than the other more generally known kind. This is the best to grow, differing in no way as to the treatment it requires in propagation, soil, and time of flowering. Cuttings will strike at any time of the year that they can be obtained in a half or three-parts ripened state, but to ensure the large heads on small plants, such as above described, the best method is to have a few plants grown out in an open, sunny situation, where they keep strong and short-cut. Those, according to the early or late character of each season, will generally get sufficiently matured to be taken off in August, at which time the buds will be formed in the points,

SUCKERS of flowers can be kept up for six months. If suckers are produced at the base these should be removed until the plants come into flower. After the blooms have got shabby the shoots that have borne them may be cut out at the bottom, as suckers are sure to spring that will make more compact plants; plunge them out-of-doors for the summer, winter out of the reach of frost, and in the spring, just as they show signs of beginning to grow, head them right down to the bottom. They will quickly throw up shoots that will produce large heads of bloom on much shorter growth than if borne upon the old wood formed the preceding year. I have kept plants for three years in the nine 6 inch pots they were first potted in without either change or addition of soil, simply by using manure-water during the time they were growing; in the second and third years they produced from three to half-a-dozen fine heads, showing what can be accomplished by the aid of liquid-manure to such plants as will bear it; in this case they may be said to have been altogether supported by it, as the small quantity of soil in which the roots were placed must, after the first year, have become so exhausted as to be nothing more than a medium through which the liquid sustenance was conveyed to them. For anything perceptible in the appearance of the plants as to vigour and ability to produce flowers, they would have gone on longer without change or addition of soil, but the experiment was cut short through unforeseen circumstances. If it is thought advisable to grow some on to a larger size, they should, when commencing to flower, be moved into pots proportionate to the size they are wanted to grow to, say 9 inches or 10 inches the first year; but for general use to produce plants to flower in a small state with single heads, nothing equals

the appearance of the autumn-struck cuttings that have been produced out-of-doors, for which the above two forms of *H. hortensis* are the best adapted. The variegated forms of *H. japonica*, *H. japonica argentea variegata*, and *H. japonica anrea variegata*, are well worth cultivation for the beauty of their leaves, as well as the flowers they produce. Varieties:

H. OKAKSA.—A very fine variety with large flowers, also suitable for pot-culture, like those already described, and of easy cultivation; it is propagated from half-ripe shoots and grown in ordinary soil, either peat or loam, with one-eighth sand, to keep such thirsty subjects from getting sour and water-logged; the plants should be exposed in the after part of summer in the open air to keep them dwarf and to get the wood ripened.

H. PANICULATA.—A white-flowered beautiful species that does well under pot-culture; it is a most profuse free-blooming plant, that deserves to be generally known and much more generally grown than it is.

H. STELLATA FLORE PLENA.—Another fine Japanese variety, producing very large corymbs of double rose-coloured flowers, and is in every way a desirable plant; treatment same as for the preceding.

H. THOMAS HOGG.—A very handsome kind that has appeared recently. It is a free-flowerer, producing moderate-sized heads of white flowers.

THE SYSTEM OF PROPAGATION and general treatment advised for the other species will also answer for these, except that where the plants are required to be grown to a considerable size they must be encouraged by more pot-room. With less trouble *Hydrangeas* may be

STRUCK FROM CUTTINGS produced in spring from plants that have been flowered early; these should be taken off when they have three or four joints, and put singly in 3-inch pots filled with half sand and loam. Stood in an intermediate heat, kept close, moist, and shaded, they will root in a few weeks, when give more air, and as soon as the pots are fairly filled with roots put in others from 6 inches to 8 inches in diameter, using good loam, well enriched with rotten manure and with some sand added. When well established in these move to the open air, and give water as required through the summer; keep in a pit or frame away from the frost during the winter until required for forcing, or in the greenhouse to come on with solar heat for later blooming.

HYDRANGEAS are not much troubled with insects, except green-fly, which can be kept under by fumigating, dipping, or syringing with Tobacco-water. B.

MUSSINDAS.

"J. B. H." sends a spray of *M. frondosa*, asking why this plant always makes white leaves along with its yellow flowers, and where it is from? Now, the white leaf spoken of is an enlarged bract of the calyx, and one bract only is developed with each flower. The plant comes from Ceylon, and I have heard it stated that these white bracts make a very refreshing salad when eaten between thin bread and butter; but as I have never taken them in this fashion I cannot recommend them from my own knowledge, but I can recommend these plants as very pretty objects for flowering in the stove. They belong to the order Rubiaceae, and are very easily grown treated as ordinary stove plants, potted in about equal parts of loam, leaf-mould, and peat, the whole well mixed and made sandy. After blooming they should be kept cool and comparatively dry for a time, then out back, and when the shoots begin to swell their eyes up, preparatory to beginning to grow, they require to be shaken out of the old soil and potted into a smaller pot, so that they can be shifted at a more convenient time, and be placed in the stove in a shady position, when they will form nice little bushes, which, after a time, will make the stove quite gay with their beautiful coloured bracts and flowers. There are several species known to science, but the three kinds named here are about all that are in cultivation at the present time. They are natives principally of India and Africa, but not of frequent occurrence in the Western world.

M. FRONDOSA, the kind sent, makes a handsome, compact plant, having moderate sized, dark-green, ovate leaves, which are thin in tex-

ture, and it produces terminal racemes of rich-yellow flowers, and an occasional flower has one segment of the calyx enlarged into a leafy bract of a pure white. Sometimes two bracts are developed from the same flower, but this is not frequent, and I do not remember to have seen it upon more than about three occasions in forty years. This plant is a native of Ceylon.

M. ERYTHROPHYLLA is a beautiful plant from the West Coast of Africa, for which, I think, we are indebted to Mr. Wm. Bull, of Chelsea. It is a much stronger grower than the last named kind; but it submits to the same treatment. The leaves are ovate and bright-green, covered with silky hairs, the flowers of a pale-yellow, furnished with large bracts of a charming scarlet hue.

M. LUTEOLA.—This is a plant from the region of the Upper Nile. I have had the plant growing once or twice, but I think it is still rare in our stoves. It is somewhat more slender in its growth than *M. frondosa*. The flowers are bright-yellow, deeper coloured in the centre, and it bears pure-white calyx leaves. J. J.

Diplacis glutinosus.—This native of California is a very useful plant for the greenhouse during the summer, as it will bloom continuously for months together, and its cultural requirements are of the simplest. There are several varieties in cultivation, all of which have the free-growing, free-flowering character of the type, but in some of them at least the bracts are more brightly coloured than in the ordinary form. The most notable in this respect are to be met with under the names of *aurantiacus*, *panicus*, and *Sunbeam*, while where seedlings are raised some individuals paler than the normal form often make their appearance, and occasionally a plant with nearly white bracts may be obtained. Cuttings can be readily struck at almost any period of the year, and those propagated in this way early in the spring will make neat flowering plants during the summer, while for larger specimens older plants may be employed. The genus *Diplacis* is now included in that of *Mimulus*, but it is so generally known under the first-mentioned name that it is not likely to be superseded in ordinary use. Though spoken of as a greenhouse plant, the *Diplacis* is hardy in some especially favoured districts, while where such is not the case it will both grow and flower well planted in the open border, and so treated the flowers are a good deal richer in colour than they are when produced under glass.—H.

4084.—The culture of *Stephanotis*.—This plant is best propagated by means of cuttings formed of the stubby side-shoots, taken off with a "heel," and inserted in pots of light sandy soil, plunged in a hot-bed in the spring or early summer. When sufficiently strong the plants should be set out in a well-drained bed of light rich soil, such as a mixture of loam, peat, leaf-mould, and sand, and if for early work in special it is a great advantage if the bed can be made over or close to several rows of hot-water piping, so that it may get thoroughly warmed through by the time the plants begin to grow. Keep cool (45 degs. to 50 degs.) during the early part of the winter, or while at rest, and when the fresh growth commences maintain a regular temperature of 65 degs. to 80 degs., and syringe the plants frequently and heavily. Plenty of water and some weak liquid-manure once a week are also required by plants in full growth and bloom, and shade from hot sun must be given. Another important point is to keep the growth free from insects, particularly scale and mealy-bug, by sponging the foliage with some good insecticide as often as may be necessary. Plants can be obtained of any good trade grower, but take care to obtain the true free-flowering variety; the price for small plants would be about £5 per 100. But this number would suffice for more than an acre of glasshouses, as a single plant will fill a structure say 50 feet by 12 feet in the course of a few years.—B. C. R.

—The *Stephanotis* is easily propagated from cuttings of the young wood in a close, warm, shaded hot-bed. The culture on a large scale implies the possession of a long range of greenhouses. You will hardly require a heated plants; half-a-dozen plants will if planted out in a well-drained bed of peat, loam, and leaf-mould, soon furnish a large house. The

best way to get the plants to flower well is to train the shoots on wires from 6 inches to 9 inches from the glass. The night temperature should never fall much below 60 degs. This plant is usually grown in connection with other plants in pots, or Ferns, &c., the *Stephanotis* occupying the roof and the other plants beneath. The plant is very subject to mealy-bug, therefore it is very important to get the plants from a clean source, if possible, and watch them very closely at first. When this pest is introduced it will be an everlasting job to get rid of it again. Good plants will not cost less than 3s. 6d. each.—E. H.

I should say that to purchase *Stephanotis* plants by the hundred is rather a large order. Anyway, the fact that you think so many plants are necessary to start with shows that you have forgotten your business, if you ever knew it. When you come to realise that an area of 50 square feet is quickly covered by a vigorous plant you will understand that a much smaller number than you mention will be sufficient, unless you are going to cover a quarter of an acre of ground with glass. You had better purchase healthy young plants at about 3s. 6d. each, and having once got a stock you will not want to propagate for several years. If I was going to grow this plant in the way you suggest, I should erect a bench over the hot-water pipes along each side of a span-roof house, and place a bed of soil about 6 inches thick upon it, increasing the depth by surface dressing of about 2 inches every year; but I would not make up the bed of soil the whole length at first, only at intervals of, say, every 8 feet, and then put in the plant, increasing the length of border as the roots extend. Half turfy loam and half peat is a suitable soil for this plant. It is so well that you should know that although the *Stephanotis* will do well in a high temperature during the winter, it can be safely kept through that part of the year in a temperature of 50 degs., and plants treated in this way will produce more flowers, only not so early as those which have more heat. You, of course, are aware that keeping up a high temperature during the dark days of mid-winter means a considerable outlay for fuel. You must keep the young growth well separated, or it will not get sufficiently hard to produce flowers.—J. C. C.

4085.—Ailing *Fuchsias*.—From the description given I should say that your plants are infested with red-spider, which is generally the result of drought at the roots and a want of fresh air and moisture atmospherically. The best remedy is to thoroughly soak the roots with clean water and syringe the plants well both on the under-side of the leaves as well as on the top with clear water, adding a handful of sulphur to a 3-gallon can, adding also a knob of soft-soap of the size of a Walnut to each canful of water. Directly a change in the colour of the leaves is discernible supply the roots freely with weak liquid-manure with a view to stimulating the growth.—S. P.

—The signs are those of red-spider. Lay the plants on their sides, and syringe with soft-soap and water, 3 can of soap to the gallon of water, applied warm. Afterwards syringe with clean water, and to future, as long as the hot weather lasts, syringe daily and give enough water at the roots. A little stimulant in the water will be beneficial.—E. H.

—No doubt the plants are suffering from an attack of red-spider. Lay them on their sides on a bit of Grass, and syringe the under-sides of the leaves well with Tobacco-water, or a mixture of water, soft-soap, and paraffin will answer the purpose equally well. Syringe with clean water subsequently, and repeat the process once or twice at intervals of a few days, if necessary.—B. C. R.

4088.—*Fuchsias* for a trellis.—Several varieties are adapted for this culture, and it is a pity that the *Fuchsia* as a climbing plant is not more thought of in gardens. It seems to have fallen from its once high estate. A few *Fuchsias* draping pillar, post, or trellis with their gay flowers is a pretty picture. You want to get the stronger growing kinds, and a very charming variety for the purpose is *Rose of Castile*, which have a large corolla, purple in colour, and the habit of the plant is robust. *Marquis of Bristol* (scarlet) and *Alexandra* are also two fine kinds, the latter having petals of a crimson colour, the corolla white. Worthy of mention are the well-named *gracilis*, sometimes called *frutescens*, which is exceptionally free, very slender flowers, produced with great freedom, and crimson in colour. *Monarch* is conspicuous for its very large flowers, the colour bright red, and Gen. Roberts, the segments crimson, and

corolla violet, is another good variety. These are all of note, and though they are old varieties, they are none the worse for that. I have looked through several catalogues, and notice that they are included, so that you will have no difficulty in getting them.—C. T.

— The best Fuchsia for your purpose is the Earl of Beaconsfield. Either planted out in a border or in a large box, this will speedily run up and cover your trellis with lovely blooms.—A. G. BUTLER.

COTTAGE GARDENS.

This pretty picture of a cottage garden is one of an old-fashioned kind, and such as may be found in some parts of the country. Such a place as this, though the variety of flowers is not great, is far more pleasing than many more pretentious gardens, and there is a charm in the irregular crowded border near the house and the climber-clad walls which may be sought in vain in the prim parterre. These cottage gardens, with their wealth of bloom and foliage, form one of the chief attractions of a country walk, and no good gardener is ever above taking useful hints from them.

TREES AND SHRUBS.

4049.—Hardy Azaleas.— I am pleased to answer a query about hardy Azaleas, for they are shrubs much neglected in English gardens, although of great beauty. This query affords opportunity to make reference to this beautiful class of shrub, which fills the garden with colour in the late days of May or early June, and in the autumn the leafage puts on brilliant shades of crimson and bronze. The hardy Azaleas are amongst the most beautiful things that can be used for the garden, where there is sufficient space for them; but they are more suitable for the woodland, or to form bold groups on the outskirts of the lawn. As full information is asked for concerning this class, I may mention, firstly, that they are not difficult to grow with success. For many years Anthony Waterer, the well-known nurseryman at Knapp-hill, Woking, has been raising varieties which improve annually until a race called the "Knapp-hill" has been raised up, which represents the hardy Azalea in its finest phase. These shrubs offer great variety of colour in the flowers, which vary from pure white through brilliant shades of carmine, scarlet, orange-scarlet, and yellow, in many tones melting one into the other. Yet, strange to say, they are not used freely in English gardens, although hardy, and so sweetly scented that a group in full bloom sends a sweet odour into the garden—a pleasant, spicy scent peculiarly agreeable. The first beginnings of the race, so to say, were made when the North American species, such as *A. calendulacea*, *A. nudiflorum*, and *A. pontica* were intercrossed, and the foundation laid for the beautiful kinds one sees at present in gardens. So free-blooming are they that even very small plants are smothered with flowers, the little bushes a mass of bloom, and their beauty increases with age. The whole aspect of the shrub is pleasing, with its tier-like arrangement of the branches and remarkable freedom. In the more recent acquisitions one gets flowers of great breadth, the upper petals broad, thrown well back, to show up the resplendent colouring, a very marked difference to the old type, which had small flowers, cramped, and without the breadth of those of later years. Very few varieties are

named, and it is wise policy, as the race in general is distinguished by superb kinds, but a few have distinctive titles, such as Nancy Waterer, a broad, rich golden flower; and Mrs. Anthony Waterer, a very lovely variety, the flowers produced in an even compact truss, and individually pure white, except a suffusion of soft yellow on the upper segments, and very fragrant. This represents a superb type of hardy Azalea, and justifies a name. To show how slow is this raising of new kinds I may mention that quite four years elapse before the seedlings bloom; then they have to undergo careful selection, many, of course, failing to come up to the requisite standard of excellence.

masses of them in early summer, and then we get the fine colours of the leaves in autumn. As regards culture, much the same conditions that agree with the Rhododendron are also favourable for the Azalea. If you have a wild, woodland spot that requires lighting up with colour, you cannot do better than plant in groups, and they need shelter from the winds, which surrounding things will provide. There is also less risk of injury from frosts, whilst another desirable thing is shade, not dense, but a little protection from the fierce and continual glare of summer sun. The best soil, as for the Rhododendron, is peat, but good fibry loam will suffice, or loam and leaf mould mixed. There is no doubt that in the near future the Azalea will take the place, to some extent, of the Rhododendron, although I have nothing to say against this noble shrub. But it is overdone in gardens, and when this is the case, no matter how beautiful the subject is, it loses in interest, producing a monotonous effect.—C. T.

4087.—Striking cuttings of shrubs.— Cuttings of *Deutzias* may be struck in two distinct ways: (1), by inserting the young shoots, about 3 inches long, with a "heel," in well-drained pots of sandy soil in the spring, keeping them close, warm, moist, and shaded until rooted; and (2) by employing pieces of the mature wood of the current season in the autumn, placing them rather thickly in any sandy soil in a cool greenhouse or frame. Cuttings of *Escallonia* and other choice evergreen shrubs should be inserted in sandy soil in the autumn, placing them under hand-lights or a frame; if they can have a gentle bottom-heat in the spring, after the cuttings have "callused," so much the better. Cuttings of *Weigela*, *Syringa* (*Philadelphus*), the *Snowdrop-tree* (*Halesia tetrapetala*), *Veronica*, *Hydrangea*, *Spirea*, and many others may be rooted in the same way.—B. C. R.

— *Escallonia* and *Deutzia* will strike now or till the end of October under a hand-light, kept close except for about an hour in the morning, when a little air should be given. The soil should be kept moist by giving a sprinkling as often as is necessary. All evergreens will strike during the next three months under the conditions named; but, for the most part, deciduous shrubs had better be left till the leaves fall. A few good evergreen shrubs of which cuttings may be taken are the following: *Kuonimbia* in variety, *Aucuba* in variety, various kinds of *Laurels*, *Bux*, *Livca*, and most of the *Conifers* may be rooted from cuttings, though any plants which produce seeds freely had better be raised from seeds. The various forms of *Evergreen Berberry*, for instance, produce



OUR READERS' ILLUSTRATIONS: Cottage at Beshington, Surrey. Engraved for GARDENING ILLUSTRATED from a photograph sent by Mr. W. Thompson.

These are eliminated. Yellow is a prevailing, but there are now many beautiful scarlets that seem to glow like a tongue of flame when amongst shrubs. Then you may get some double kinds, which represent a departure that is rapidly being improved upon. Here, again, one sees various colours, and the flowers of charming shape, each like a little rosette, and precious for cutting, not only for their colour and long-lasting qualities, but also for the sweet odour. The pink-coloured kinds are very pretty in a vase loosely arranged. The later-blooming hybrids are being added to each year, and we shall, I think, get a race that will carry on Azalea time until quite the summer. There is beauty in these shrubs throughout the year, the growing spreading and picturesque, the flowers abundant,

and may be raised in that way, though the common varieties of *Berberis* may generally be increased by division of the underground stems, where only a few plants are wanted. The propagation of trees and shrubs is rather a large business. Though most of them may be rooted from cuttings, there are certain kinds that will root with more certainty, and in less time, if the shoots near the ground are layered; for instance, *Rhododendron*, *Kalmia*, *Wisteria*, *Magnolia*, *Daphne*, *Laurustinus*, and *Cydonia* are best layered. On the other hand, *Jasminum*, *Forsetia*, *Ribes*, *Philadelphus*, *Spirea*, and *Weigela* will strike freely from cuttings of well-repined wood planted firmly underground, provided that careful attention is given in the matters of watering and shading.—E. H.

ROSES.

NOTES ON TOWN ROSES.

IN GARDENING, June 10th, 1893, page 201, a note appeared on town Roses, but to what was there said a few more notes may be added. A friend who grows Roses well within the influence of London smoke has given me the following information as well about them. Many of the dwellers in crowded towns try to grow Roses, wishing to bring fragrance and beauty into their crowded gardens. The culture of the Rose under such circumstances is beset with difficulties, and in the midst of smoky cities the task is not encouraging. One has only to see the squalid misery depicted on the plants in the public parks, where every care is taken to give them the best attention, but it is pure air that they require, a thing that unfortunately cannot be artificially supplied. Sunshine and air, these are the two essentials, and with an abundance of each the growth gets well ripened, a point of great importance. Sappy, badly ripened shoots will never bear good flowers, and they suffer severely from winter frosts. Draughts that torture the plants in small gardens, withering them up, and driving out fresh, buxom health, are fatal to the Rose, and if the ground is filled with tree-roots success can never be expected. Soil, if poor, or flavoured with the leakings from gas-pipes, will not suit the plants, and when bad must be made good by getting in new material. If moderately good, it will only be necessary to incorporate with it a liberal dressing of cow-manure. In the case of new gardens trench up the soil thoroughly at first, dress liberally with cow-manure, and expose the beds to the air for a time, so that rains and frosts may act upon the material and sweeten it. Planting can only be done in one way, but prune less evenly than for country-grown plants. Many of the fine old pillar Roses that are so beautiful in large English country domains are very useful for planting near towns, and their robust growth adapts them well to resist the troubles of town life. One secret of success is to always choose plants of vigorous growth, and a few varieties of the Hybrid Perpetual class especially suitable are: Abel Grande, Alfred Colomb, Baronesse Rothschild, Charles Lohve, Duke of Edinburgh, Beauty of Waltham, Dr. Andry, Camille Bernardin, Mrs. John Laing, the beautiful General Jacqueminot, or "Jack," as it is called in the market, Senatour Vaisso, Louis Van Houtte, Magna Charta, John Hopper, Duo de Rohan, Crimson Bedder, Reine Marie Henriette. This is an interesting selection, and amongst climbers very beautiful are the old Gloire de Dijon and Mme. Bérard, both of which may be expected to thrive, whilst those who care for a larger list may have the old Lamarque, Aimée Vibert, Fielded Perpetuals, Compe d'Hébe, and Rampart. It would not be advisable to indulge in many Tea-scented varieties, except Grace Darling, Mme. Lambert, Catherine Mermet, and Marie Van Houtte, which I have seen very beautiful near large cities. V. C.

Gloire de Dijon Rose—I always look through the pages of GARDENING ILLUSTRATED, partly because I find its instructions simple and accurate (as a rule), and chiefly because I rejoice to know that a multitude of working men are reading it simultaneously sitting restfully at their cottage doors, smoking in their gardens, and then, it may be, gardening in their smoke. But there is no rule without its exception, and I am perturbed to read, at page 229 of this week's publication: "I do not think the Gloire de Dijon Rose worthy of so much space under glass. There are so many better ones." I have grown Roses, enthusiastically and extensively, under glass and in the open ground, for half a century, and I am confident that for abundance of beautiful blooms, early (very early) in spring, and late (very late) in autumn, there is no Rose so reliable as Gloire de Dijon. It filled a good-sized greenhouse at Taunton, and, like its sister on the south wall of the church, produced hundreds of its lovely flowers. I am, therefore, at a loss to know how the space could have been more worthily occupied, and what are the names of the many better sorts referred to by "J. C. C."—S. REYNOLDS HOLE.

4093.—**Early Roses**.—Does the first part of your question refer to Roses that are to be

grown under glass? It appears so from the latter part of your inquiry. If that is so you will find Tea Roses the most suitable, and very good ones for your purpose are Luciole, Anna Olivier, Perle de Lyon, Innocente Pirola, Marie Van Houtte, Grace Darling, The Bride, Catherine Mermet, Comtesse de Nadaillou, and Mme. Lambert. The plants, if large ones, should be pruned into shape now, and given larger pots if they want them, and have all the flower-buds picked off until the end of September. If they are placed in an increasing temperature about the beginning of the new year they will flower in from eight to ten weeks. The same varieties would do for planting in the open air if your garden is not too much exposed for this class of Roses. I would, however, rather depend upon the Hybrid Perpetuals. For your purpose the following are suitable; Alfred Colomb, Crown Prince, Doctor Andry, Dupuy Jamin, Jules Margottin, Gloire Lyonnaise, Louise Darzins, Mme. Gabriel Luizet, Mrs. J. Laing, Miss Hassard, and Duke of Teck.—J. C. C.

4096.—**Roses not thriving**.—That some of the hardy Tea Roses should do better with you than the Hybrid Perpetuals will be read with some amount of credulity by some people. The reason, however, is explained in the information you send when describing the soil. The H.P.'s do not like a dry and poor root-run, especially when they are growing on foster roots, but it will suit the Teas better. I advise you to try a few more of the latter; the varieties may include Marie Van Houtte, Anna Olivier, Mms. Lambert, Perle de Lyon, Saffron, The Bride, Grace Darling, and Viscountess Folkestone, and I believe some of the strongest growing H.P.'s will thrive on their own roots in such a soil. I would select such varieties as Alfred Colomb, Magna Charta, Ulrich Brunner, Mme. Naohury, Captain Christy, Charles Lohve, Earl Dufferin, Mrs. J. Laing, Mme. Gabriel Luizet, John Hopper, and Fraçois Micheloe. Unfortunately, these are not all suitable as button-hole Roses. Some of the Moss Roses are very hardy, and would thrive with you as dwarf plants. The common pink variety and the White Provence are very suitable for your purpose, and so are the China Roses. The old Pink Monthly is not to be despised when more tender ones fail; then there is Cranolie-Supérieure (rich-crimson), Fabvier (scarlet), and Prince Charles (cherry-red). Quon of Bedders and Bourbon Queen amongst the Barbons are both reliable Roses. Some useful early-flowering yellows, double and single, will be found in the Austrian Briers, so that you will see there is no reason whatever why you should be without Roses, and you will notice that I have not burdened you with a long list of varieties.—J. C. C.

—On such soil as yours the only way to succeed is to trench the ground deeply—3 feet, if possible—to manure it heavily, and give plenty of water, and a thick mulch of manure over the beds in hot, dry weather. I do not know of any varieties especially suitable for such a dry position, but should choose the more vigorous growers. Gen. Jacqueminot ought to do well; also Victor Verdier, La Fraee, Baroness Rothschild, &c., and the more robust Tea-scented kinds. Plants on the Manetti stock will be most likely to thrive.—B. C. R.

The Cardinal flower.—A very beautiful class of Lobelias is that known as the Cardinal flower, of which *L. fulgens* is an excellent type. *L. fulgens*, Queen Victoria, and Firefly are remarkably effective, the foliage almost chocolate in colour, and the flowers intense crimson, a decided contrast. Moisture is their chief requirement. The plants will live almost in water, and if there is a boggy bit of ground, or a streamside where the Marsh Marigolds exalt their golden flowers, the Cardinal Lobelias also will lift up their strong, erect spikes. In the southern districts of England they may be left out through the winter, but if there is any doubt concerning their hardiness in the particular position lift them and plant in a common cold frame, protecting with mats in the event of exceptionally severe weather. A bed or clump of the Cardinal flower with the surface covered with White Tufted Pansies is a charming picture. The surface of the bed may also be enriched with other things, and Mignonette is useful for the purpose. This type of Lobelia

blooms later in the year than many bedders, and if the garden is of large size a good group of it is intensely rich, the flowers rich-crimson, splendidly set off by the deeply-coloured leafage.—C. T.

FERNS.

SELECT ADIANTUMS.

MAIDEN-HAIR FERNS are always admired, and it is no wonder that they are favourites, for all are exceedingly beautiful, and all are useful in a hot estate, although some may be used with more advantage than others. *A. cucumatum* is frequently called "the Maiden-hair Fern," although we have upwards of 100 described kinds, and more than one-half that number in cultivation, yet Kew is one of the only places where a collection of kinds can be seen together. In these days of Fern revival I am under the impression that it is a want of knowledge of the kinds to enquire for that is one of the chief stumbling-blocks to their more extensive cultivation, and I therefore introduce to my readers a few of the more choice kinds, and amongst these the subject of the illustration on page 279.

A. FARLEYENSE, must ever stand prominent. The history of this plant is somewhat obscure, but I think it was in the year 1843 that the plant was shown at the International Exhibition, the only international show, by the way, ever held in England by the Horticultural Society, whilst in Belgium a fine exhibition is held every five years, and the society is flourishing. This beautiful Adiantum was first shown by the Messrs. Veitch, of Chelsea. It was introduced from Barbadoes. Curiously enough, I believe the plant has always been barren, or, at least, I have never seen a fertile state of the plant, and I have had many thousands through my hands, and have seen the plant in many hundreds of gardens; this fact has led to the supposition of its being a hybrid form of *A. teesdallii*, but be it sport or hybrid, it is the most beautiful Maiden-hair which has yet been found. A description of the plant is quite unnecessary with such an illustration. Suffice it to say that it is a plant which revels in strong heat and bright light, and a fair amount of sunshine. Indeed, it requires a much greater amount of the latter than the majority of Ferns, as if heavily shaded it comes weak. Another peculiarity is that it should not be allowed to get larger than the plant shown in the illustration, as the fronds are apt to decrease in size, and I may say that I have always seen the largest and most beautiful fronds upon small plants. The plants thrive best when the soil consists of fully half light turfy loam. *A. cucumatum* is one of the most beautiful of basket Ferns; the fronds are somewhat erect, but beautifully curved, and I have only seen this plant non-productive at the points when it has been grown in too dry an atmosphere to allow the young buds to develop. I have had a specimen of this species with nearly a hundred fronds upon the one plant, and these were each upwards of 18 inches long, and easily all viviparous at the apex. It requires stove warmth. *A. cucumense* is another very pretty plant, which is a native of marly banks and dry places by the seaside on the Island of Jamaica. It is frequently found as a simply pinnate plant, and again with but a pair of short side branches at the base, but I also have it with two pairs of branches at the base. The fronds vary from 9 inches to 18 inches high, with jet black stems and rich deep-green pinnae. *A. cristatum* is another magnificent plant, but yet it is one that is seldom seen in good condition. The fronds on a well-grown specimen are each from 2 feet to 3 feet long. It appears to be somewhat plentiful in Jamaica. *A. curvatum*: No more beautiful Fern exists than this species when well grown, but a well-developed specimen is rarely seen. The fronds are each some 18 inches or 2 feet high, and a foot or more broad. It enjoys shade and likes to be kept somewhat dry.

A. BOLABRYFORME is another basket kind, which grows freely in a warm moist stove; in growth it much resembles *A. lunulatum*, but the pinnae are much larger, and its fronds are permanent and do not die down in the winter months. They are also viviparous at the points, and form a pretty mass of young plants. *A. Edgeworthii* is a plant which botanically is said to be the same as *A. caudatum*, but is, however, sufficiently distinct as a

garden plant to require a separate name; it has the habit of *candatum*, and is very prolific in forming young plants at the points of the fronds; the pinnae, however, are somewhat different in shape, less villous, and consequently deeper and brighter green in colour. *A. digitatum* is a very pretty plant, belonging to the scandent group. It has fronds each from 3 inches to 4 inches or more high, and about three times divided, the stems being black and shining. *A. Feei* is another climbing variety, better known perhaps by the name of *A. flexuosum*, which was given it by Sir William Hooker on account of the zigzag rachis; its fronds are each several feet in length. The pinnae when barren are deeply toothed, but when fertile they are deeply reflexed all round. *A. fragile*: In this we have a dwarf and pretty tufted species, somewhat resembling a small form of *A. venustum*, and of just such a glaucous hue. It has, however, a peculiar character, in that the pinnae are jointed to the top of stipes, so that in the event of the plant becoming dry the whole of the pinnae fall away, leaving nothing but bare stems. It is found in Jamaica, growing on chalky rock. *A. Henslowianum* is a beautiful

fen-shaped, and bright-green. *A. Williamsi* (the golden Maiden-hair) should not be absent from any collection; its fronds are tall and the pinnae small. The basal part of the stem is clothed with a golden farina, and a little of this is also dusted over the underside of the pinnae, whilst the length of the fronds, coupled with their hardy character, renders them very suitable for using in table glasses with cut flowers. Other choice kinds of noble growth are *A. peruvianum*, *velutinum*, and *subcordatum*, whilst such kinds as *A. polyphyllum*, *trapeziforme*, *tetraphyllum*, *pulverulentum*, &c., although more frequently seen, are yet not nearly so largely grown as they deserve to be, and even the many small-growing kinds, such as *A. tinetum*, *bellum*, *Pacotti*, *Veitobi*, and a host of others could be easily grown in private gardens in place of having so many plants of the old and very beautiful *A. cuneatum*. O.

4016.—**Show Ferns.**—Presuming exotic varieties are meant, the following are not only choice, but quickly form handsome specimens if well attended to: *Adiantum Farleyense*, *Gleichenia pinnosa*, *Microlepia bieta cristata*, *Nephrolepis Davalloides furcata*, *Davallia Mooreana*, and *Cyathea dealbata*.—S. P.

quite herdy in the open—at least, in all the more southern counties of England—comprising *F. coccinea*, *F. Riccartoni*, *F. globosa*, *F. gracilis*, and others, chief among these being *F. Riccartoni*. It produces a wealth of crimson pendent flowers. If *Fuchsias* are left out in the open during the winter it is always wise to cover the crowns with coal-ashes.—V. C.

THE KITCHEN GARDEN.

NOTES ON CUCUMBER CULTURE.

It is not my intention to enter fully into the details of the cultivation of Cucumbers, but rather to make a few remarks in connection therewith, as I find there are differences of opinion upon various points. Amongst these the question of ventilation *versus* non-ventilation may require some explanation, as I find that people, especially those who are young growers, are apt to rush to extremes. To guard against extremes, and as a safe practice, it has been advised not to ventilate at all, but to allow the temperature to rise as high as it likes from sun-heat, this being counteracted by the temperature being continually kept at saturation point through abundance of moisture in the atmosphere and also over the foliage. During the heat of the summer the rays of the sun are slightly broken by a light shade, such, for instance, as a little flour and water syringed over the roof. I do not dispute that plenty of Cucumbers have not been produced under this non-ventilation system, but I prefer to take the testimony of one of the largest market growers in the county that the system is not worthy of imitation, as abundance of Cucumbers may be produced under the ventilation system when used judiciously. For private use I am certain that ventilation, when applied judiciously, is the best system to pursue, so as to keep up a steady supply of fruit. We do not want Cucumbers by the score, and then a falling off to almost *nil*, but sufficient to meet the daily wants.

VENTILATION is often sadly misused during the winter or even early spring months. The time honoured chink of air I am no believer in, merely for the sake of putting it on for a change of air, whether the external conditions are suitable or not. In my opinion the best plan to pursue is to put on ventilation whenever conditions are favourable. Any

person when acquainted with the structure can tell directly he enters whether ventilation is needed or not. During mild weather from spring onwards during the summer months I like to put on a little ventilation at the apex of the roof at 6 a.m. At this time there is not such a vast difference between the inside and outside temperature, and air put on at this time keeps the temperature from reaching unduly high. It is certainly very misguided practice to allow the temperature to rise considerably before putting on air, but this is often done. Whatever ventilation is now put on will not counteract the evil; consequently the foliage very quickly has a parched appearance. With the ventilation early applied such an unsatisfactory state of things would be avoided. In some structures not so fully exposed as others such ill effects may not be noted, but in those facing due south they certainly happen. Next to ventilation, I think the

STOPPING and thinning out of the shoots are the most abused. During the most reasonable weather growth takes place very rapidly, and if thinning is not taken in hand, the crowded growths are almost impenetrable, mildew under such circumstances being asserting itself. It is



Adiantum Farleyense. [See page 278.]

erect-growing plant, with fronds some 18 inches or 2 feet high. *A. macrophyllum* is a beautiful plant with large pinnae, arranged in pairs on a jet-black stem, the barren pinnae being about 3 inches long and 2 inches broad; when young of a rich bright-pink, changing with age to deep green, the fertile ones narrower. We have now a form of this plant called *bipinnatum*, having a pair of side branches at the base; this adds materially to the effect. I recently received from the Messrs. Rogers, nurserymen, of Lodsworth, Sussex, a beautiful form with streaks of white variegation, for which I cannot suggest a better name than *albo-striatum*; it will become a marked beauty in a collection, and it is not likely to run out of character, as the Messrs. Rogers tell me they have had the plant eleven years, and it has always maintained its character, having raised it from a spore. *A. monochlamys* is a small-growing Japanese form, which grows on the hill-sides in the Straits of Korea. It is easily distinguished by the large and bold single sori set in a deep sinus on the top of the pinnae. *A. palatum* is another fine species, with very long fronds, which are about twice divided, the pinnae being large,

A note on Fuchsias—I am pleased to see that the *Fuchsia* is becoming more largely grown for beds, and those who have hitherto failed with it out-of-doors should remember that the great point is to get the growth well hardened, then a display of bloom will appear early in the summer, lasting until quite the end of the season. It is so easy to propagate the *Fuchsia* by cuttings, that the merest novice may succeed. Strike them in the spring, first placing a few old plants in gentle warmth, and take the little stubby side shoots, which form roots quickly if placed in a light soil in 5 inch pots, stand them on a mild hot-bed, and when struck pot on into larger pots, using much the same kind of soil. When of sufficient size, say in 48 inch pots, they may be planted out, either in beds or baskets. The finest results are always got from old specimens that have ceased to become of much value in the plant house. Always get the growth well hardened, not forcing it in any way, as the more shoots formed purely in the open air the better the display of flowers. Strong shoots selected from these are, here in the autumn will make excellent plants, taking care to keep the soil moderately dry during the winter. There are a few kinds

the same with Cucumbers as other fruit-bearing subjects—direct light is needed to form a solidified and fruitful growth. Often certainly Cucumbers form freely, but instead of coming to maturity they all damp off. The stopping of the shoots must have early and frequent attention when once the framework of the plant is laid. With some people at this stage it is the practice to stop at the second leaf, or what is termed a joint beyond the fruit. I hold that such a course of procedure fills up the space with a lot of useless growth, and that it is far better to stop the shoots at every leaf throughout the spring and summer months. It is also a good practice to remove the larger leaves by degrees, laying in younger growths to fill up the space, as by this means the plants are kept more under control and are not so likely to quickly become exhausted. One of the main causes of exhaustion is overcropping. For private use, where only a steady supply is needed, it is a mistake to allow all the fruits which form to remain. The wisest course will be to cut off all except what are needed for the crop, leaving them in various stages, as by working on this system the plants keep longer in bearing. The market grower, again, directly it is seen that the supply is failing, clears out the plants and makes a fresh start. In a private garden this mode of procedure is not very convenient. Coming to what I may term

"FEEDING" the plants, this is the shent anchor, as it were. Unless this is rigidly adhered to, the plants cannot be expected to carry presentable fruit or to remain in health very long, for most surely insects innumerable will attack them, besides mildew, and the fruits will turn yellow at the ends instead of swelling away freely. I have often heard growers complaining of the fruit turning yellow, and most surely the source has been traced to either dryness or want of fertility in the soil. Often overdryness may be attributed to the action of bottom-heat pipes through the soil being placed in almost close contact, excepting, perhaps, a few bricks ends between. My practice is to place a layer of well-worked fermenting material, to the depth of about a foot after it has been heated firmly, over the bricks and before placing on the soil. This counteracts the dryness which is likely to accrue were such material not present, while it also forms a very congenial bottom for the roots. Whenever water is applied, sufficient should be given to soak the whole mass, mere surface dribbles being of no use whatever. Neither should other than tepid water be given, as obviously the roots would be in danger of being chilled if cold water was used. One of the main points in the cultivation of Cucumbers is to encourage surface feeders, and this is best done by giving an occasional surface-dressing of rich compost. This, if kept moist, will encourage surface roots. For what I may term regular feeding, I am very partial to manure-water made from fresh cow-manure and cast. This must be applied in a diluted and clear state. This latter is a particular point to take note of, for if applied too freely the rooting medium would become soured and the plants would very quickly have a sickly look. When the structure is closed in the evening of fine days, it will also be an advantage to damp the floor with liquid, this proving of marked benefit by charging the atmosphere with ammonia.

4090.—**Unhealthy Cucumbers.**—They have been planted, I should say, in something they do not like in the first place, and this has been aggravated since by improper treatment; but it is impossible to say when that improper treatment is, because no information is given. They may have had too much or too little water, or too much shade, or the pinching and stopping left in arrears—and if the growth gets too crowded the foliage soon goes wrong. Mildew may have been in the frame, and this may account for the dark spots on the middle of the leaves. The best treatment now will be to thin out well. Top-dress with rich compost; at the same time ascertain the condition of the roots as regards moisture. Shade on bright days from 10 a.m. till 3 p.m., then sprinkle and close. Open the frame just a little in the morning by seven o'clock, increasing the ventilation according to the temperature. —E. H.

AUTUMN GIANT CAULIFLOWER.

WHAT AN important market vegetable this fine Cauliflower has become is well shown in various parts of Kent, where large breadths of it are planted. Large quantities of it are grown for pickling. To have specially good white heads it is a good plan to tie up the leaves, as in the case of Lettuce, so soon as the flower-heads begin to show.

4091.—**Tomatoes dropping their buds.**—The Tomatoes you name are all good setters, so there must be something wrong in the management; either they do not get ventilation enough, or they need more support. In this dry, scorching weather, Tomatoes want a good deal of water. It would be well to mulch with short manure, and give a thorough soaking of water, not a mere sprinkle, and give more ventilation; leave a little air on all night.—E. H.

— This must be put down to the intense heat and drought; this is plainly proved by the beneficial effects of syringing, and possibly if you were to syringe the plants still more heavily they would do better still. I find much the same thing myself; when we get two or three comparatively cool days the fruit sets right



Cauliflower "Autumn Giant."

enough, but during the bursts of tropical heat that have occurred lately numbers of the blossoms drop, in spite of every care. When the drainage is good you may keep on watering Tomatoes under glass nearly all day long in such weather as this—in fact, the difficulty is to give them enough. See that the border is moist right through to the bottom. Those mentioned are three of the best setters in cultivation, and you may be sure that if they fail no others are likely to do any better.—B. C. R.

— When the flowers of Tomatoes fail to set their fruit in such a favourable season as the present one, it is very plain that the management is at fault. In this case I believe it is caused for the want of root moisture, which is further aggravated by the soil being too loose. When potting or planting out Tomatoes the soil should be fairly dry and well rammed or trod. I have a capital set of fruit, both indoors and out, and never had it finer. The plants in pots and boxes have been watered twice a day all through the past hot weather, and the plants trained to a wall in the open and others in the open border have been regularly watered every day for the past two months. During that time my houses have had a little air left on all night, all the ventilators being opened at 6.30 a.m. and not closed again until 8 p.m. I have no faith in syringing Tomatoes; as a matter of fact, if a flower is dissected it will be seen that it is impossible for the water to reach the pollen, therefore it cannot assist in its distribution. Well water the soil when the surface is dry, and give more water.—J. C. C.

BRUSSELS SPROUTS.

In an article under the above heading (page 152), "A." remarks: "Why people will persist in setting out their Brussels Sprouts between rows of Potatoes I cannot imagine." May I inform the writer why I do the same thing and have done so many years? It is because I believe that in getting two crops in a year instead of one from a piece of land I am augmenting the sum of the produce from the same piece of land, although the quality of the produce might not be so fine as where only one crop is grown in the same time. I have at the present time a quantity of Brussels Sprouts growing between rows of Potatoes that are looking exceedingly well. The rows of Potatoes (the White Hebron) are each 4 feet apart. I have a thick mulching around the Brussels Sprouts, and they have been watered two or three times. I have some planted between rows of Potatoes 3 feet apart, and also some between rows 2 feet apart. I regulate the distance between the rows of Potatoes according to the strength of the haulm produced by the variety. In the instance where the rows are 2 feet apart the haulm is only about a foot high. In each case I am expecting to obtain a good crop of Sprouts of fair average quality.

L. G. K.

BLANCHING CELERY WITHOUT SOIL.

To the inexperienced this may seem a strange suggestion, and so it is on the face of it; but it is a fact, nevertheless, that perhaps the best blanched Celery is produced by the aid of brown paper. Exhibitors of this vegetable now-a-days employ the old-fashioned method of blanching their sticks of Celery with the aid of soil. Certainly, no Celery could be shown in finer condition as to its blanched character than that staged by such men as Messrs. Pope and Lye, for instance. Instead of digging out such deep trenches as is generally the plan in the case of blanching with soil, sufficient only is required to enable water to be freely given to the plants to encourage a free growth. Beyond this deep trenches are a waste of time. If the plants are put out in trenches 6 inches deep that is sufficient. Another advantage gained by blanching with paper is that the plants can be fed with liquid stimulants so much longer than is the case when soil is used, because while blanching is actually going on the sticks of Celery stand clear of the trench, and in no way interfere with the application of water to the roots. Three weeks are sufficient to blanch Celery in by the aid of brown paper. The leaves ought to be loosely tied around with a piece of bast to prevent the outer ones falling down and becoming bruised. Pieces of ordinary brown paper in size according to the length and thickness of the sticks should be fastened around them sufficiently tight to prevent the light entering and thus nullify the artificial aid employed. The paper should extend quite up to the top of the sticks or joining to the leaves. Two thicknesses of paper may in some cases be needed. S. P.

Weeping trees—Graceful in outline, elegant in growth, impressive and attractive in appearance, weeping trees possess all those characteristics which render them especially valuable for the embellishment of landscape, park, and lawn. This peculiarity of form among weeping trees is a precious one, inasmuch as the contrast between the rigid upper portion of the tree and the pendulous and outar and lower parts forms a very striking and attractive feature, quite distinct from the aspects usually presented by other trees. But for all this they require to be employed discreetly, or the good effect which they are capable of producing is destroyed. They should be planted sparingly and not near one another, and carefully selected and suitable sites must be chosen for them, or half their charms will be lost; when met at every turn or too often repeated their interest and attraction are greatly diminished. They should never form large groups or masses, nor be mixed up with other trees in belts or borders. In the hands of a skilful planter they are capable of producing the most charming results, and are more effective in giving character and expression to a landscape than any other trees.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in Gardening free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper, and addressed to the Editor of GARDENING, 57, Southampton Street, Covent Garden, London. Letters on business should be sent to the Publishers. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that general answers to the same questions may often be very useful, and those who reply would do well to mention the locality in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appeared.

4102.—Preserving Roseflower-leaves.—Will someone kindly tell me how to preserve Rose-leaves?—PHILIP SMITH.

4103.—Layering Carnations.—Will anyone kindly inform me how to layer Carnations, and the best time to do so?—A NOVICE.

4104.—Clipping a Bay hedge, &c.—What time of the year is the best to clip a Bay hedge? Also when to clip Box hedges?—PERRINS.

4105.—Treatment of Hakea.—Will anyone kindly inform me as to the soil required for Hakea, a native, I believe, of New Zealand?—K.

4106.—Fertus for show.—I should be much obliged if someone will kindly tell me the names of the best six new Fertus?—CONSTANT READER.

4107.—Removing ties and grafting wax.—How long are the ties and the bands to remain on the trees after the grafts begin to grow?—GRANOR.

4108.—Herbs for winter.—Will someone kindly tell me how to preserve herbs for winter use; also the best time to gather them for that purpose?—R. R. L.

4109.—Potting Cacti.—Would some kind reader tell me the best time to pot Cacti, and if they would do better outdoors now than in, as I have them in my greenhouse?—J. P. C.

4110.—Fancy cuttings, &c.—When will be the proper time for striking cuttings from Panicle, also the time for taking up Tulips to plant in a fresh place for next year?—STONOR.

4111.—Pruning flowering shrubs.—Should a Myrtle and large white Jasmains be pruned when flowering is over, as is recommended for spring flowering shrubs?—BENCOMBER.

4112.—Bignonia cupreolata.—Does this plant require much root-room? I have had one in a pot for two years, and though it grows rapidly it shows no signs of flowering.—K.

4113.—Alto-carbon light and plants.—Have any of your readers found the use of the Alto-carbon light especially beneficial to plants in a room, i.e., more so than ordinary gas?—F. P.

4114.—Destroying cockroaches.—I shall be glad if you or some of your numerous readers will inform me of the best plan to adopt to destroy and exterminate cockroaches?—CONSTANT READER.

4115.—Spiraea japonica roots.—Is it best to divide Spiraea roots when they have done flowering, and are turned out into a border, or when they are taken up in the autumn for re-planting?—ELV.

4116.—New Zealand Flax.—Can anyone inform me if New Zealand Flax flowers in this country, either in greenhouses or out-of-doors, and what treatment is required to bring it into flower?—K.

4117.—Grapes dropping off.—Is there anything to be done to prevent Grapes dropping off a Vine, caused by the stalks breaking across about a quarter of an inch from the berry?—J. D. NEWCOMB.

4118.—Gas and plants.—Is the escape of unburnt gas in a greenhouse deleterious? Can the use of gas as an agent for heating water pipes affect plants injuriously or be taken to avoid excess?—F. P.

4119.—Destroying Chokeweed.—Will someone kindly tell me how to rid my garden of Chokeweed? Do what I can, I can't get rid of it. It comes up year after year, and chokes everything else.—A. H. N.

4120.—Flavour of Melons.—I should be glad to know why this and last year my green-fleshed Melons, of various kinds, have had a strong taste of turpentine. Is this natural to any kinds?—T. C. P.

4121.—English and foreign Tomatoes.—Will someone kindly say if foreign Tomatoes (supposing they are tested where grown) are considered superior in flavour, quality, &c., to those grown and tested in England?—G. P.

4122.—Bog-soil.—What is the nature of bog-soil? The one I am referring to is very light and black in colour. Would it be suitable for such crops as Potatoes? If not, what other vegetable crop would thrive on such land?—NOVICA.

4123.—A house border.—We are going to make a border, some 2 ft. wide, round our house, close under the windows, in which to plant creepers (scother aspect), and should be glad to know what are the latest growing, both for foliage and bloom? We want the border itself to be gay throughout the year, from spring to autumn. What would be a pretty, easily-grown selection of plants for it?—MRS. A. H. TRENDALE.

4124.—Dandelions on a lawn.—Can anyone tell me how to eradicate Dandelions from a lawn? It is impossible to get the long root up without spoiling the Grass, and the least piece left in soon sprouts again.—DARROW.

4125.—Prunus Pissardi.—I have three barries—very like Cherries but more oval—upon a Prunus Pissardi, which I bought some time ago as a foliage tree. Are such unusual in this country? And I presume they will be good to eat?—G. BAATSON.

4126.—Hard water.—Is this very objectionable for gardening purposes? If it is, how can it best be softened? Would ten drops of nitric acid to a quart do it good? This would burn the carbonate, or some of it, into a nitrate of lime.—Q.

4127.—Vines in pots.—Would anyone give me the reasons why my plants do not fruit, while they receive every necessary attention? Does the sprawling of the root about them in that way? They are seven-year-old ones.—H. W.

4128.—Pyrus japonica not flowering.—I have a very old and large bush of this, which tole year ago entirely failed to flower. Ought it to be pruned, and if so, when and how much, or would it surer in the autumn be advisable?—T. C. A.

4129.—Ivy on a wall.—I am anxious to get Ivy to climb up a wall built of brick twelve years ago. For some reason the Ivy grows slowly, and will not cling to the wall. It has been planted several years now. What shall I do?—A. H. N.

4130.—Grafting Roses.—Will anyone kindly inform me how to graft Roses, and the best time to do so? The kinds I have are Mrs. John Laing, A. K. Williams, Madame L. Delaplace, Dur de Rohan, General Jacqueminot, and Marie Brennan.—A NOVICE.

4131.—Boronia megastigma.—I have been told that the best way for an amateur to work up a stock of Boronia megastigma is to raise it from seed? Will someone kindly tell me if this is so, and when should I sow the seed?—SOUTH STAFFORDSHIRE.

4132.—Treatment of Seakale.—Will someone please to state the present treatment for a bed of Seakale that was covered with ashes and pots in the open ground last winter? The plants are rather old, large, and untidy, and not planted in rows.—IGNORANT.

4133.—Plants for show in September.—Will someone kindly tell me what plant (not costly) I should get, and how to treat it so as to make it fit for a show to be held on a small scale on September 2nd in connection with an early morning school?—ENTHUSIAST.

4134.—Old mortar and garden soil.—Will "J. O. C." kindly inform me whether old mortar from a wall—rather soft and sandy—is any good to mix with old black-garden soil over the roots of Apples and Peach-trees, and the outside roots of Vines?—AMINER.

4135.—Salicaria, Petunias, and Begonias.—When is the right time to stop pinching flowers off Salicaria, and Petunias, and Begonias, for show in August, and how long will they take to be in full bloom from the time of stopping the flowers?—CONSTANT SUBSCRIBER.

4136.—Petroleum and weeds.—I have seen petroleum recommended as a destroyer of weeds on garden walks. Would someone kindly say—1. What proportion of petroleum should be used with water? and 2. What is the best way of mixing them together?—E. PRINCE.

4137.—Stands for flowers.—I intend showing Astors, Dahlias, Illythoates (Chrysanthemum Class), but having no stands I intend making some; but not knowing the various sizes I should be very pleased if some kind reader would oblige me by giving all details?—CORRATA TRINCO.

4138.—Climbing Roses.—Will someone kindly give me the names of one or two Climbing Roses (pointed to grow up the front of a house (north-west aspect)? I have at present a Gloire de Dijon, but it does not cover the wall quickly enough. Rather exposed position.—E. ATKINSON.

4139.—Treatment of the Mourning Iris.—Would someone please tell me what treatment to give to the Mourning Iris? I have got two, neither doing well. They are planted in good sandy loam in pots. In this wet weather would it be good to put them out-of-doors?—PERRINS.

4140.—Tuberous Begonias.—I have some Tuberous Begonias that were started under glass, and put out in the bed the end of May, and since then have made no growth. The soil is rich and light, and they have been kept watered. Any information or advice would thankfully be accepted by—H. HARRISON.

4141.—Heating a greenhouse.—Would "B. C. R." be kind enough to tell me if 40 feet of 4-inch pipe, heated by a 1-inch coil, & turns and 11 inches wide in the clear, is sufficient to keep a greenhouse 15 ft. by 10 ft. 8 in. up to 50 degrees in the winter? If not, would the coil carry any more pipes?—L.A.

4142.—Chrysanthemum for show.—I am growing for a show in the London Chrysanthemum Show in November next, as seedlings and specimen plants, Mr. Bunn, Mrs. Dixon, Elaine, Vivian Morel, and Gloire Rochee. May I safely continue to until the end of July?—AMATEUR EXHIBITOR.

4143.—Tomatoes not setting.—Having this year planted both Ham Green and Hackwood Park Tomatoes, will any grower please explain why the Ham Green have failed to set any fruit, whilst all the others are growing out-of-doors of from 7 to 16? Still, all the plants seem to be in perfect condition.—PRINCE.

4144.—Plants for a south horder.—Will someone kindly give concise instructions to an amateur for keeping a narrow south horder, under a window, bright and gay from March till November, as a bedding-out? The border is about 3 feet 6 inches wide, and the soil light. Locality, west of England.—AMATEUR.

4145.—Blue Hydrangeas.—Will someone kindly tell me how to make the flowers of Hydrangeas blue? I saw in some paper last year that a mixture of overcoarse mud would have the effect, but there was no alteration in the colour of the flowers. This year I have tried this mud mixed with the mould, but the only effect seems to be to give a more vigorous growth, with very dark green-coloured leaves.—J. STAFFORD.

4146.—Streptocarpus hybrids, &c.—Will someone please to inform me of the best way to get Streptocarpus hybrids to set their seed, as mine wither instead of ripening; also as to the best way of keeping the plants through the winter? Should they be grown on, or dried off like Begonias?—SOUTH STAFFORDSHIRE.

4147.—Treatment of Melons.—I wish for a few hints on Melons. Particulars: 12 plants in a ten-to-house. They are now 14 or 18 inches in height. I am after placing main shoot, and setting two or three side-shoots on to cover wires. Have I done right? Is it quite necessary to fertilise them?—TOM WILSON.

4148.—Double Violets for winter flowering.—I have a fine, healthy set of Violet plants. They will be very good by September. I shall be grateful for directions how to grow them in a Cucurbit-frame through the winter, and how should the bed be made up, &c. Also guidance as to air and water to be given?—BENCOMBER.

4149.—Roses in an unheated greenhouse.—Having a small unheated greenhouse, facing S.E. 12 ft. by 6 ft., can I satisfactorily grow Roses? Should they be grown in pots, or planted out? How many plants, and the best sorts? I will give up the house entirely to Roses, if you think I can obtain some satisfactory results?—Geo. E. EARL, London.

4150.—Mushroom-bed.—A Mushroom-bed was made up in a shady part of the garden, according to details given in GARDENING. They, however, did not start for 11 or 12 weeks. A few good dishes were gathered then, but now they come up brown and withered, with decayed stalks. What is the cause? They are sheltered with litter, and kept moist.—VERONICA.

4151.—Sorts of Apples for grafting.—I have several large Apple-trees, whose heads I intend gradually to remove, and replace with better sorts—viz., Cox's Orange Pippin, Ribston, and Blenheim Orange. Does the latter come into bearing more quickly as a graft than planted as a young tree? I had bloom on several young Ribstons planted last autumn.—GRANOR.

4152.—Legal question.—A neighbour of ours contemplates building a tree which grows in our garden close to the wall facing her house. She makes no claim of good distance, say about 16 ft. or 20 ft., from her front window. She never tells us she is going to do it down, nor, I suppose, the landlord either. Can you advise me if she has done right, or can I raise an objection?—A. R.

4153.—Tomatoes in a greenhouse.—I have a lot of Tomatoes growing in a span-roofed greenhouse. I ventilate it freely, and give the plants sufficient quantity of water every morning. The plants are in good condition, growing well and fruiting freely, but I find that the fruit is so ripens that it is too ready to crack. Will anyone kindly point out to me the most likely cause of this?—W. G. L.

4154.—Clematis not flowering.—Will someone kindly tell me what I can do to make Clematis bloom? It did so last year, but beds do not seem to fill so often, and lower leaves are turning yellow. It is in a small lean-to conservatory, facing south; has the sun from 11 to 5 o'clock. Should it stand in water, or only be watered frequently? Should it be kept shut in? The door is mostly open from 8 a.m. to 10 p.m.—IGNORANT.

4155.—Treatment of Raspberries.—I planted some Raspberries twelve months last autumn, and I find they are a branching kind, and very large, and will require more room. The place is covered with young Raspberries. It is the difficult to tell which to cut after fruiting. I want to fill a few gaps up with young ones. Would any kind reader tell me how to treat them? I may say they are a very large kind, and fruiting well.—OEO. SHERBURN.

4156.—Tomato-leaves injured.—Having had the damper connected with the fan of my Tomato-house accidentally pushed too far in, and left in that position all night, which caused the sulphur to escape through the joints, and destroy all the leaves on the plants, but the fruit does not seem to be affected yet. Will some reader please to state if there is any remedy that can be applied to restore them, or would it be best to pull them up? There are about 150 affected.—SHERBURN.

4157.—Treatment of Vines.—I should be grateful for advice regarding above. My gardener thinks they cannot have too much water and heat—consequently, he keeps them more or less saturated, also the footway, which he does, and he a damp heat always rising, which, he says, is necessary to make the fruit swell, and to keep off insects. For the last year or two the Grapes have had little or no bloom, and a good deal of mildew. What temperature should house be kept at?—G. J. P.

4158.—Berried Solanums.—I have several Berried Solanums that have been in a moderately cool greenhouse for over a year. They had only a few berries on them last year. About six weeks ago I cut them back, and berries are now beginning to form again. They have not been repotted. Is it too late, or should I turn them out of their pots into the open ground, and put them in fresh pots in September? The berries now on them are fair-sized ones, but not beginning to colour yet.—IGNORANT.

4159.—Flower-beds.—I should be glad of suggestions for three flower beds, on a sunny Grass plot (southern aspect), close to my house, with a view to their beauty next year. No skilled gardening or raising of plants in frames is available. Could they be kept gay throughout summer and autumn with hardy herbaceous plants? I am inclined for centres of Anemone japonica or Lobelia fulgens, with bordering of Viola. I could manage a few Gladioli. Any suggestions gratefully received, with hints as to autumn preparation for same?—IGNORANT.

4160.—A dusty garden.—I have a border in front of our house, facing north, and only 10 feet from the dusty high-road, with a paling between. In spite of the long drought it looks quite gay now. The house is covered with Gloire de Dijon Roses, Clematis Hamamelis, American Bellflower, mixed Climbing Nasturtiums filling up the bare space before our wire trellis. The border itself has several shrubby Veronicas, now a mass of white blossom; Garman Stocks, scented on well, and tall spikes of Blue Canterbury Bells at the back. A variety lot of Tuffed Pansies are in full bloom, and have been all through the summer, and Blue Lobelia forms a bright edging. This border has certainly been watered constantly, though by means of a daily and nightly of all its drawbacks, has never looked so bright as it does now.—VERONICA.

4161.—**Plants for Sheffield.**—*Armeria* (*Thrift* or *Seapinks*) in variety are mentioned. Should feel much obliged if "B. C. R." or anyone else would inform me the best way to get plants and where to get them, or buy seed if I have got a couple of clumps of the old pink with pink flowers, which I am gathering on the cliffs around the harbour of Plymouth, but I find they grow very rank in grass and flower in cultivation. I see a much dwarfier sort about in the gardens, with maroon seed white flowers. Any information on the above as to soil, &c., would greatly oblige? I want them to edge round some pots, with gold and silver *Yucca* in centre.—**SKARINK.**

4162.—**Tomatoes sporting.**—Some of my Tomatoes are producing abnormal blooms, apparently resulting from several flowers growing together; the fruits from the same are very irregular in shape, much grooved, and not at all desirable. Also some of the fruit trusses do not stop their growth, but grow on into stems producing leaves. What may be the cause of these two modes of sporting? The plants are in a cold-house, mainly in pots and boxes sunk in the soil, and have been fairly well watered, as well as given a pretty liberal supply of liquid-manure.—**I. P.**

4163.—**Pinks and mics.**—Will anyone inform me whether they have ever suffered any damage to *Pinks* from mice? My experience to-day seems to me to be rather a novel one, for whilst engaged in edging some very fine *Double Pinks*, a mouse appeared on the scene, and running round and round one of the plants as if to select the finest bloom, which he certainly did, stood up as high as he could, & sagged its dew, and very extensively tipped off the blossoms, and decamped with it. I should be glad to know if this is an unusual occurrence?—**ERRIPI.**

4164.—**Treatment of a Passion-flower.**—I have a *Passion-flower*, which was planted against my house three years ago, aspect due south. It looks remarkably healthy, and makes one weed every year, but, as far as I can judge, not too much. It has never once had one blossom upon it, which is a great disappointment to me. Many of my neighbours have *Passion-flowers*, and they bloom abundantly. Will someone kindly tell me his opinion on the subject? It is the Blue *Passion-flower* called *China*, that I mean, and on the label attached to it when it came from Lee's Nursery, Eding.—**MRS. GODDARD.**

4165.—**Hardy Climbing Roses.**—Will someone kindly give me the names of eight hardy free-growing Climbing Roses, to cover a brick wall, about 4 ft. 6 in. high, facing west. I should like the list to include some of the old-fashioned Cluster Roses, so as to have a succession of bloom through the summer and autumn. The garden is sheltered, very hot in summer, facing south-west, and sloping to a large pitch of water, so that it catches the frost in winter. Roses, with the exception of the more delicate Tea, the buds of which are inclined to damp off, do exceedingly well in it.—**SOUTH WALTON.**

4166.—**Destroying Bees.**—May I ask someone to tell me the best mode of destroying Bees that have taken up quarters between the eaves and plaster in the rafters of a high-pitched roof? The eaves are hung on battens. There are three swarms in the roof, and it is found that the fumes of burning sulphur, pumped into a hole down with a snail, weak hellebore, are ineffectual to do more than stupefy the bees. What is required appears to be a powerful pump or bellows, fumes of a more destructive nature, such as sulphur, and the injection of the quantity of fresh air in the roof, the Bees may be exterminated.—**COLONEL W. D. MARSH, Colinet.**

4167.—**Planting Roses.** &c.—Having purchased some Roses, to be sited in November, I shall be much obliged for information as to planting them, principally against a wall (west aspect). Garden well sheltered, good loam. Have been advised to put bone-meal over the roots; would that be more beneficial than stable manure? If so, what quantity to each plant? Would it be placed immediately round the roots? If not, what depth of clay should interlie? A lady whom I address is similarly situated has a *Rose-tree* with good foliage, planted fully three years, but when flowers made have been formed before expanding they wither off. Shall be glad to bear of a remedy.—**D. C. Waterford.**

4168.—**Market gardening.**—I living just taken six acres of land, with a suns wall, near London for market garden purposes, I should feel greatly obliged if you would inform me some of the most profitable crops to grow? The land is stiff loam; there is a wall on the north side about 500 yards long. I thought of throwing up a border, 15 ft. wide, along this, and planting Strawberries. The wall is between 5 ft. and 6 ft. high. Would fruit-trees do on this? It faces south. There is no other land, I did not want to grow such things as Cabbages, Sprouts, Cauliflowers, &c. Would *Pinks*, *Downflowers*, *Iris*, and *Wallflowers* pay? Any information would greatly oblige.—**BERRINK.**

4169.—**Lilacs.**—Will someone kindly tell me if Persian lilacs grow without certainty than the common lilacs after transplanting, and how old it should be when procured from the nursery? The soil of my garden is dry peat on the surface, with a light reddish soil under; subsoil gravel, the whole being on coarse granite, and the ground has been lately reclaimed. The garden is on high ground, exposed to the Atlantic, which makes it almost impossible to grow trees unless shelter is provided; but this does not seem to be the difficulty in this case, as they do not prosper even in the first spring after being taken from the nursery, although they are watered and sheltered. I may also say that I have found the same difficulty with *Tamarisk* and *Sea Buck-thorn*.—**A. M.**

4170.—**Treatment of Chrysanthemums.**—About the 31st of May most of my *Chrysanthemums* produced their first natural buds, grown on the large bloom system, without any stopping. They were then removed, and the three top shoots preserved, and all after-shoots removed from day to day. The usual July bud appeared on several plants towards the end of June. On removing these, side shoots again appeared, exactly as in May, so that I had on each of the three May shoots by the end of June a July bud and three side-shoots, making in all three July buds and nine side-shoots on each plant. I then removed the three July buds and the lower two of each set of three side-shoots, so that on each plant only the uppermost side-shoots grew on each of my three May shoots. Has my procedure been correct, or should I have only removed the July bud, without also removing the two side-shoots next the uppermost side-shoot?—**U.S.**

4171.—**Double Begonias.**—I have about a dozen *Begonias* (*Double*). They are looking fairly well, but all more or less drop their buds. They have every attention in greenhouse, facing south-west, shaded from the sun. The ventilation is good, without draught, and not over-watered. I have cut different parts of the house, but with no better result. I am very anxious to grow *Begonias*. If you can suggest a reason I should feel so very much obliged to you. A reply in your next issue will be very acceptable. I might say I did not raise the plants, but bought them from two different growers. Curious enough my singles do better. They are potted in loam, leaf mould, and sand; the latter two predominance.—**T. S.**

4172.—**Asparagus plumosus.**—I have some plants of *Asparagus plumosus*, which flourished well all last year, and threw up long shoots as usual. I kept them in a cool greenhouse, which seemed to suit them. After Christmas all the growth they made was a very yellowish-green, as if put them into 80 degs. of heat for some weeks, so as if they would make fresh strong growth, but the frosts are still plentiful, and for several months now have not thrown up any long shoots—in fact, made very little growth, and that bushy. They have been repotted. I should be obliged if any readers of *GARDENING* could tell me the reason of their changing colour, and what treatment I ought to adopt to make them send up the usual long shoots?—**EARL RING.**

4173.—**Uses of a frame.**—During the short months of the year I have three frames laid by; could I not make use of them? One is built of brick to a south wall; the bottom is clay; the size of it is 10 feet by 7 feet; the depth at the back 4 feet, and 2 feet in front. The other two are smaller, and built of wood, movable, 5 feet by 5 feet. Will any reader of *GARDENING* kindly advise me what to grow? Could I grow *Saxifraga* in the large one? I have a small weed by full of them; if so, what depth of soil should I use? And what other bulb could I grow with them? How much earlier could I get them? Should want them to remain as long as they would flower satisfactorily, as I want the lights the latter part of March for another frame. We do not use this one in summer, as it is so inconvenient to get to the Van. Can you suggest any grow in the other two? Have kept *Calceolarias* and *Rohrerias* in the large one. Could I not keep them during the winter in a *Celery trench*?—**I. N.**

4174.—**Fruit-trees.** &c.—Perhaps "J. C. G." or "E. H." will oblige with advice. I would find their opinions are very valuable. I have a south wall, about 100 feet run, 8 feet high. Nine years ago I planted four *Peach* trees, four *Nectarines*, and two *Apricots*. They are, of course, all large trees, and have quite covered the wall; but the worst part of the matter is they have never had a crop. They bloom well, but being a south wall they get early and the frost takes all the bloom, or nearly all. The most fruit I ever had is about six dozen from all the trees. Now my *Black Hamburgh Vines*, these have now made good progress, the young rods this season being 14 ft. long and nearly 1 in. thick at base. I believe management has been correct all through, sir being put on gradually as soon as heat rises above 65 degs., and clearing and damping down thoroughly at 4 to 4.30. Now, my trouble is this, and I should be much obliged if someone would explain the cause: The young foliage, for about 3 feet from top upwards, is partly brown and withered, some young leaves crumbling to dust in the hand when dry. The older leaves low down the rod are quite healthy, save one or two are partly scorched. The wires are only 9 in. from the glass, and my opinion is that this is the cause. Should I increase the distance by 18 in. or 20 in.? I may add that the border is outside, and is well drained, but not too dry, as it has been well watered two or three times, and is mulched with long manure. The house is well ventilated, but avoiding draughts, and everything in quite a free from above, with the above exception. I should be glad to give further details if required, as I am anxious to know what causes the mischief, so that I can avoid it next year.—**HUDDERSTON.**

4175.—**A loan to vinery.**—My vinery is a lean-to, facing S.W., roof pitch 45 degs. Was planted 13 months ago with young *Black Hamburgh Vines*. These have now made good progress, the young rods this season being 14 ft. long and nearly 1 in. thick at base. I believe management has been correct all through, sir being put on gradually as soon as heat rises above 65 degs., and clearing and damping down thoroughly at 4 to 4.30. Now, my trouble is this, and I should be much obliged if someone would explain the cause: The young foliage, for about 3 feet from top upwards, is partly brown and withered, some young leaves crumbling to dust in the hand when dry. The older leaves low down the rod are quite healthy, save one or two are partly scorched. The wires are only 9 in. from the glass, and my opinion is that this is the cause. Should I increase the distance by 18 in. or 20 in.? I may add that the border is outside, and is well drained, but not too dry, as it has been well watered two or three times, and is mulched with long manure. The house is well ventilated, but avoiding draughts, and everything in quite a free from above, with the above exception. I should be glad to give further details if required, as I am anxious to know what causes the mischief, so that I can avoid it next year.—**HUDDERSTON.**

4176.—**Agaves (J. B.).**—I do not think it is of any use to quote you names of these plants, for I do not think any of our nurserymen now devote their space to them, and if names were given yet would not be able to get them. I am very sorry to have to acknowledge that the taste for these plants has apparently died up entirely, for, as we say, they are beautiful plants, but, I suppose, are too slow for this fast age.—**J. J.**

4177.—**Odontoglossum Alexandræ.**—*May Scott* says she has this plant in flower for the first time, and sends one, asking if it is a good variety? Yes, it is a very good ordinary form; there is nothing to brag about in it, but you are fortunate in getting such a nice flower of the pure white, normal type of *Alexandræ*. I am much obliged for all the good you have to say, and am glad you have found my hints of some assistance.—**M. R.**

4178.—**Utricularia montana** (*James O'Connor*).—The flower very small is not so Orchid, but a member of the *Heather-wort* family. This species is a native of New Zealand, and it is used with the Orchid and is in fact a member of the same order, but, notwithstanding, it does not belong to the same order, and I certainly should not say you or anyone else was I judge, and this plant was staged as one of a certain member of Orchid.—**M. B.**

4179.—**Limnorchis Humboldtii.**—*J. Cullum* sends me a flower of this beautiful, yellow-flowered aquatic, this is a plant which grows very rapidly in loam; and placed in shallow water in the stove aquarium. The leaves are rounded. They float upon the water, and are light green. The yellow flowers stand erect, and are produced all through the summer; but to keep it through the winter is more difficult. I have found it kept best taken out of the water, and stood upon the stage in the stove, keeping it well supplied with moisture.—**J. J.**

4180.—**Petrasa volubilis** (*G. Hamer*).—I am glad once again to see this plant, which I used to grow some years ago. The flowers you sent were nearly all out of their colour; these latter a deep blue-purple, whilst the flowers themselves are light-blue. I am glad you did not send a leaf, because these are so dry and rough that I cannot bear to touch them, and the barest grazing would make them render the plants less cared for than it otherwise would be. The plant grown well in loam, and requires plenty of root-room, and the pots should be well drained.—**J. J.**

4181.—**Orchids for open border** (*H. W.*).—My *Dorcasia* correspondent appears determined to grow some of these plants, if it can be all possible, and I hope he will succeed; and in order that he may not fail I would again counsel him to plant them in the border, in the same soil from which they were taken. You may grow all the British kinds, if properly planted (when, if these are taken up at the proper time, all will be well), including the *Lady's Slipper* (*Cypripedium calceolus*), but this, as it is nearly or quite extinct as a native plant, you must either purchase or collect in the north of Europe. There are also several North American species of this genus which would succeed, but I advise you to take a run to York, and look round Messrs. Backhouse's nursery, where you will find many that would please you.—**M. E.**

4182.—**Palms for the greenhouse** (*G. W. Swanderland*).—I am asked if I can recommend about a dozen kinds which will thrive in such a structure. The house never gets frost in during the coldest winter, and he asks where he may get seeds of the kinds which I should recommend? Well, the latter question may remain unanswered, for seeds of these plants would not be of much service to you, but you may get good-sized plants, so that they would have an effect at once; then get a few seeds and sow them, when you will see how you would have been served by depending upon these plants. To make an effect, the following kinds will be found to answer your purpose: *Chamaerops excelsa*, *C. excelsa*, *C. Fortunei*, *Livistona australis*, *L. borbonica*, *Kingia australis*, *R. Belmoreana*, *R. Fosteriana*, *Pinakia australis*, *P. Florida*, *Sequoia gigantea*. Good examples of all these plants can be had at a reasonable cost, and they will make you a grand display. To make a little variation, and to set these plants off, some few *New Zealand Ti-trees* (*Dracena australis*) should be used.—**J. JARVIS.**

NAMES OF PLANTS AND FRUITS.

*. Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the Editor of *GARDENING ILLUSTRATED*, 37, Southampton-street, Strand, London, W.C.

Names of plants.—*H. N.*—1, Not recognized; 2, *Dogwood* (*Cornus Mas*).—*Robt. Gibb.*—We are sorry we cannot name the *Lilium* sent, but they were crushed out of recognition in the post.—*C. Feine.*—Please send better specimens.—*E. Gibbes.*—Impossible to name from such specimens.—*Mrs. Bryant.*—*Diplois glaucus*—*Braconidae*.—*Yes.*—*Catananche corymbosa*.—*H. W. Led.*—1, Probably *Catananche corymbosa*; 2, *Sedum Ewersi*; 3, *Sedum Sibthorpi*, probably.—*H. J. Shepherd.*—*Eucyamus argenteus*.—*N. F. Denny.*—A shrubby *Spiraea*.—*Mrs Tweeddale.*—*Elaeagnus variegata*.—*J. E. M.*—All *Campanula*, apparently, but too stale to name.—*W. O.*—Impossible to name from such scraps. It has been pointed out over and over again in *GARDENING* that good fresh specimens must be sent.—*Yalding.*—*Orasula coccoloba*.—*J. McDonnell.*—*Phlemis frutescens*.—*Hybrid.*—Not recognized.—*W. T.*—1, *Phlox*; 2, *Albidus Streptocarpus*.—*H. W.*—1, *Orchis maculata*; 2, *O. pyramidalis*; 3, *Campanula carpatia* alba; 4, apparently a double-flowered form of the preceding; 5, *Pentstemon oriturum* (*Jacob's Ladder*).—*H. P.*—1, *Laila purpurata*; 2, *Catleya Gaskelliana*; 3, *See* what you say it is *Laila monophylla*.—*T. Lawton.*—1, *Thymus asperillum*; 2, *Bartea odontites*; 3, *Mimulus luteus*; 4, *Sambucus Shulzei*; 5, *Callipate tetractis*; 6, *Lonicera rapana*; 7, *Chrysothamnus oppositifolium*.—*D. Bennett.*—1, *Androsace virgata*; 2, *Aplenium Michauxii*; 3, *Dandelion punctellum*.—*Ellen Connett.*—We cannot name them.—*G. Pearson.*—1, *Masdevalla Harryana*, a very good variety; 2, *M. rosea*; 3, *M. Shuttleworthi* (*Chromolaena*).—*B. H.*—1, *Callipteris eucalypta*; 2, *Gymnocarpium decomposita*; 3, *Pteris quadrifurcata*; 4, *Luzula varia*; 5, *Aspeletia elzmanniana*.

Naming fruit.—Readers who desire our help in naming fruit must bear in mind that several specimens of different stages of colour and size of the same kind are usually sent in for determination. We can only undertake to name our varieties at a time, and these only when the above directions are observed. Unpaid parcels will be refused. Any communication respecting plants or fruits should always accompany the parcel, which should be addressed to the Editor of *GARDENING ILLUSTRATED*, 37, Southampton-street, Strand, London, W.C.

Name of Fruit.—*Sannyphora Kent.*—The Strawberry has been submitted to an expert, but it is not recognized.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

injure the Vines. — *Le Mouzon, Edinburgh.* — Apply to Mr. A. G. Buller, The Lilies, 124, Beckenham-road, Beckenham, Kent. — *Amis.* — Mr. Barton's letter has been received, but it contained no credit last. — *Francis A. Shepherd.* — This Clematis often withers like this, especially in a dry season, but there is no really assignable cause. — *Chelmsford.* — The Daisy-fly (*Phytomyia affinis*) is many times mentioned in GARDENING. — *J. S.* — The Grapes are "scalded" for want of early ventilation. — *A Subscriber, S. Dorset.* — The Peach trees are badly attacked with green-fly, and should have been syringed with Tobacco-water or dusted over with Tobacco-powder early in the season. — *Signatures.* — Box received with a Rose-shoot inside, but we could see no grub or grubs. — *A. B. S.* — We should say the Tomatoes are allowed to become dry at the root, and so the fruit does not grow. — *Amicus.* — Yes; there is a pink, shrubby Spirea. — *S. P. C.* — The box was crushed up quite flat, and, of course, the insects could not be recognized. — *A. Greenman, Greywell, Hants.* — The Melons are attacked by red-spider, through too dry an atmosphere. Water the roots and sponge the leaves. — *C. V. P.* — Apply to Messrs. Barr & Sons, Kings-street, Covent-garden, London, W.C. — *W. Kemp.* — Read GARDENING ILLUSTRATED regularly, and send in any queries you like. — *E. Foster.* — Certainly; send as many photographs as you like for the competition. — *Antoinette.* — The shoots sent are Brier suckers, and should be removed. — *J. W. Clark.* — We have the photograph, and it will be included in our competition, and returned if successful. — *C. B. Cross.* — The Ferns have scales on them. Some Ferns may be watered overhead, but generally not so. We cannot name broad-leaved Ferns. Send again. — *Cheshire.* — Apply to Mr. J. Cheal, Nurseryman, Crawley, Sussex. — *Z.* — The Tomatoes have the Potato disease — *Carbon.* — Yes; there is a Green Rose in cultivation, but we do not think it is of much value. — *James Moore.* — Most probably the Bees are suffering from the long continued drought. We cannot see any other cause.

BEES.

SEASONABLE NOTES.

DIFFICULTY is sometimes experienced in getting the Bees to commence work in sections when placed on the top of the hive, particularly in the event of the hive not being strong in Bees. If, however, sections are first put into brood frames and these introduced into the hive on either side of the cluster of Bees, they are, as a rule, taken to, and work carried on in them very readily. As soon as the foundation is worked out the sections can be removed with the adhering Bees and placed in the crate on the top of the hive. Other Bees will thereby be induced to go up, and the work in the sections will go on. Work in sections is always more readily commenced in the body of the hive than on the top. The Bees can sometimes be forced up into the sections by ramming some of the frames from the hive and contracting the brood-nest by means of the division-boards. Being cramped for room, the Bees go up into the sections, and there store all surplus honey.

STRIPPIING SECTIONS — Three stories of sections can be used at one time in the strip-ping system. On the commencement of the honey flow a crate of sectional boxes, provided with thin foundation, is placed over the frames of the hive. When the sections have been worked in, and are about two-thirds full, the crate is raised, and one containing empty sections placed beneath it. These are also in turn raised, and a third placed below on the top of the hive. When there is a good honey harvest the top crate is soon completed, when it is removed. This is continued so long as the honey harvest lasts, but as soon as the honey flow begins to decline no more sections are given, but the Bees are encouraged to finish those on hand. Sections of comb-honey should always be removed from the hive as soon as finished in order to preserve the whiteness of the comb. By inverting sections when nearly completed, and when the honey flow is abundant, enables the Bees to finish them off better, and the number of holes at the corners are thereby reduced.

HONEY FOR MARKET. — Care should be taken that all samples of honey present as neat and attractive appearance as possible. Sections of comb-honey should be quite filled, all the cells being sealed and the surfaces of combs quits even. Evenness of surface is attained by the use of dividers between the section-boxes, which allow but a quarter of an inch at the top and bottom for the passage of the Bees, thus all projections or bulgings are obviated. Sections should be removed before the cappings of the cells are thickened by the Bees. Thinness of capping being considered one of the chief points of perfection in super-honey. Whiteness of comb is another important feature, and a further reason why sections should be removed from the hive as soon as completed, for, after completion the heat of the hive and the

traffic of the Bees mar the spotless whiteness of the newly-made comb. The honey within the comb, when held to the light, should present an amber colour, brightness, and transparency. Care should be taken to prevent granulation of honey after removal from the hive. This may be effected by keeping it in a somewhat warm temperature. All sections in each crate should matob in style of work, quality, and colour. Sections should be glazed on either side; but if they are marketed in glazed crates the glazing of the sections is not necessary. Travelling-crates are very nice things in which to send sections to market. They are glazed on two sides, so that the contents are visible, and present a very attractive appearance when filled with well-finished sections. The demand for honey is increasing, and that which presents the neatest appearance finds the readiest sale. Extracted or run-honey should be put up in clear glass jars holding just one pound. It is important that the glass be clear, otherwise the appearance of the honey is spoiled. Each jar should have an attractive label, and be tied down with vegetable parchment, which, if moistened with the white of an egg before being tied over the honey-jar, an almost perfect seal-tight will be found, permitting to be sent on a journey without danger of leakage. Or the jars may be corked, and the corks covered with metal capsules. Screw-cap bottles are now much in vogue. If the small corks used with these are dipped in melted wax, and the top screwed down upon them, there will be no leakage. For exhibiting at shows sections are often placed in coloured cardboard boxes, having glass fitted so that both sides of the comb can be examined. Fancy tin cases, coloured different tints, are also used. S. S. G., Parkston.

4026.—Unhealthy fowl — I cannot enlighten "E. M. B." as to the name of the ailment from which her fowl suffers, but I have frequently met with the disorder, and generally the victim has either been bred from unhealthy stock, or has been reared under unfavourable conditions. For example, chickens hatched late in autumn, and indifferently treated during the cold weather, will often show symptoms of the ailment in spring, and I have occasionally met with chicks brood from sounder stock which have gone wrong. The quietist might prick the air vessels and liberate the air, but they will probably reappear. The wisest course is to fatten the fowl and kill it when good enough. — *Dorling.*

GARDEN AND PLANT PHOTODGRAPHS.

We beg to announce another photographic competition, when prizes to the amount of over Eighty Guineas will be awarded.

The subjects selected may be: Beautiful houses and country seats; garden landscapes; picturesque trees; plants, hardy and tender; Ferns; Roses; cut flowers, prettily arranged; pretty cottage gardens; our best fruits on the branch or branches, not in dishes; standard vegetables; good flower-gardens, or any other objects of interest in a garden.

LIST OF PRIZES.

COUNTRY SEATS AND GARDENS. — A prize of TWENTY GUINEAS will be given for the best series of not less than six photographs of Tudor, Elizabethan, Jacobean, or other old English houses and their gardens, particularly showing the beauty of the house in relation to the garden. Picturesque old Farm and Manor houses will not be excluded from this competition.

GENERAL GARDEN AND PLANT PHOTOGRAPHS. — First prize for the best collection of general garden photographs, SEVEN GUINEAS. Second prize, FOUR GUINEAS. Third prize, THREE GUINEAS. This series may include subjects from any class, from either outdoor or indoor gardens.

FLOWERING PLANTS. — A prize of FIVE GUINEAS for the sander of the best collection of photographs of flowering plants grown in the open air or under glass. This series may include flowering shrubs of all sorts.

BEST GARDEN FRUITS. — A prize of FIVE GUINEAS for the best collection of photographs of any of our good garden fruits: Grapes, Peaches, Apples, Pears, Plums, Cherries, &c., or bush fruits, to be shown on the branches, not in dishes. No prize will be awarded to photographs of fruits or vegetables crowded in dishes.

BEST VEGETABLES. — A prize of THREE GUINEAS for the best collection of photographs of best garden vegetables. The object of this is to get full representations of the best garden vegetables under the old genuine names. We do not want to exclude real novelties when they are such.

In any of the departments, if no collection of sufficient merit is sent in, no prize will be awarded. All competitors not winning a prize will for each photograph chosen receive the sum of half-a-guinea. In order to give all readers ample time to prepare good photographs the competition will be kept open until the last Saturday in July, 1895.

WHAT TO AVOID. — Cut flowers or plants should not be arranged in vases with patterns on them. Backgrounds should be plain, so as not to come into competition with the beautiful flowers. Figures of men or women, barrows, watering-pots, rakes, hoes, rollers, and other implements, iron railings, wires, or iron supports of any kind, labels, and all like objects should be omitted from these photographs. The intention is to show the full beauty of the subject taken, and this cannot be done well when the photographer is confused by other considerations. Dewy flowers are ineffective when taken directly from above. The camera should be brought low down for such. All photographs should be mounted singly, and not several on a card. They should not be mounted on cards with black backs, and the photographs should not be less in size than 3 inches by 4 inches. In many of the photographs sent in for our last competition the subjects were much overcrowded. The following are the rules to be observed by all competitors: —

FIRST. — The photographs may be of objects in the possession of either the sender or others; but the source whence they are obtained must be stated, and none sent the copyright of which is open to question. There is no limit as to number, and no fee to pay. The Editor is to have the right of engraving and publishing any of the chosen photographs. The photographs may be printed on any good paper that shows the subjects clearly; but those on albumenized paper are preferred for engraving.

SECOND. — The name and address of the sender, together with the name and description of the object shown, should be plainly written in ink on the back of each photograph. This is very important.

THIRD. — All communications relating to the competition must be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Covent-garden, London, W.C., and marked "Photographic Competition." All competitors wishing their photographs returned, or not to be used for any other purpose, must stamp of sufficient value for that purpose.

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- | | | | |
|---|---|---|--|
| <p><i>Abutilon vexillarium</i>
 <i>Adeonocarpus deserticans</i>
 <i>Acridon Laverackii</i>
 <i>Ethionema pulchellum</i> and <i>Anemone vernalis</i>
 <i>Apyris flexuosa</i> and <i>Kennedia coccinea</i>
 <i>Alliansida grandiflora</i>
 do. <i>villosa</i>
 do. <i>Williama</i>
 <i>Astromeris</i>, hybrid
 <i>Amaryllis belladonna</i>
 do. <i>Nectar</i> and <i>splendens</i>
 <i>Anemulae caudata</i>
 <i>Audouinea fastigiata</i> and <i>Veronica pinguifolia</i>
 <i>Audouinea lanuginosa</i>
 <i>Anemone alpina sulphurea</i>
 do. <i>Fanoid</i>
 do. <i>Japonica</i>, pink and white
 do. <i>Japanese</i>
 do. <i>nemorosa</i> (forms of)
 do. <i>Pulsatilla</i>, the Pasque Flower
 do. <i>ranunculoides</i> and <i>A. thalictroides</i>
 <i>Agrostis caudatum</i>
 <i>Androsanthus breviflorus</i>
 <i>Androsanthus streuunginum</i>
 do. <i>Botanichidiansum</i> and vars.
 <i>Androsanthus</i>, group of
 <i>Aquilegia Stuarti</i>
 <i>A. crotus acutis</i>
 <i>Arenaria baccata</i>
 <i>A. latifolia elegans</i>
 <i>Aster acris</i>
 do. <i>Amellus</i> and <i>A. hirsutissimus</i>
 do. <i>Stracheyi</i>
 <i>Auricula Golden Queen</i>
 <i>Auriculae</i>, group of
 <i>Azalea Deutsche Purlo</i>
 do. <i>Hixe</i>
 <i>Benfordia splendens</i>
 <i>Beaumontia grandiflora</i>
 <i>Begonia Hagenii</i>
 do. <i>John Hual</i>
 <i>Begonias</i>, two tuberosa
 <i>Benthania fragifera</i>
 <i>Berberis vulgaris asperma</i>
 <i>Besleria elegans</i>
 <i>bignonioides</i>
 do. <i>Tweediana</i>
 <i>Bilbergia vittata</i>
 <i>Blandfordia Cunninghamii splendens</i>
 <i>Bomarea conferta</i>
 do. <i>frondea</i>
 do. <i>oculata</i>
 <i>Sororia heterophylla</i>
 <i>Bougainvillea spectabilis</i>
 <i>Bouvardia Fremontii Cleveland and B. Mrs. R. Oseen</i>
 <i>Brier</i>, Austrian Copper
 <i>Briers</i>, Scotch
 <i>Browallia Jamesoni</i>
 <i>Buddleia Colvillei</i>
 <i>Burtonia scabra</i>, villosa and <i>Johnstonia lupulina</i>
 <i>Cassalpinia japonica</i>
 <i>Calanthe Veitchii</i>
 <i>Calanthes</i>, hybrid
 <i>Calceolaria</i>, a new race of
 <i>Callicarpa purpurea</i>
 <i>Callistemon rigidus</i>
 <i>Calochortus Ravus</i>
 do. <i>Kennedyi</i>
 <i>Caltha leptosepala</i> and <i>Alyssum montanum</i>
 <i>Camellia reticulata</i>
 <i>Camellias</i>, two new Japanese
 <i>Campanula posida</i> var. <i>creniflora</i>
 <i>Campana Louis Thibault and Victor Hugo</i>
 <i>Carnation Harmony</i>
 do. <i>Ketton Rose</i>
 do. <i>M. Bergendii</i> and <i>Mlle. Roussel</i>
 do. <i>Queen</i>
 do. <i>Tree</i>, Mrs. A. Homley
 <i>Carpenteria californica</i>
 <i>Cassiopeum Hungenrothii</i>
 <i>Catleya Fretwelliana</i>
 <i>Celastris cretica</i>
 <i>Cercis siliquastrum</i>
 <i>Cereus Lemairi</i>
 <i>Cerintho retorta</i>
 <i>Chimonanthus fragrans</i>
 <i>Chionodoxa Lucille</i> var. <i>gigantea</i>
 <i>Chrysanthemum America</i> and <i>C. Lady Brooks</i></p> | <p><i>Chrysanthemum Elaine and Soleil d'Or</i>
 do. <i>a single</i>
 do. <i>(single) Jane and its yellow var.</i>
 <i>Chrysanthemum</i>, Japanese <i>Anemone-flowered</i>
 do. <i>two hairy</i>
 <i>Chrysanthemum aurita</i>
 <i>Cistus crispus</i>
 do. <i>formosus</i>
 do. <i>Lindifurus</i> var. <i>maculatus</i>
 do. <i>purpureus</i>
 <i>Clarkia elegans</i> fl.-pl.
 <i>Cleomea Stanleyi</i>
 <i>Clerodendron Klemferti</i>
 do. <i>trichotomum</i>
 <i>Clanthus Dampieri marginatus</i>
 <i>Coburgia trichocoma</i>
 <i>Cologyne cristata maxima</i>
 <i>Convolvulus mauritanicus</i>
 <i>Corvus Kousa</i>
 <i>Cosmos bipinnatus</i>
 <i>Crataegus lanacetifolia</i>
 <i>Crimm Powellii</i>
 <i>Crocuses</i>, group of autumn
 <i>Crossandra uncinifolia</i>
 <i>Cyclamen Coxm and C. Atkinsi</i>
 do. <i>repandum</i> and <i>Bosa alpina</i>
 <i>Cypripedium acuta</i> and <i>C. pubescens</i>
 do. <i>Chamberlainii</i>
 do. <i>Dominianum</i>
 <i>Cytisus nigricans</i>
 <i>Daphne Genkwa</i>
 do. <i>Mezereum autumnalis</i> and <i>Cydonia japonica Moorboosi</i>
 do. <i>Mezereum</i> vars.
 <i>Dendrobium Panchajanya Schroederiana</i>
 do. <i>thyrsiflorum</i>
 <i>Dianthus alpinus</i> and <i>Erodium macradenium</i>
 do. <i>neglectus</i>
 <i>Dieltmannus Fraxinella</i> var. <i>alba</i>
 <i>Diosis Huttonii</i>
 <i>Digitalis</i>, spotted variety
 <i>Diuraphis foetida graminifolia</i>
 <i>Dixa racemosa</i>
 do. <i>Veitchii</i>
 <i>Echium callithyrsium</i>
 <i>Elaeagnus parviflora</i>
 <i>Elaeocarpus cynosuus</i>
 <i>Elaeocarpus chionantha</i>
 <i>Epidendrum macrochilum album</i>
 <i>Eremurus Bungei</i>
 do. <i>robustus</i>
 <i>Erica hymalis</i> and <i>E. b. alba</i>
 do. <i>prepodens</i>
 <i>Erigeron aurantiacus</i>
 <i>Erythronium pumilum</i> and <i>Sedum spatulifolium</i>
 <i>Erythronium Dens-canis</i>
 <i>Eucalyptus leucocorymbus</i>
 <i>Eucalyptus amazonica</i>
 <i>Foraythia suspensa</i>
 <i>Fraxinea calycina grandiflora</i>
 <i>Fritillaria aurea</i>
 do. <i>Melagris</i> var.
 <i>Fuchsia dependens</i>
 do. <i>triphylia</i>
 <i>Gentiana atrovirens</i>
 <i>Gentiana hawarica</i> and <i>Aquilegia glandulosa</i>
 <i>Cerebra Jamesoni</i>
 <i>Oenona cardinalis</i>
 do. <i>longiflora</i>
 <i>Goum miniatum</i>
 <i>Oladieli</i>, now hybrid: 1, <i>La France</i>; 2, <i>L'Alsace</i>; 3, <i>Maque de Far</i>
 <i>Gallodius sulphureus</i>
 (<i>harlosa superba</i>)
 <i>Oloxinis</i>
 <i>Orithia hyacinthina</i>
 <i>Habonaria militaris</i>
 <i>Haberlea rhodopensis</i> and <i>Campanula turbinata</i>
 <i>Habrothamnus Newellii</i>
 <i>Hananella arborea</i>
 <i>Helictum autumnale pumilum</i>
 <i>Heliopsis scabra</i>
 <i>Homocallis Dumortieri</i>
 <i>Houchea sanguinea</i></p> | <p><i>Hilbertia dentata</i>
 <i>Hibiscus Hagellii</i>
 do. <i>Rosa sinensis fulgens</i>
 do. <i>Trionum</i>
 <i>Humeranania fumarifolia</i>
 <i>Hyacinthus aureus</i>
 <i>Hybrid Sweet Briars</i>
 <i>Hypericum oblongifolium</i>
 do. <i>olympleum</i>
 do. <i>triflorum</i>
 <i>Illicium floridanum</i>
 <i>Impatiens Hawkeri</i>
 <i>Ipomoea Horsfallii</i>
 <i>Iris aurea</i>
 do. <i>hiemalis</i>
 do. <i>ochroleuca</i> and <i>I. Monapur</i>
 do. <i>pallda</i>
 do. <i>paradoxa</i>
 do. <i>pavonia</i> and <i>I. pavonia corulea</i>
 do. <i>uniflora</i>
 do. <i>tingitana</i>
 <i>Isomene Andreana</i>
 <i>Ixora Westi</i>
 <i>Kaempferia rotunda</i>
 <i>Kniphofia aloides</i> var. <i>glaucescens</i>
 do. <i>caulescens</i>
 <i>Lailia alba</i>
 <i>Lathyrus grandiflorus</i>
 <i>Lechenanthea biloba roseri</i>
 <i>Lewisia rediviva</i> and <i>Micromeria Piperella</i>
 <i>Lilium canadense</i>, red and yellow forms
 do. <i>Henryi</i>
 do. <i>japonicum</i>
 do. <i>nepalense</i>
 do. <i>nepalense</i> var. <i>ochroleucum</i>
 do. <i>speciosum rubrum</i>
 do. <i>superbum</i>
 do. <i>Stovitzianum</i>
 do. <i>Thunbergianum Alice Wilson and Van Houttei</i>
 <i>Limonocharia Humboldtii</i>
 <i>Linaris alpina</i> and <i>Phyteuma humilis</i>
 <i>Linum arboreum</i>
 <i>Lonicera sempervirens minor</i>
 <i>Luculia gratissima</i>
 <i>Magnolia conspicua</i>
 <i>Malva lateritia</i>
 <i>Marica corulea</i>
 <i>Maxillaria Sandoriana</i>
 <i>Mitlenia spectabilis</i> and var. <i>Morelliana</i>
 <i>Mina lobata</i>
 <i>Montbretia</i>, now hybrid
 <i>Mutisia Ciceratis</i>
 do. <i>decurrens</i>
 <i>Myosotidium nobile</i>
 <i>Narcissus Broussonetii</i>
 do. <i>triandrus</i> var. <i>albus</i> and <i>N. cyclamineus</i>
 <i>Nelumbium speciosum</i>
 <i>Nemesia strumosa</i> vars.
 <i>New Narcissi</i>: 1, <i>Albatross</i>; 2, <i>Seagull</i>; 3, <i>Seedling Pheasant's-eye</i>
 <i>Nymphaea Maritima</i> (Canary Water Lily)
 <i>Odontoglossum Harryanum</i>
 do. <i>Wattianum</i>
 <i>Olearia insignis</i>
 <i>Oncidium Crossus</i>
 do. <i>Jonesianum</i>
 do. <i>Phalanopsis</i>
 <i>Oncocyclus</i>: <i>Prise</i>: 1, <i>Gates</i>; 2, <i>Lortoli</i>; 3, <i>lydia</i>
 <i>Ornithogalum nutans</i>
 do. <i>pyramidale</i>
 <i>Orobis canescens</i>
 <i>Ostrowakya magnifica</i>
 <i>Oxalis Bowiciana</i>
 <i>Oxera pulchella</i>
 <i>Oxytropis Lambertii</i> and <i>Acantholimon glumaceum</i>
 <i>Peonia albiflora Adrian</i>
 do. <i>decora elatior</i>, <i>P. lobata</i>, <i>P. anomala</i>
 do. <i>Moutan</i> var. <i>Reine Elizabeth</i>
 do. <i>Vogus</i>
 do. <i>Whitleyi</i>
 <i>Peony</i>, single white <i>Moutan</i></p> | <p><i>Pansies</i> (tufted) <i>Duchess of Fife</i> and <i>Hartree</i>
 do. <i>Quaker Maid</i> and <i>Jackanapes</i>
 <i>Pansy</i> (tufted) <i>Violetta</i>
 <i>Papaver orientale</i>
 <i>Pasiflora corulea Constance Elliot</i>
 do. <i>racemosa</i>
 do. <i>Wateontana</i>
 <i>Paulownia imperialis</i>
 <i>Phloxopsis gloriosa</i>
 <i>Phlox Drummondii</i> (some good vars. of)
 <i>Phyllocactus delicatus</i>
 <i>Pinguicula grandiflora</i> and <i>Vivis pedata</i>
 <i>Pink Her Majesty</i>
 <i>Polygala Chamelouxii purpurea</i>
 <i>Primrose College Oardon seedling</i>
 do. <i>Oakwood Blue</i>
 <i>Primula forbiniana</i>
 do. <i>imperialis</i>
 do. <i>minima</i> and <i>Epilobium obovatum</i>
 do. <i>Sieboldi</i>, white and light vars.
 <i>Prunus Pissardi</i>
 do. <i>trilobus</i>
 <i>Ranondia pyrenaica</i> and <i>Omphalodes Lucille</i>
 do. <i>pyrenaica alba</i>
 <i>Ranunculus Lyallii</i>
 <i>Reinwardtia tetragynum</i>
 <i>Rhododendron Ceres</i>
 do. <i>kewense</i>
 do. <i>multicolor</i> hybrid
 do. <i>niagracum</i>
 do. <i>racemiosum</i>
 <i>Rhododendron</i>, Hybrid <i>Java</i>: 1, <i>luteo-roseum</i>; 2, <i>Prinrose</i>; 3, <i>jasmiflorum carminatum</i>
 <i>Rosa Indica</i> var.
 <i>Rosa Anna Olivier</i>
 do. <i>Comtesse de Nadeillac</i>
 do. <i>Junceata Firota</i>
 do. <i>Jean Perret</i>
 do. <i>Laurette Mesahay</i>
 do. <i>Mme. de Watteville</i>
 do. <i>Mme. Niboune</i>
 do. <i>Marquise de Vivens</i>
 do. <i>Marie van Heintze</i>
 do. <i>Mrs. Paul</i>
 <i>Rubrica purpurea</i>
 <i>Ruellia macrantha</i>
 <i>Saccolabium bellinum</i>
 <i>Sarracenia</i>, now hybrid
 <i>Saxifraga Boydii</i>
 do. <i>Fortunei</i>
 <i>Schizocaulis caucasia</i>
 <i>Schubertia grandiflora</i>
 <i>Senecio macroglossus</i>
 <i>Semilacina olivacea</i>
 <i>Snowdrops</i> and winter <i>Aconite</i>
 do. <i>eight kinds of</i>
 <i>Solanum Seaforthianum</i>
 <i>Stanhopea platyceras</i>
 <i>Stenandrium lutea</i> and <i>S. angustifolia</i>
 <i>Stigmaphyllon ciliatum</i>
 <i>Streptocarpus Galpinii</i>
 do. <i>vars. of</i>
 <i>Streptocarpus</i>, hybrid
 <i>Stuartia pauciflora-Camellia</i>
 <i>Sweet Pea</i>, <i>Miss Stanley</i>, <i>Mrs. Eckford</i>, <i>Orange Prince</i>, and <i>Dorothy Teunaut</i>
 <i>Tea Rose Corinna</i>
 <i>Thalictum anemonoides</i> and <i>Saxifraga caesia</i>
 <i>Thunbergia grandiflora</i>
 do. <i>laurifolia</i>
 <i>Tufted Pansies</i>: 1, <i>Ravenswood</i>; 2, <i>Edina</i>; 3, <i>Bo her</i>
 <i>Tufted Pansies Sylvia</i> and <i>Bessie Clark</i>
 <i>Tulipa vitifolia</i>
 <i>Tulips</i>, old garden
 do. <i>southern</i> (T. <i>australis</i>)
 <i>Tydia Mrs. Heine</i>
 <i>Urochloa pendula</i>
 <i>Vanda torea</i>
 <i>Wahlenbergia pumilliflora</i>
 do. <i>saxicola</i>
 <i>Waldsteinia trifolia</i>
 <i>Xerophyllum apodoloides</i>
 <i>Zauschneria californica</i>
 <i>Zephyr Flower</i> (<i>Zephyranthes Atamasca</i>)
 <i>Zephyranthes candida</i>
 <i>Zygopetalum cristatum</i></p> |
|---|---|---|--|

GARDENING ILLUSTRATED.

No. 750.—Vol. XV.

Founded by W. Robinson, Author of "The English Flower Garden."

JULY 22, 1893.

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NOTES ON ANNUAL FLOWERS.

The annual flowers this year are very poor, and those that were transplanted have practically failed. But if this class is not in condition this season, when exceptionally hot weather from quite early spring has prevailed, they must not be condemned. Annuals are useful for amateurs, especially those with small purses, who wish for gay gardens, but cannot afford much in buying established plants. A few packets of good seed, properly sown and the seedlings well cared for, will give a variety of colours. Such annuals as Viscaria, Poppy, Larkspur, Silene, Nemophila, and Sweet Pea may be sown in the autumn, as they are as thoroughly hardy; but in the majority of instances, however, seed sowing must be deferred until spring, although under natural conditions the seed is scattered on the ground in autumn. Our winters are too treacherous to behave always kindly to the many beautiful annuals from California and other countries that add to the beauty of English gardens, and in some instances it is necessary, as in the case of the China Asters, to sow the seed under glass. The culture of the annual is very simple. When the seed is to be raised it must be sown in shallow pots or pans, usually the latter, and very thiohy. Use good soil and water carefully, as the seed is very fine and delicate, and may be washed away. When the seedlings appear and are of sufficient size to handle, prick them off into other pans filled with the same kind of soil, and in due time, after well hardening them off, pising them in the positions they are to fill in the garden. China Asters, Stocks, the showy Chinese Pinks, Gaillardias, Godetias, Heliochrysum, or Everlastings, Lobelias, Nicotiana glauca (Sweet-scented Tobacco), Petunias, PENTHEMUM, annual Chrysanthemums, Salpiglossis, Scabranthus, African Marigolds, and the quaint Zinnias are all beautiful. Some of these, as the Petunia, are not strictly annuals, but may be called such, as the seed is sown the same year as the plant flowers, and another batch sown again the following year, one year sufficing for culture and the display of blossom. In dealing with annuals sown under glass always take care that the seedlings, before being transferred to the open ground, are thoroughly hardened. There must be no doubt about this, otherwise they will assuredly come to grief when pnt out to face the trials of English weather. As regards the outdoor culture of annuals, two things must in particular be taken account of—their sowing and careful after-attention. The soil, in the first place, must be prepared well, and this was not the case a few years ago when annuals were regarded as short-lived, weedy, and so forth. This character was gained, not through deficiencies in the annuals themselves, but simply indifferent cultivation. A dozen seedlings were permitted to struggle for life on a space not large enough for half that number. It was truly a case of the "survival of the fittest," but, unfortunately, the "fittest," after the battle, received such a shock that their way through life was sadly impeded. Aot wlely and well prepare the soil by making it moderately light, and having a due surface, as

the seeds are very small. Sow thinly, and when the seedlings appear above ground thin them out well, so that each may have sufficient space to develop its proper character. The usual way is to sow in lines, but small clumps on the border are very showy, whilst a bed of annuals is a departure from the usual run of plants found in gardens. Aim at scouring effect by bald masses, as it is only in this way that fine colouring is gained. Sometimes there is an old-fashioned border, in which the White Lily sends up its spikes of white flowers, and the Cabbage Rose makes beautiful in the summer months, but yet there is an absence of variety. It is under these conditions that annuals may be made of use, and if they send their little flower-laden shoots on to the walk, it will break up the usually formal edge. The writer remembers a very charming border filled with bulbous plants, and when these were over, a succession was maintained by a good selection of annuals, which do not root deeply, therefore were not hurtful to the permanent occupants. The broad masses of annuals spreading about in artless fashion over the border, and running on to the walk, were homely, and a decidedly interesting picture, very different from the septennials usually present in gardens. Annuals are amateurs' flowers of a useful and interesting type. It is not difficult to sow the seed, and with ordinary attention a good reward will be reaped. It is not wise to have too many kinds, and the following are recommended for gardens of ordinary size, or choice may be made from this small list:

BARTONIA AUREA (golden-yellow), the seed may be sown in autumn for early flowering; Brachycome, popularly known as the Swan River Daisy, very dweri, and with flowers like those of a Cineraria; Calendula, or Cape Marigold, Calliopsis, the old-fashioned Candytuft, Cornflowers in various colours, rose, purple, white, and blue; Chrysanthemums, the beautiful Clarkias, Collinsias, Convolvulus, Chinese or Indian Pinks (very showy annuals, best raised under glass, and represented by several varieties), Eschscholtzie, or Extingisher-flower, Gillias, Godetia Duchess of Albany, of the purest white; Sunflowers, Heliochrysum, better known as Everlastings; Larkspurs, Lavatera trimestris, a lovely rose-coloured annual, and its variety alba; Linarias, Lupines, Malopes, the quaint Marvel of Peru, Night-scented Stock, Marigolds, Mignonette, Nasturtium of various colours, the Blue Nemophila, Love-in-a-Mist (botanically called Nigella), Sweet Peas, Poppies of many kinds, Salpiglossis, Saponarias, Silene or Catchfly, Sweet Sultan, Virginian Stock, and Viscarias. One of the most beautiful is the Sweet Pea, and during recent years this homely flower has been much improved. Sweet Peas may be used to screen unsightly objects, and also sown in clumps in the mixed border, the shoots being trained to twiggy sticks. To gain a succession of bloom sow in the autumn, these flowering early, and also sow in the spring to carry on the time of Sweet Pea until the verge of winter. Such kinds as Adonis (rose-pink), Apple Blossom (white and rose), Beatrice (earmine), Mrs. Gladstone (pink), and Cardinal (scarlet) are very telling, but the old kinds that our grandmothers were wont to

form into little posies for the old-fashioned parlour are beautiful still in spite of a small army of novelties. A distinct gain to our gardens is the Night-scented Tobacco (Nicotiana glauca), and plants put out in May from seed sown under glass early in the year will bloom freely in the summer. The flowers are produced with great freedom, and are creamy-white in colour, smelling sweetly in the evening time, a few plants scenting the garden. Some of the seedlings may be reserved for growing on in pots, to adorn the conservatory or greenhouse. The Poppies—at least, the annual—kinds are not made sufficient use of in small gardens. They are of little value for cutting, lasting but a brief time, and their odour is scarcely pleasant, but in the garden the flowers tell effectively. The beautiful French kinds, Peony-flowered, and field varieties, are full of grace and charm. The latter are selected from the common P. Rhæna, the plague of the cornfield, the varieties having flowers of exquisite expression, the colours are so soft and well blended. V. C.

4118.—Gas and plants.—Unburnt gas is certainly injurious to plant life, besides being highly dangerous, as when mixed with air beyond a certain point it will explode like gunpowder if a light happens to come in contact with it. The fumes, or products of the combustion of gas, are even more deadly to plant life, and if even a small quantity is allowed to escape into a greenhouse no end of damage will quickly result. With a properly-arranged flue to carry off the fumes outside, a small structure may be safely and satisfactorily heated by means of gas; but, in any case, it is better to have the boiler or stove situated outside rather than in.—B. C. R.

—An escape of gas into a greenhouse is certainly injurious to the plants, but gas may be used with perfect safety as a heating power in a properly constructed boiler.—E. H.

4108.—Market gardening.—Strawberries ought to do remarkably well on the proposed border, and would come in early. Let the border slope 3 feet or 4 feet from back to front. Part of it might be devoted to early Lettuces and Cauliflowers, if desired. The wall is just the place for fruit-trees, and should be planted with Peaches, Apricots, choice Pears, and a few Plums. It is a difficult matter to advise anyone what to grow for profit in these days, everything is so overdone, and the returns depend so greatly on the season, as well as on the demand. Hundreds of acres of Strawberries are being ploughed up this year. Flowers are almost a drag in the London markets now, and, unless you can get them in early, or hit some popular fancy, very unprofitable at present. I think if I had such a place I should put up a range of roomy (mostly) unheated houses, and grow early Lettuces, salads, Cauliflowers, &c., during the winter and spring, following on with Strawberries to ripen in May, and then Tomatoes, &c., afterwards.—B. C. R.

4114.—Destroying cockroaches.—There is nothing to come near the Demon beetle-trap for clearing off these vermin. Set with a piece of soft cheese, and you will catch them at first by hundreds a night, and later on by fives and tens at a time you will think yourself lucky if you can count ten, either old or young.—A. G. BROWN.

OUTDOOR PLANTS.

VERBASCUM OLYMPICUM.

SOME of the more important biennials, Foxgloves, and, still more notably, the larger Mulleins, have in their short lives two distinct seasons of beauty. The first when the young plant, within its first year of life, has thrown all its strength into the great rosette of foliage; the second, when the garnered vigour has been expended in building up the stately flower-spikes. The engraving shows the Olympian Mullein in the first state, when its leaves, of the palest grey-green velvet, are in their young prime. A plant that has passed midsummer in this state will probably so remain till next spring, the grand circle of leaves, 3 feet to 4 feet in diameter, growing a little more, but retaining its perfect appearance till well into the winter. Frost will destroy the outer leaves, but they will be renewed when the warmer days come, to be followed by the great branching stem, laden with sulphur-coloured flowers.

4123.—A house border.—You could have creepers against your house Veitch's

although I should not go in very strongly for these. Choose also of the Achilleas, the beautiful White *A. mongolica*, *A. Ptarmica* fl. pl., or, better than this, *A. The Pearl*, a lovely summer flower, each like a little rosette, and beautiful on the plant, also useful for cutting. But, firstly, I ought to have reminded you that the border must be well prepared, otherwise success cannot come. In the south position such beautiful Peruvian Lilies as *Aletrismeria areca*, the hardiest of all, may be grown, and a good mass of it is a pleasure to see. *Adonis vernalis* is charming in the spring with its yellow flowers and dense growth, whilst yet also a good selection of the varieties of the *Rosa* *Campion*, *Alysaum saxatile compactum*, appropriately called *Gold Dust*, is smothered with yellow flowers in the spring. Then in the late summer and autumn very beautiful is the *White Japan Anemone*, one of the finest hardy perennials in cultivation. It will provide a wealth of bloom for the house. The lovely *Anemone nemorosa* in variety will give beauty to the border in spring. Get also *Columbines*, *Sweet Williams*, *Phloxes*, *Tufted Pansies* in variety, and they have been frequently noted of late in GARDENING, dwarf *Michaelmas Daisies*, *Erigeron specio-*

to have a warm soil, light, and well drained. In low-lying positions failure is certain to result. Sometimes on a warm nook in the rockery it will bloom well, or in a border running by the side of a plant-house. The best results are got from a bed raised above the level a few inches, and throughout the winter protected by a frame from heavy rains, but in the summer fully exposed and kept dry. It is such a quaint flower that it is worth a little trouble to get it true to character.—O. T.

4159.—**Flower-beds.**—You could make the beds gay with *Tufted Pansies* in good variety, but got decidedly coloured kinds, such as *Archie Grant* (rich blue), *Duchess of Sutherland* (lovely lilac shade), or one of the many whites. Many things go well with them, especially the *Lobelia fulgens*, which is a splendid flower in early autumn, and even when not in bloom its rich chocolate-coloured leafage is attractive. The *Cladiol* would do well, and one bed would look exceedingly well planted with *Fuchsias*, either greenhouse kinds or the hardy *F. Riccarteni*, having in between the *Oxalenia candelans*, whose late spikes of white bell-shaped flowers are in perfect contrast to the masses of *Crimson Fuchsia* flowers. One bed would look very well planted with *Carnations* and *Tea-scented Roses*; but the soil must be well prepared. This is a lovely mixture, or you may change it by having the *Roses* to contrast to *Tufted Pansies*. The *Anemone* would do well in the centre, but it is rather robust, and would soon monopolise the space; but even if the bed was composed of nothing else, it would be very beautiful to look at in late summer and throughout the autumn. *Hydrangea paniculata grandiflora* is a fine shrub for such a purpose, quite hardy, and very free, producing large panicles of white flowers. I should try the *Tufted Pansies* and *Roses*.—C. T.

4119.—**Destroying Chickweed.**—The constant use of the hoe is the best, if not the only, way of keeping this pest under. The reason of it is that the ground is so full of the seed that every time it is turned over a fresh crop appears. Keep on hoeing it up, choosing a dry, summer day if possible, whenever it appears, and before it runs to seed (this is most important), and in time the soil will become free from it, although it must be admitted that it is a long and tedious process.—B. C. R.

4140.—**Tuberous Begonias.**—I suspect your plants were treated like many more are which turn out miserable failures in the beds out-of-doors—viz., they are started into growth in a moist and warm temperature, thus rendering the leaves and stems soft and sappy, and unable to bear either sun-heat, drought, or cold winds. Tuberous *Begonias* as bedding plants can be classed amongst the finest subjects for the embellishment of the flower-beds or borders, but the plants must be properly prepared before being finally put out into their flowering quarters. The first week in April is soon enough to start the tubers into growth, and this should not be done by the aid of artificial heat. Cold frames afford the best means of preparing the tubers. At planting time the plants should not be more than 4 inches or so high, and of a sturdy character. The recent hot, dry weather has been all against *Begonias*, even in the best of condition; but these improperly prepared it has been quite the reverse of good. I should advise "H. Harrison" to afford some shade to the plants, either by stretching some tiffany over the plants during the hottest part of the day or by thrusting some branches of such trees as *Sycamore* or *Horse-Chestnut* in the soil among the plants until new growth is apparent, removing the shade by degrees if the weather continues hot and dry. It is wise to cover the soil about the plants with some low-growing subject, such as *Herniaria glabra*, *Sodium glaucum*, or *S. Lydium*, which has the effect of not only conserving moisture in the soil, but forms an agreeable contrast for the bright colours of the flowers above.—S. F.

— It is somewhat strange that the plants refuse to grow; as a rule, they flourish like weeds when planted out in this manner. Have they been watered thoroughly, so as to keep the soil constantly moist? Mere sprinkling, such as too many people consider sufficient, are useless in such weather as this. The only other thing I can suggest is that the manure used was too fresh and rank, which would very likely



Foliage of Olympian Mullein (*Verbascum olympicum*). Engraved from a photograph.

Virginia Creeper, *Gloire de Dijon*, or in your position *W. A. Richardson* *Roses*, *Clomata Jackmani*, the beautiful *C. montana*, *Jasminum nudiflorum*, and *Honeysuckles*. I should not plant *Ivies*, as they are so common everywhere, and in the southern aspect you may enjoy beautiful flowering climbers. Now as to the selection of plants. You may plant for an effect in spring, *Crocuses*, *Daffodils*, *Tulips*, *Ornithogalum*, and other spring-flowering bulbs. Get a few good ones of each section, and the *Daffodils* will last over a fairly long season—if you have the early pallidus *praecox*, then the noble *Horsfieldi*, a splendid trumpet variety, *maximus*, rich yellow; the lovely *Phoenix's Eye*, and the double white *poetiana*. Also get the pretty *Hoop Petticoat*, *Narcissus*, and the *Star*, *Narcissus Stella* and *Sir Watkin*, not forgetting a few doubles. These must be planted in the autumn. Then you could get some *Lilies*—*L. candidum*, *L. umbellatum*, *L. croceum*, *L. auratum*, and *L. davuricum*; but it depends of course upon what you are prepared to spend as to the selection. At any rate, you may select from these. As regards plants other than herbaceous, get some good self *Carnations*; *Pink Mrs. Lakin* (white), *Her Majesty* (the old white), and such beautiful lace kinds as *Modesty*,

sum superbum, the late spring and early summer blooming yellow *Helenium pumilum*, *Achillea*, *Canterbury Bells*, easily raised from seed sown now, *Antirrhinum*, *Forget-me-not*, *Campanulas* in variety, particularly *C. persicifolia*, the white-flowered *Chrysanthemum uliginosum*, *Coreopsis lanceolata*, *Delphiniums*, *Dictamnus Fraxinella*, both the type and the white variety, *Dicentra spectabilis*, also known as the *Lyre-flower*, *Doronicum plani-ginnum excelsum*, *Sea Hollies*, *Funkias* or *Plantain Lilies*, especially *F. Sieboldi*, *Genm miniatum*, *Cypripedium paniculatum*, *Houchea sanguinea*, *Perennial Sunflowers*, *Scarlet Lychnis*, *Lupinus polyphyllus albus*, *Evening Primroses* in variety, *Poppies*, *Polemonium Richardsoni*, *Saxifrage*, *Trollius*, and of course you can make the garden gay with *Sweet Peas*, *Poppies*, *Tropaeolum*, and other annuals. To the above list, which I think you will find quite long enough, but it contains all the best things, may be added the *German Irises*, and double crimson and blush *Paeonias*.—C. T.

4139.—**Treatment of the Mourning** *Centaurea* *Isis*, which I may mention for the benefit of other readers is called *I. rubra*, and is notoriously troublesome to grow. It is essential

account for it. All else being well, water the plants once or twice with a solution of nitrate of soda, one ounce to the gallon, sprinkling the foliage well with pure water immediately afterwards to prevent scalding. A mulch of Cocoanut-fibre or spent Hope would also assist them greatly.—B. C. R.

4110.—**Pansy-cuttings, &c.**—The right time to take cuttings of Pansies is towards the end of August and during the early part of September. Choose wiry young shoots from the base of the plants that have not flowered, insert them in light, sandy soil, and keep moist and shaded till rooted. Tulips may be transplanted at any time after the foliage has completely died away; September is probably the best month.—B. C. R.

4103.—**Layering Carnations.**—Surround the plants with gritty soil; road-grit and leaf-mould, with a little loam, will do. Remove any leaves which may be in the way at the bottom of the shoot, and make a cut with a sharp knife upwards through a joint, and about half-way through the stem. Peg down firmly in the gritty soil, and cover the stem about half an inch or so in depth. Keep the soil moist by watering when necessary.—E. H.

4160.—**A dusty garden.**—I thank you for the information you send with regard to the behaviour of the plants in your garden, as I am just now interested in this question, and I find your experience with some of the flowers is similar to my own. I may add to my previous list the Marguerites as being very satisfactory for such a garden, especially the variety Feu d'Or. This is a strong-growing kind, with light-yellow flowers, that has been in bloom for a month past, and will continue so until frost cuts it down. The leaves being narrow, the dust does not lodge on them very much.—J. C. O.

4124.—**Dandelions on a lawn.**—These can be got rid of in time by keeping the heads out off. It is perfectly true that a hebeheaded root will break out again, but if the process is repeated two or three times the root dies. The heheading, of course, must be done promptly. It will not do to give time for the plants to gather strength after each decapitation. Lawn sand, sulphuric acid, and other destructive substances may be used to expedite the work, but the heheading alone will do it.—E. H.

4115.—**Spiraea japonica roots.**—When the growth of the plants gets too weak to flower well, divide in spring, and plant out in a moist situation, or where water can be given when dry, and let them remain two years to get strong. They may then be potted up and forced again and will generally give satisfaction. But when the roots are divided after flowering, especially if they have been forced, they are not strong enough to flower well the next season. I have divided strong roots in the autumn, but if the roots are much out about in doing so it is better not to force them. I should say either divide in spring, or let them remain two years, or else plant out without dividing; repeat in a pot a size larger.—E. H.

—Yes, divide the roots after flowering, and before planting them out. If they are allowed to remain undisturbed for two years quite small pieces will make good clumps in this time.—B. C. R.

Flowers for dusty gardens.—In GARDENING, July 8th, p. 255, a note appears from "J. C. G." upon this subject, and he mentions a few things, bedders, that he knows succeed well under such circumstances. Two good plants that are not harmed by dust are the Iris in variety and the Fuchsia. I have seen large masses of the German Iris succeed perfectly well in hot, dusty gardens, and this group is so extensive that varieties that offer great range in colour may be obtained. The best is the common blue, avoiding all flowers with shade of delicate colour. The Fuchsia will live well in most spots, and as with the Iris, dust is quickly removed from the smooth surface of the leaf. There would be fewer disappointments if only those things known to succeed well, where the position is trying for most plants, were selected.—V. C.

4122.—**Bog soil.**—Very good Potatoes are grown in the Fen districts, especially in dry seasons. Other vegetables also, such as Asparagus, Celery, Greens, and roots are grown in considerable perfection, in large quantities, for the supply of the Midlands and Northern markets. In some districts now, notably in

what was formerly Whittlesea, there it is quite possible to dig through the bog and bring up clay from below to improve the top soil, and claying is now common in winter and spring.—E. H.

TREES AND SHRUBS.

The Variegated Maple.—One of the most largely planted trees in towns is the Variegated Maple (*Acer Negundo variegatum*, as it is botanically called), and the result is not happy. The tree has very holdly variegated leafage, and rendered so conspicuous that the presence of it results in a monotonous effect. Trees of this character should be planted with the utmost caution, otherwise there is an variety. I do not wish to condemn it—far from it; but must say that when seen in almost every garden in some suburbs it gets wearisome. A few of it quickly add to the beauty of thoroughfares, making a distinct change from the usual run of things. When planted against Copper Beech, or some dark-leaved shrub of similar tone, the effect is rich and attractive.—V. C.

A new shrub.—A charming shrub is the sport from *Spiraea Bumalda*, named Knaphill Crimson, which produces a profusion of crimson flowers, and is very constant. It occurred in the Knaphill nursery of Mr. Waterer, and it is a shrub that should be made note of. The habit of growth is dwarf, like the parent, the plant growing about 2 feet in height. It likes a rather warm position, the soil fairly light and well drained, and being dwarf and spreading may be planted in a group. These dwarf *Spiraeas* are often written of as tender, but this is not the case, except in the coldest spots.—V. C.

4111.—**Pruning flowering shrubs.**—As both Myrtles and the large White Jasmine flower on shoots of the current year's growth, any pruning required is best done during the autumn, or before the first week in March. Myrtle communis, the most generally known and the most useful variety, does not require much pruning as a rule, with the exception of the removal of unsightly branches that have grown beyond a prescribed area. The Jasmine needs rather severe treatment in this respect. When the allotted wall space is covered, the shoots made annually should be cut back to within an eye or two of the base at the time named.—S. P.

—If Myrtles or Jasmynes require much pruning it should be done in spring when the plants are trained; but long shoots may be taken out of Jasmynes any time during summer. Myrtles will hardly require much pruning beyond a little regulation of the growth in spring.—E. H.

4169.—**Lilacs.**—There is no difference in the behaviour of the different sorts of Lilac for such a case as yours. What you have to contend against is the elevated position of the garden and the rough wind that sweeps over it. Whatever you plant should be put in not later than the middle of October, and instead of selecting plants with spreading branches 3 feet or more in height, select those that have a short, sturdy growth not more than 2 feet high. Even these should be rejected if they have not got a mass of young roots. Without the latter to steady them in the ground they are sure to die. As soon as you put in a tree or shrub weigh the roots with large stones, covering all the surface in a circle 2 feet over. You will be surprised how much this will steady them against the wind. I know something of the difficulty you have to contend with, and my advice is that you put in only thoroughly-prepared plants, even if you do not have so many of them.—J. C. C.

—I have always found the Persian Lilac if anything more robust, and certainly more sciliferous, than the ordinary kind, though the growth is not so strong. I fear the soil does not suit the plants. Try putting some manure below the roots, and a mulch on top.—B. C. R.

4104.—**Clipping a Bay hedge.**—Cut the Bay hedge down so as to get a little growth as it again before winter. I think I should rather prune a Bay hedge with a knife, the shears make such a hash with large leaved shrubs. Box edgings also may be cut now, selecting a dull, damp day, if possible.—E. H.

4129.—**Ivy on a wall.**—In respect the soil in which the Ivy is planted is poor, hence the reason of its slow progress. At the beginning of next October take up the roots carefully and well trench the soil, 2 foot deep and about as much wide. Add partly decayed manure freely. If the soil is clay, or otherwise not genial to the roots, add road-grit, decayed vegetable refuse, or old potting-soil freely. Plant the Ivy carefully,

not burying the roots too deep, covering them with some of the best of the compost and mulch the surface with manure, 2 inches thick, afterwards; this will preserve the roots from frost during the winter and keep them moist during the summer. Ivy is partial to moisture both at the roots and overhead when growing freely, therefore too much water cannot well be given when the drainage is satisfactory. Secure the leading shoots to the wall to encourage them to cling of their own accord.—S. P.

4087.—Striking cuttings of shrubs.

—The amount of success to be met with in this matter depends mainly upon the convenience you have and the amount of time you can devote to the work. If you have a cold frame available, or a few hand-lights, you will have less difficulty in doing what you want. As a matter of fact, you will not succeed in striking the young growth of *Deutzias* without giving the cuttings some protection. Fairly hard shoots of this season's growth of such subjects as *Escallonia*, variegated Holly, Roses, Honey-suckles, Passion-flower, and Jasmynes will strike in a cold frame, if the cuttings are dibbled in a bed of sandy soil about the end of this month. Cuttings of the Common Laurel, Aucuba, Box, Laurustinus, and Portugal Laurels will root freely if they are planted on a sheltered border early in October. To propagate such subjects as Thujae, Cupressus, and Euconymus, you must have some kind of glass protection, and you must have sufficient patience for the cuttings to get well rooted before you move them.—J. C. C.

Ceanothus Gloire de Versailles.—Apart from the original species and varieties thereof, there are now a great many garden forms of *Ceanothus*, between several of whom, however, the difference is very slight. The variety *Gloire de Versailles* is of Continental origin, and has been grown for many years, but as far as my experience extends it is still of the very best and hardiest, which last is of great importance, for in many districts the *Ceanothuses* suffer greatly during the winter if they are not protected by a wall or something in that way. If not cut too severely they, however, quickly recover, and so summer advances many of them will be laden with their plum-like clusters of pale-blue blossoms. In planting the *Ceanothus* see shrubs in the open ground, a sheltered spot should as far as possible be chosen, for the cold cutting winds of early spring often injure them so much as severe frosts in the winter. A free light soil suits them well.—H.

PENTSTEMONS.

It is very disappointing when having raised a quantity of young plants of *Pentstemon* from seed early in the spring, planted them out and had a fine bloom from them in the autumn, to find the winter, either because so wet or so severely cold, has either destroyed the plants absolutely, or has so cramped them that they are almost useless henceforth. Those who have a greenhouse or a frame may get over the disappointment somewhat if plenty of cuttings have been taken off during September and put into pots, stood on a shelf or in some moderately shaded part of the frame, and there nicely rooted. Such young plants potted up singly in the spring and later planted outdoors make capital substitutes for the old plants which the frosts have destroyed. When, however, the old plants do survive the winter unharmed, then the many strong shoots sent up from the stems of the plants produce such clusters of bloom as to excel materially anything that can be obtained from young seedlings or cutting-made plants. But it is not difficult to have, apart from the cutting-made reserve, a quantity of young plants to stand the winter if a sowing of seed be made within the next few weeks. *Pentstemon* seed does not germinate very rapidly and plant growth is rather slow, so that if seed be sown at the end of July or early in August, it is not probable that the seedling plants will be, by the end of November, at all too large to keep, as they are in a frame or under a hand-light for the winter. The best course would be to dibble them out from the seed-bed or pans into a frame thickly or else under hand-lights. When once rooted very little protection will suffice to keep them safe through hard weather. In the autumn these plants, lifted carefully with small clusters of roots

attached and as carefully planted out, will soon develop into strong blooming ones and make a fine display all through the early summer, a spring sowing coming on to make a succession. Practically, Pentstemon should always be treated as

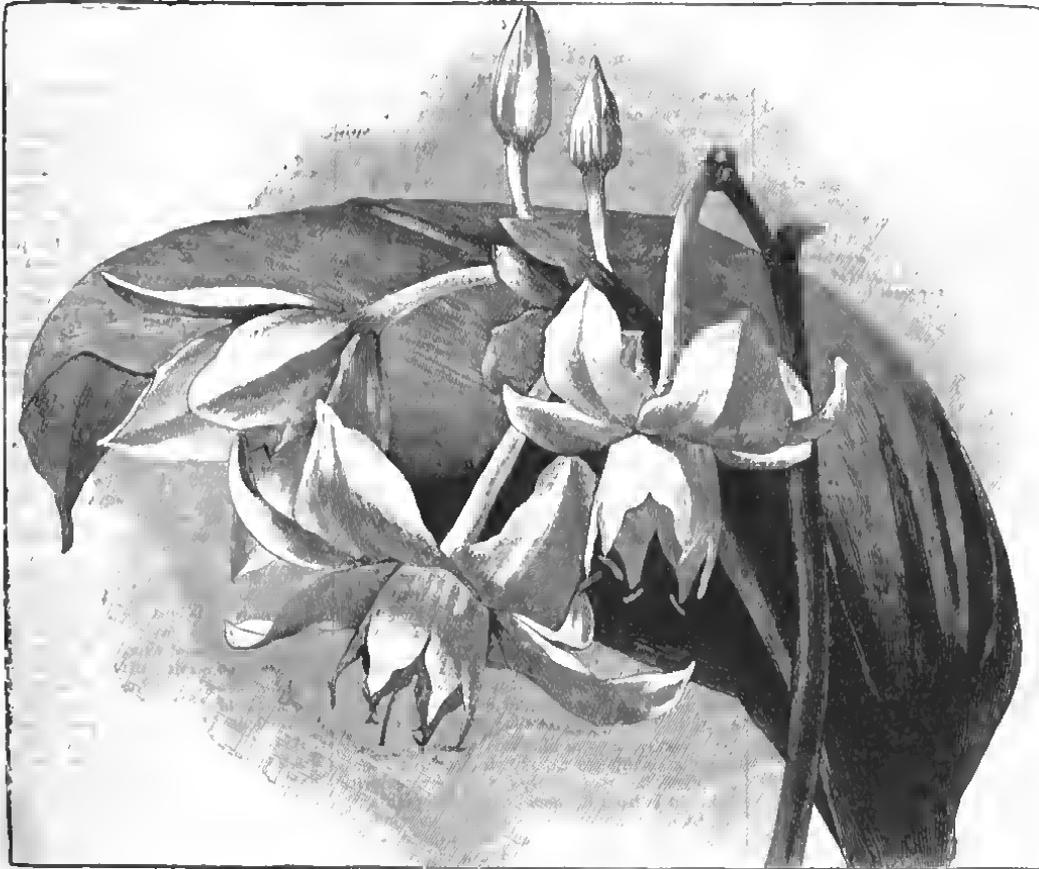
BIENNIALS, but consideration has to be given to the fact that they are not always so hardy as true biennials should be. The Antirrhinum is pretty much in the same boat as is the Pentstemon, for both are somewhat soft-wooded and are apt to die wholesale under the effects of severe weather. Snapdragons are so prolific of seed, that they may be easily raised at almost any time, and although with these, as with Pentstemons, no plants produce such a fine display of bloom as do strong ones that have been safely wintered outdoors, yet dead ones may readily be replaced by seedlings raised by an autumn sowing. As to the raising of Pentstemons from seed, it is best always to obtain a really good stock. There is such a

INDOOR PLANTS.

THE SMALLER-FLOWERED EUCHARIS (E. CANDIDA).

THE more we see of this beautiful bulbous plant the more we are convinced of its great value, particularly for affording an abundant and continuous supply of out flowers during winter. It is not second even in beauty to its popular congener, *E. amazonica*, and, being smaller, it is even more desirable, especially for association with other out flowers. The blossoms are about a third smaller than those of the Amazon Lily, but are of the same waxy texture and snowy whiteness, save the cup, which is tinged with a greenish yellow. It is a vigorous grower, and develops leaves as large or even larger than *E. amazonica*, and continues to produce flower-spikes throughout the winter if grown in a moist, warm plant-house. It may be successfully grown in a good, turfy loam, enriched by

to prevent the soil running among the faggots. Over the straw a layer of last year's leaves is placed, into this the roots of the Violets find their way, they being especially partial to decayed leaves. The soil I use is mainly composed of roadside refuse, with which is mixed a quantity of grit that assists in keeping the whole porous. To this I liberally add decayed leaves with the addition of a small quantity of horse manure partly decayed. This compost is about 9 inches thick. If the soil in the garden is naturally inclined to be sandy add the horse manure and decayed leaves to it simply. The plants are then lifted with a good ball of soil and roots attached, and planted in the frame; the soil is pressed firmly about the roots. When the plants are placed in the frame the leaves are quite at the top of the sides of the frame. In a short time the soil settles down, so that by the time the lights are placed on the plants are within 2 inches of the glass. They should receive a



Flowers of *Eucharis candida*.

wide distinction now between good and indifferent strains, that only those familiar with the former can understand how great is the advance made in the flowers. Once a good strain is secured, it is easy to retain and even to improve it. Something, perhaps much, has been done in the direction of improvement by cross-breeding, but very much also has come from selection, and it is open to any amateur grower of Pentstemons to select the very best flowers, mark them each year, and save seed from these alone. In that way it will be found easy to greatly improve any stock. Any new grower of Pentstemons, however, will do wisely to make as good a start as possible with a good strain, as it is sheer waste of time to go over the ground which others have long since traversed, when the results of their labours may be had in seed form at a trifling cost. Very much improvement has also been effected in the habit of growth of the Pentstemon, but yet there is still room for further progress in that direction. A.

a little well decayed manure. When seen in the form of huge specimens in 14-inch pots bearing a quantity of flower-spikes, often as many as ten and a dozen blooms on each, this plant forms a really lovely sight.

4148. — Double Violets for winter flowering.—As the plants are now a good size remove any runners that form between now and September, and keep the plants clear of weeds, which prevents the maturation of the crowns by excluding from them light and air. The best winter quarters for the frame is a sunny position sheltered from north and east winds. Place the frame on two bricks at each corner to raise it above the soil, which is a preventive against the rotting of the frame. At the bottom of the frame I place a layer of faggots or old Pea-stakes for a twofold object—viz., raising the plants near to the glass and permitting of thorough drainage, as I find the development of the plants retarded if the roots are waterlogged. On the wood a thin layer of stable litter is placed

good soaking of water, which settles the soil about them. I omitted to say that in planting into the frame the leaves of one plant should be so near to its neighbour as just to stand clear—that provides sufficient space for each plant. Do not place the lights over the plants until there is danger of frost or continuous rains; even then tilt them at the back to admit air to the plants. The roots make progress, but not the leaves, which is what is required; if many new leaves are made before the April following the crop of flowers is a thin one. Although a few degrees of frost will not injure the Violets when the lights are on, it is not wise to have the leaves touched by it. Abundance of air should be given at all times when the thermometer out-of-doors stands above 35 degs. Anything approaching the plants in detrimental to their welfare. As to watering, this depends so much upon the kind of soil the plants are growing in. In my case I do not find it necessary to water until February, after the thorough soaking the plants receive when first put into the frame.

The state of the soil is the best guide; if it dries quickly by all means well soak it, and be sure this is done in the morning, so that the leaves will be thoroughly dry before closing the frame at night. The frame will need protecting from frost in some way; freshly-gathered leaves or manure answers the purpose for the sides. The glass can be protected by mats, straw, hurdles, or some other means.—S. P.

4154.—**Oleander not flowering.**—A short time ago I went to visit a friend, and noticed a magnificent Oleander in his house in full bloom. I remarked upon its beauty, and lamented that in spite of following the instructions of practical gardeners strictly, I had never succeeded in getting beyond beds. My friend replied, "I know; it was just the same with me for several years, and I was in despair, until I was informed that the plant ought always to stand in water. I tried the receipt, and now I never fail to bloom it." I am now trying this plan myself, and hope it may turn out as well in my case. It is all very well for professional gardeners, who are always at hand, or have men to look after things when they are not, to recommend that such and such a plant shall be kept plentifully supplied with water; but the amateur who has only his mornings before breakfast, and his evenings after tea or dinner, to look after his stock, may easily overlook individual plants with fatal results as regards bloom.—A. G. BUTLER.

4141.—**Heating a greenhouse.**—You do not state the height of the structure, which is an important factor, or yet whether it is a lean-to or span-roof. But in either case 40 feet of 4-inch piping would not be enough to ensure a temperature of 50 degs. in severe weather, and I should strongly advise the addition of another 20 feet, which the coil, if properly set, would work quite easily.—B. C. R.

4105.—**Treatment of Hakea.**—These are New Holland plants, and require greenhouse treatment. The soil should be composed of a mixture of about equal parts fibry loam, peat, and sufficient sharp silver sand to make it moderately porous. As with all plants of this character, it is most important to have plenty of drainage, otherwise they suffer severely from a waterlogged condition of the soil. Too much water inflicts serious injury, few plants suffering more from this cause than such things. There is a host of kinds, and many have been introduced a long time into English gardens. *H. acicularis* was introduced in 1790, also *H. dactyloides*, whilst others were sent over quite early in the present century.—C. T.

4104.—**Treatment of a Passion-flower.**—Either the soil is too rich, the growth is too crowded, or the plant is of a bad sort, and will never bloom well. Numbers of this Passion-flower are raised from seed, and seedlings, as is well known, vary considerably in floriferousness, &c. I incline to the latter theory, as the plants in your neighbour's garden do so well, and, if it is so, the sooner the plant is pulled out and a better one planted the better.—B. C. R.

4171.—**Double Begonias.**—Many of these Begonias, and the doubles especially, have a way of dropping their buds in a very aggravating manner. With some (seedling plants particularly) the fault is inherent, but beyond this it chiefly depends on a vigorous root-action. The doubles prefer a rather more firm and substantial compost than the singles—too much leaf-mould is not good—and it should also be composed somewhat more firmly together. Water must be given with care, and only when the soil becomes slightly dry, then affording a thorough supply. Do you use any stimulants? A very little scab dissolved in the water is excellent, and also a sprinkling of the silicate manure now and then will be found very beneficial.—B. C. R.

4173.—**Uses of a frame.**—If you have a sufficient number of plants you may fill either of the frames with Violets in September, but, of course, the plants will have to be prepared to be satisfactory. The large frame may be sown with Early Horn Carrot-seed early next month (August), and the lights put on about the middle of October. You would be able to draw a good supply of young roots from so large a space through the greater part of the winter. You will gain nothing by trying to get the Carrots earlier; they will not submit of being

buried, but will have their own way. Such bulbs as Daffodils, Hyacinths, and Tulips can, however, be successfully grown in the frame, and then removed to the greenhouse or window. Cold frames are also useful for wintering choice Pansies and Cereals. You had better not risk your *Echeverias* and *Calceolarias* in Celery trenches as you suggest, or a hard winter may come and kill the lot.—J. C. C.

4145.—**Blue Hydrangeas.**—To every bushel of ordinary compost (and this should not be too rich), add ½ lb. sulphate of iron, powdered rather fine. Thoroughly well mix the compost, and press the soil about the roots firmly. Hydrangeas do not require much pot-room, so they flower more freely when the roots are somewhat confined. When new growth is perceptible in the spring, supply the plants with warm water, dissolving half an ounce in 1 gallon of clear water, and applying it alternately with clean water or an occasional dose of liquid-manure.—S. P.

—Plant in peat, and I think you will get the desired result. I have not tried the experiment myself, as I have been satisfied with the pink variety.—A. G. BUTLER.

4135.—**Balsams, Petunias, and Begonias.**—You ask for information which it is difficult to give, because so much depends on the vigour of the plants and the temperature prevailing. You ask, indeed, for information the correctness of which can only be obtained by practice and knowledge. You must understand, first, that double flowers take longer to develop than single ones. Seeing that it is better to leave off taking off the flowers a little too early than too late, you had better allow three weeks for the blossoms to expand on the plants you mention.—J. C. C.

4172.—**Aparagus plumosus.**—A cool greenhouse is not a suitable place for these plants in the winter. No doubt they received a check then that they have not yet recovered. If they are rooted out in the fresh soil, a little soot in the water now and then will render the foliage of a healthy colour, and they might be watered two or three times with a weak solution of nitrate of soda (½ oz. to the gallon). Otherwise you must leave them alone. A gentle bottom-heat might be of service.—B. C. R.

4146.—**Streptocarpus hybrida, &c.**—I find these plants do not form any seed in the early part of the summer, but do so later on. If you have plants in bloom now, and you place them in an airy place in the greenhouse they will probably give you a little seed; but it will not be much, as the blossoms appear to want fertilising to produce seed freely. You must not dry off the plants as you would Begonias, although they want much less water in the winter than in summer. The plants are at their best the second or third year, after that they have an awkward way of dying off at the collar without any apparent reason.—J. C. C.

—Fertilise the blossoms while expanded, using a small, soft camel-hair brush, and keep the plants in a moderately-dry atmosphere, with light shades from hot sun only. My plants retained a few green leaves during the whole of last winter, but then they were quite young seedlings, and I understand the old roots may be stored away like Begonias. I should, however, keep them in a temperature of 45 degs. to 50 degs., on a shelf or the like, giving only enough water to keep the soil barely moist, and then they can please themselves about going completely to rest or not.—B. C. R.

4131.—**Boronia megastigma.**—No doubt this plant could be easily raised from seed, but the difficulty, I imagine, would be to obtain this. Sow in extra well-drained pots or pans of very sandy peat, sifted fine on the surface, and with a little charred leaf-mould on the top, and keep moist and shaded in a warm greenhouse. April is the best month.—B. C. R.

—There is less trouble in raising seedlings, but the seedlings are not so compact in habit of growth, and do not flower so soon as plants raised from cuttings, but without proper concealment, such as bell-glasses, &c., *Boronia* are difficult to strike. Sow seeds in spring.—E. H.

4116.—**Phormium tenax.**—This flowers in greenhouses in this country, and possibly out-of-doors in the extreme southern counties, where it may be trusted in the open. It is not a thoroughly satisfactory plant out-of-doors, except in peculiarly favourable situations, and is safer in the greenhouse or conservatory, in which it makes a distinct feature—a change from the usual view of things. It should be placed in the open during the summer months. The

flowers are of a lemon colour, and the whole aspect of the plant is vigorous, the leaves of noble growth, strong, and pleasingly arched. If you have a large garden you may use it with advantage in the summer arrangements, such as in the centre of a large bed of sub-tropical subjects. The variegated form is very handsome, and a few large, or, for that matter, small species are very handsome. If your examples are in good health they will bloom in time, but it is for its foliage and fine habit that the New Zealand Flax is so largely grown.—Q. T.

4018.—**Petting Caotli.**—I should not pot these until the autumn, and do not turn them out-of-doors. The last of my Caotli are now blooming (with one late flower) for the third time this year. I have a grand show of *Cerena*. I keep them in heat all through the year, but in the winter they rarely get more than 50 degs., and hardly say water.—A. G. BUTLER.

4113.—**Alco-carbon light and plants.**—I use this light in my conservatory, and frequently have it full on all the evening in the winter months, but it never injures one of my plants in the least. I also have an alco-carbon three-globed chandelier in my drawing-room in which I have at least one Fern in a pot and a large *Fern-cassia*, the doors of which are usually open more or less; no evil effects have resulted.—A. G. BUTLER.

ROSES.

NOTES ON ROSES.

THE ROSE APHIS.—This is a pest that affects those Roses growing on poor ground in particular; and as many amateurs are troubled with it, a few notes of remedies that have been found of value may be made. It increases very quickly, and to arrest the pest at first is always the better way. Clean water will work wonders, with good syringing when the pest is seen, before it has made much headway, and will obviate the need of insecticides. I always think that those who have not many Roses, and gardens of limited size, value a few brief remedies for the suppression of insect pests. *Quassia-chips* are valuable to keep down the Rose Aphid, and often used; but one of the best insecticides is composed of 1½ lb. of soft-soap, and Tobacco-juice from 4 oz. of Tobacco placed in hot water. This should be added to 25 gallons of water. An excellent preparation is one part of soft-soap to the eighth part of boiling water, then adding sufficient paraffin to make it of a moderate degree of strength; but carefully avoid making it too strong, otherwise mischief will ensue. The soft-soap and Tobacco is the safer preparation.

THE ROSE SEASON.—This is by no means an ideal season for Roses. The flowers at the exhibitions have been very poor, and some of the leading growers have been unable to exhibit. It is not often that this is the case, but perhaps there will be a fair autumn display. If so we shall be rewarded. The best varieties this year are those of the hybrid perpetual class, the dark-coloured kinds in particular, such as *Xavier Olibe*, *Horace Vereet*, and *Lois Van Houtte*. *Gustave Piganees* is one of the chief prize-winners, and although quite a new Rose, it is now largely cultivated. The flowers are of immense size—quite distinctive in this respect—and crimson in colour. Another conspicuous variety has been the now famous *Ulrich Brunner*, which is grown largely, and is a good Rose either in the garden or for exhibition. Amongst the Tea-scented class *Ereest Metz* and *Souv. d'Elise Vardon* have been of note.

TWO NEW ROSES.—Readers of *GARDENING* will be doubtless interested in two new Roses of Messrs. A. Dickson and Son, Newtownards, Co. Down, Ireland. One can only judge of them as shown, but they each received a gold medal at the recent exhibition of the National Rose Society at the Crystal Palace. One is named *Marchioness of Londonderry*, and is a large flower, ivory-white, full, and very promising, also strong in growth. The great merit of these new Roses from these raisers is their very sweet fragrance. *Mrs. Sharman Crawford* is the name of the other; it is shining rose and silvery-white flower, very sweetly scented and distinct, whilst the habit of growth is robust. A gold medal was also given to *Crimson Rambler*, a beautiful new *Polyantha Rose*, the flowers deep-crimson in colour individually, and very showy. They are produced in large clusters, and the plant is very robust in growth. It is a variety quite unique for colour and freedom.

A CHINESE TEA ROSE.—A very charming class is that known as the *Chius*, and one of the

brightest of all is the variety named *Mme. Laurette Massimey*, which is remarkably free, and has very deep rose-coloured flowers, which make a pleasing display. All this section should if possible be grouped in distinct beds, where they are seen to full advantage. The common *China la* of note, known by its free display of pink flowers, whilst others of note are *Cramoisi-Supérieur* (deep crimson, the flowers full and produced freely), *Fabvier* (brilliant-scarlet), *sanguinea* (intense crimson), and *Little Pet*, which has small white flowers. These classes of *Roses*, the *Chinas*, *Polyanthas*, *Bourbons*, and other sections, are not made enough of in English gardens, but it is not for want of beauty. Both the *Chinas* and *Polyanthas* are amongst the gayest of flowers, and when there is sufficient space in gardens should be boldly grouped.

V. C.

GWN-ROOT ROSES.

I wish to give you my experience with own-root *Roses*. I purchased six each of the following varieties from a highly respectable dealer: Sir J. Paxton, Anna de Diesbach, and John Hopper.

my trees; the grub spared two buds only, which were no bigger than those on the other standards of the same variety which had not been disbudded. I wish to be informed on another point. I have been to four different florists for the same standard *Tea Rose*; in three cases I paid 3s. 6d., to which was added in one case a charge for packing, and in two cases I had to pay the carriage; the fourth tree I paid 2s. for, and it was delivered free; this turns out the best of the four; all four plants are equally well worked, and what I want to know is whether one is supposed to get a better strain for the 3s. 6d. than the 2s.? All my own-root *Roses* were infested with green-fly, while the standards and the bushes worked on the *Brier* only had the usual amount. In addition to the own-root *Roses* mentioned I had four each of the following, also own-root: *Red Gloire*, *J. Margottin*, *Madame I. Periere*, and *Souvenir d'Elise*; these never bloomed and gradually died off, while those varieties stood next to them, worked on the *Brier* stock, flourished. I have done with own-root *Roses*.

KEW.

is *Cheshnut Hybrid*. This bears large red flowers, and is a good climber. Then there is the *Red Glory*, but the flowers are not fragrant. *William Allan Richardson* (colour orange-yellow) is a good climber. *Révo d'Or* is also good, but I should say too much like *Gloire de Dijon* to suit you.—J. C. C.

4165.—**Hardy climbing *Roses***.—It is to be regretted that the *Tea Roses* are not to be depended upon with you, as your wall is just the height to ent them. I am afraid the strong-growing cluster *Roses* will not suit your low wall. Some of the Chinese varieties will, however, do admirably, including the common pink one and *Fabvier* (scarlet); *Souvenir de la Malmaison* is also suitable. Beside those, you may have such *Hybrid Perpetuals* as *General Jacqueminot*, *Magna Charta*, *Gloire Lyonnaise*, and *Baronne Prevost*.—J. C. C.

4130.—**Grafting *Roses***.—The best time to graft *Roses* is in spring—February and March—and the best place for them when grafted is a close shaded house or hut where there is a plunging bed. Graft on the roots of the common *Brier* and plunge in the bed till the graft starts into growth, then gradually harden and move to the greenhouse, and plant out in beds. Whip-grafting is the simplest and best method of grafting.—E. H.

4149.—***Roses* in an unheated greenhouse**.—In what part of London do you reside, for you should remember that *Roses* and smoke do not agree at all, and unless your garden is in quite an outer suburb it will be much wiser to give up the idea of *Roses* altogether and go in for *Carnations* or something that will be more likely to succeed. If, however, the atmosphere is moderately pure, *Roses* may be grown well in such a structure and without any heat. I should advise planting out, say, a *Maréchal Niel* and a *Climbing Niphetos* at either end of the house, training the growth thinly over the roof, and then you could have a couple of dozen others either in 6 inch or 7-inch pots or potted out in a raised and well-drained border along the front of the house. *Gloire de Dijon*, *Céline Forestier*, *Hémère*, *Niphetos*, *Belle Lyonnaise*, *Isabella Sprunt*, *Souvenir d'un Ami*, and *Mme. Faloot (Teas)*, with *La France*; *Mrs. J. Laing*, *Gen. Jacqueminot*, *Victor Verdier* and *Alfred Colomb* (H. P.'s), are good sorts for a beginner to try, or for any purpose of this kind.—E. C. R.

CHRYSANTHEMUMS.

SINGLE CHRYSANTHEMUMS.

Few plants are better adapted for the amateur grower who has a limited space at command, as they are, generally speaking, naturally dwarf and bushy in habit, and the shoots do not spread out so much as these of other varieties of *Chrysanthemums* do, but are erect in growth, thus greatly economising space. They produce their elegant blossoms in clusters most profusely. As a class, single *Chrysanthemums* always deserve a good place in the schedules of our *Chrysanthemum* societies, and at least two classes might with advantage be reserved for them—one for flowers in trusses out from the plants (say three trusses of each variety), and the other for specimen plants as naturally grown for decorative purposes. The cultural details requiring attention in the management of single *Chrysanthemums* are precisely the same as for those of other kinds grown in a natural manner. Some desirable well-proved kinds to grow are as follows, and the number given will be sufficient for even the largest grower of them. Of course there are many new varieties of great excellence, description of which can be had in any grower's catalogue. The first fifteen named in the list are the best suited for exhibition. I place them in this order to prevent a repetition of names; though all are suited for growth as bushes, yet the flowers of some are too small to be considered exhibition varieties; *Jane* (syn., *Soowflake*) I must place at the head of the list for its lovely form of flower. The colour is white, the petals twisted in a graceful manner. It grows strongly, carries good foliage, and is altogether a gem. As a comparison to this I name *Admiral Sir T. Symonds*. The flowers which droop slightly, are of a bright orange-yellow; most effective in a pot state. These mentioned below are also good kinds. *M. A. is Moutt* (amaranth crimson, very showy),



Flowers of *Chrysanthemum* "White Dais." (See page 292.)

These all did well, though the blooms were very small. *Blush China* bloomed, but attained no size. The others, *Félicité Perpétuelle*, *Aimée Vibert*, and *Révo d'Gr* have never shown any sign of bloom, though they made rampant growth. At the end of the first year half of the plants which had failed to bloom were cut back hard, the other half being only moderately pruned; there has been the same result. My other bush *Roses* on the *Brier*, and the three first-mentioned own-roots, have done well. I have also a very fine standard *Aimée Vibert*, purchased from the same florist, being the only one among a hundred other standards which shows no sign of bloom. Is there any peculiarity about this *Rose*? Now as to disbudding. Does disbudding produce large blooms? I took two standard *Barenos Rothschilds*, one I disbudded to three buds, the other I let alone—result, sixteen blooms on one tree, three blooms on the other. There was no superiority in the three blooms upon the first tree as to size; situation and treatment the same for both. An amateur enthusiast told me that disbudding was useless. It should be left to *Roses* which should on no account be interfered with. He insisted on trying his theory on one of

Rose Gloire de Dijon.—No one can regret more than I do that I have worried the mind of the Rev. S. Reynolds Hole about the value of this *Rose* for growing under glass (see *GARDENING*, July 15th, 1893, page 278), because I have many times sat at his feet with pleasure and profit when he has discoursed on *Roses*; but in this instance I must really beg to differ. I grant that no other *Rose* flowers so freely or over so long a time as *Gloire de Dijon*, but that is not all that is wanted in a flower that occupies so much space. If it was so, how is it that twelve of *Maréchal Niel* is planted where only one of *Glory* can be found? This fact proves that the majority of people regard *Gloire de Dijon* in the same light as I do—that there are better *Roses* for growing under glass. I admit, however, that when I peened the sentence referred to I may have had the commercial aspect of the question strongly impressed upon my mind.—J. C. C. [ERRATUM.—In the note by the Rev. S. Reynolds Hole referred to, it should read "Canuton," not "Taunton."]

4138.—**Climbing *Roses***.—If you had not rejected a scented *Rose* it would be easy to answer your question. The best sweet-smelling *Rose* as distinct from *Gloire de Dijon*,

Effies (a curious mixture of chestnut and claret, the florets very long), David Windsor (bright chestnut red), Lady Churchill (brick-red), America (hush, large flower), Mrs. Willis (white, suffused with pink), Helianthus (brunze-yellow), Puro Gold (as its name implies), Croshed Strawberry (as its name implies), Patience (amarant, tipped with white), White Perfection (pure white, of capital form), Oriflame (reddish-brown), Mrs. Duke (pale-lilac), Mrs. Langtry (pale-pink), Lady Brook (bright yellow, Buttercup form), Meteor (dark), Oscar Wilde (dull brick-red), Miss Gordon (light-pink, with long, drooping florets), White Daisy (figured on p. 291, a pure white variety, with a yellow disc in the centre), Miss Lala Martin (small pink), Elsie Mand (white, free flowering), Miss Rose (dwarf in habit, pink). The last three named are late-flowering kinds. E.

MILDEW ON CHRYSANTHEMUMS.

The extended heat and drought has rendered the atmosphere so arid that it has been all in favour of the spread of this fungus. I find that the usual sulphur remedy is not nearly drastic enough in its influence to check the progress of this parasite, and it is therefore necessary to resort to other means. Mildew, as a rule, in the ordinary way attacks the upper surface of the leaves of Chrysanthemums, but under such favourable circumstances for its propagation the underneath parts of the leaves are in an equally bad plight. As this pest quickly spreads over the greater part of the foliage of one plant in a few days if not arrested, I would advise amateur cultivators to closely inspect their plants to see if they are at all affected, and if so I would advise them to lose no time in following the plan I am about to detail. Place 2 lb. of sulphur and 2 lb. of lime, which has not been slaked, in 10 quarts of water, and boil for twenty minutes. For syringing the plants use 2 wineglassfuls of the mixture to 4 gallons of clean cold water. A "Stott" syringe is the best instrument to apply the mixture with; by the aid of the sprayer which this syringe is fitted with the liquid can be forced in any direction, thoroughly wetting every part of the plant. If a slight discoloration of the leaves follows from the sediment of the mixture it will not be injurious, and will wash off in time by the aid of rain and the syringe. E. M.

4170.—**Treatment of Chrysanthemums.**—As you require blooms of the finest quality your method of treating the plants has been correct. Had you followed out your last-named suggestion, removing the had only, you would have had three times the number of blooms, but inferior in quality. Very few varieties indeed are there that will come to perfection when allowed to develop more than three buds on one plant. Certainly not of the large-flowered sorts, of which Mlle. Marie Hoste or Etoile de Lyon are examples. Remove all side shoots that push from the nodes below where the bracts occurred, as some varieties have a tendency to make much growth in this manner, it can only be at the expense of the main shoots, weakening them. The prompt removal of surplus shoots concentrates the energy of the plant into the selected branches.—E. M.

— You have done quite right; if all the shoots had been left there would be nice flowers on each plant—for too many. No doubt it will be a very early season for these plants, and if the buds are taken too soon they will be useless.—E. C. R.

4142.—**Chrysanthemums for show.**—I presume you mean—may you continue to stop the shoots until the end of July? This is what your query suggests, although it does not say so. If I am correct in my surmise my advice is not to top them any more, but induce them to grow uninterruptedly, making breaks of their own accord. If not already done the branches should be got into position, as they bend so much easier now than two months hence. The bending of the shoots will not be so much exposed either, as the leaves will hide the bent parts so much better than the bending is done early.—E. M.

4134.—**Old mortar and garden soil.**—Old mortar broken up fine will do good in your garden, but it would do more good in a flower-pot soil. Do not, however, be afraid to use it, as anything fresh is valuable in an old garden. You

may spread it on the surface over the roots of fruit-trees and Vines, and lightly fork it in. You will find early Potatoes come out very clear and free from scab if the ground is liberally dressed with the old mortar.—J. C. C.

ORCHIDS.

CATLEYA SCHOFIELDIANA.

I HAVE from "Mr. C. Jamieson" a magnificent flower of this Cattleya, asking for its name and its native country? And it is such a beauty that I feel constrained to say a few words respecting it. This plant first flowered in the garden of Mr. Law-Schofield, at Rawtenstall, near Manchester, about ten or eleven years ago, and Reichenbach dedicated it to the grower; but since then it has been reduced to a variety of *C. grannosa*, about which I am somewhat doubtful. But, however, be that as it may, this is a very fine kind from a gardener's and an amateur's point of view, for it has a large flower, therefore it has this in its favour; and its colours are both rich and striking, so that it can compete favourably on all points, and it makes up a grand display just at the time when the Orchid flowers, as a rule, are about the shortest and dullest. Especially is this the case in the present year of grace, things being a month earlier, as a rule, than is usually the case. Mr. Schofield, I think, imported this plant in the first place himself, but from whom it came, or who imported it, matters little. Soon more were brought to light, and now a batch of this Cattleya can be brought home, it appears, with as much certainty as any other kind, so that I cannot think it can be even a variety; but we descend from generalities to specialities. Now, this kind, although so beautiful, requires some care to keep it well and in good health. I do not mean to infer that it wants more heat, or more drying, or more anything, than I have so frequently told you that Cattleyas do want, but these requirements must be strictly attended to. The plant will grow along with *C. Trianae*, so that it cannot be said to require a great heat. It may be potted in about the same soil with good drainage; but what is most important is to keep it just moist enough to prevent the bulbs from suffering from drought, for if this is allowed to come on the plant requires a long time to pull round again, and at the same time overwatering must be as strenuously fought against; but everything must be done to make the slender stems as vigorous as possible, and to preserve its large leaves in perfect order. The flowers are produced mostly two on a scape, these each being 5 inches, sepals and petals nearly equal in size and colour, although the petals are somewhat broader. They are thick and fleshy in texture, having a ground-colour of rich Indian-yellow, upon which are a profusion of streaks and spots of crimson-purple. Lip three-lobed, the side lobes erect, creamy white; the middle lobe obovate, which, with the fimbriated reniforme, is of a beautiful bright magenta-purple, and which is covered by papule, and it also has a marginal border of white. No more beautiful and useful Cattleya can be grown, and I would urge all my readers that are Cattleya growers to take the advice of old "Matt." and add it to their collection in the shortest possible time.

MATT. BRAMBLE.

SCUTIOARIAS.

I HAVE forgotten the name of the gentleman to whom I made a promise some few weeks ago respecting these plants, through his letter being mislaid. However, he is not forgotten. Very little is known of the few Orchids which constitute this genus, which were formerly known as *Maxillarias*, but some differences in the organs of the flowers caused Lindley to constitute a new genus for them under the name by which they are now known by Orchid growers, and which has been derived from their leaves—thus sentica, a whip, from the resemblance of them to a whip. They are plants which require to be grown on a block of wood, and to be firmly fixed there with some stout copper wire, and the plants should be firmly pecked with Sphagnum Moss, which, whenever seen to be decaying should be replaced, and fresh Moss given. This may be easily done without injury to the roots. They

like the very hottest place which can be given them, with full exposure to the sun, excepting when they are in bloom, and then a little shade will serve to prolong the flowers in their beauty. They are not new plants, for S. Steell was introduced from Demerara nearly sixty years ago, and it was again found in that country in 1844, whilst the other kind was imported from Brazil, flowered in the great exhibition year of 1851, and although we only recognise the two species, I have little doubt but there are more kinds to be found, but from some cause or other Orchid growers have discarded these plants from their collections, but, as before stated, both of the known kinds require the very hottest place in the East Indian house, with a good moist atmosphere in the summer season, and at no time in the year should they be subjected to the drying system, for naturally they grow on the trees that overhang rivers.

S. STEELI (the kind sent) is frequently called the Shoe-lace Orchid. Its rounded leaves are frequently 3 feet to 4 feet long, tapering to a point. They are pendulous, and, therefore, it will not grow in any other position but hanging from a block of wood. The flowers are large and beautiful, frequently each 3 inches across, but standing upon short peduncles near the base of the leaves. They have a light yellow ground colour, freely spotted reddish-brown; the lip is of a darker yellow, streaked and spotted in the same manner as the sepals and petals. These are produced either singly or in pairs, and more rarely three are produced upon the same stem, and they are very fragrant. Now, have I not said enough to induce my readers to grow this plant?

S. HADWENI is a different plant, but of the same habit. Its leaves, however, are seldom more than a foot long, but sometimes they reach 18 inches. The flowers are more erect than the previously named kind, the colours much the same as Steell, but less bright and showy. The lip is culate, white or pale-yellow, spotted with flesh colour. It is a very beautiful plant, and, as well as Steell, should be grown by all having the convenience.

MATT. BRAMBLE.

DENDROBIUMS CRYSTALLINUM AND BENSONIÆ.

FLOWERS of the first species come from "J. Acstin," asking to know something about it? This plant was introduced by the Messrs. Veitch, of Chelsea, and it was first flowered by them about twenty-five years ago. I suppose it is one of Mr. Parish's discoveries, or, perhaps, it was one of the finds of Colonel Benson; at any rate, it comes from the mountains in Burma, which is the great country for beautiful Dendrobies. I recently obtained a flower from a celebrated collection, so that I have no hesitation in naming it, which otherwise I might have had some hesitation in doing, for it has become rare in English collections. "J. A." tells me he has two plants that grow out of a lot of D. Bensoniæ, which is not doing well with him; but this kind, of which he sends me two flowers, grows kindly and well. This shows that there is no reason why the D. Bensoniæ should not also do kindly; but perhaps you have starved it from want of water during the winter season. I have found that this plant thrives best in very small pots, and these should be well drained and the roots lightly covered with Sphagnum Moss, and also I have found it to dislike being disturbed; therefore, I generally leave them in the same pots for years, merely giving them a little fresh Moss each spring; but, then, I grow these plants cool in the winter, and just moist enough to keep the bulbs in a nice, plump condition. The thermometer may run down to 55 degs. at night without doing them any harm. Most of my friends and neighbours winter this species in 10 degs. more heat and keep it thoroughly dry, so that the bulbs wither, and each year as it comes round the plants get smaller, until they give up the ghost and depart; and I expect this has been the cause why D. crystallinum has become so rare. It should be grown in small hanging-baskets, for when it grows well the stem-like bulbs attain a length of about 18 inches, and they become pendulous. Let the pans or baskets be well drained, and do not cover the roots with too great an amount of soil. During the summer months let the plant have an abundance of

water, both to its roots and overhead, from the syringe; and if the plants be well potted, the drainage will not allow these plants to suffer from overwatering; and in the winter rest them cool, keeping them just fairly moist. This is a very pretty species. In the flower now before me, which is over 2 inches across, the sepals and petals are waxy-white, the petals being broadest and tipped with purple; the lip is yellow at the base, in front of which comes a zone of white, tipped with purple, and if you take a good, powerful glass you will see the point which its name is derived from, for the anther-case is furnished with numerous crystalline points.

MATT. BRAMBLE.

ONCIDIUM SPHEGIFERUM.

A PORTION of a scape of this species comes to me from "E. Kavanagh" for a name, &c. Well, this plant is one of a natural group of Orchids known as belonging to the section pulvinatum. It is a plant with a stout, oval pseudo bulb, with somewhat sharp edges, bearing a single pale-green leathery leaf, which, when mature, measures some 9 inches long. It makes a long branching spike of bloom, which oftentimes climbs to 4 feet in length, bearing many flowers. It differs from pulvinatum in the long claw to its lip, whilst the bright orange blossoms readily distinguish it from the group to which it belongs.

remained scarce for some time; but it may have been mixed with *O. divaricatum* and *O. pulvinatum*, and thus the right name of the plant only was lost or hidden; but the flowers that came to me from "E. Kavanagh" are of the true plant, having the tips of the sepals and petals rich orange-yellow, their bases being stained with reddish-orange; the lip is somewhat fiddle-shaped, three-lobed, side lobes spreading denticulate at the edges, the front lobe with a long claw, the blade lobed in front, and with the edge plain, the whole being of a light-orange with a papillose crest. This is the plant which I think I am quite right in saying is the true *sphagiferum* of Lindley, and I hope my friend will use his care to keep it, and to keep it well distinguished by a label, which I am sorry to say I have not found to be largely used in his part of the kingdom. It will grow very well with other stove-plants, requiring only a little extra care to keep the plant just nicely moist, and never letting the thermometer fall below 55 degs.

MATT. BRAMBLE.

THE KITCHEN GARDEN.

CARROTS AND THEIR CULTURE.

LAND that has been freshly manured is not suitable for Carrots. It causes the roots to fork

roots are in a manure-heap, is most likely the cause of the fruits being unsatisfactory, or it may be that they do not get enough. Cucumbers are moisture-loving subjects when the drainage is perfect, and it is surprising what a quantity of water they will take when growing freely. Too heavy a crop is also the cause of failure. The plants are crippled, and must then show the want of strength in some way. Some varieties are so free as to set the fruit in clusters of three and more at one joint. If the plants are allowed to continue doing this, little wonder need then be expressed if they exhibit signs of distress. Thin the fruit to one at a joint where they come in clusters. Want of warmth in a regular manner would cause the fruit to turn yellow, or there may be some objectionable matter in the soil, or too strong a dose of some powerful stimulant may have been given to them. From the foregoing reasons it will be seen there are many things to account for the defects which the fruit exhibits. Water that is tepid ought always to be used. Cold water direct from tanks, underground wells, or from water-companies' pipes should never be given to Cucumbers before airing it, or warming it in some way. The regulation of the growth is an important detail in culture. The shoots ought never to become crowded so much that the leaves are rendered weak and unable to perform their natural functions. During summer, and when the weather is warm, a little air given to the plants by tilting the lights at the opposite end from which the wind is blowing, about eight o'clock, will be the right method to pursue, increasing it as the outside temperature ascends. A thermometer in the frame, and kept at about 70 degs., with air admitted, is a good guide.—S. P.

4143.—Tomatoes not setting. — Hackwood Park is a better setter than Ham Green, and produces larger trusses; but than you do not get the quality in the former that the latter possesses. The weather has been very trying for Tomatoes of late, at least, where grown under glass; it has been absolutely necessary to ventilate as freely as possible, and what with the wind, the sun, and the extremely dry atmosphere, it has been almost impossible to keep the plants moist enough to enable them to set all their blooms. Such, at least, has been my experience, and I have never known the fruit set so badly before under glass. Try syringing the plants twice or thrice daily.—E. C. R.

A note on Potato disease.

—Readers of GARDENING who have not read particulars of the new remedy for Potato disease may be interested in this note. The present year, so far, has been most favourable to this crop, but, of course, one never knows if a long spell of rain will ensue, bringing with it a repetition of the Potato disease. Doubtless many readers of this journal have acres of Potatoes in their keeping, and it is therefore important for them to know that the Bouille Bordelaise is an excellent safeguard against the disease. The French were amongst the first to undertake experiments with this preparation on a large scale, these being under the direction of the great French chemist, Dr. Aimé Girard. Large seed firms in England made experiments, and I personally saw those of Messrs. J. Carter and Co., High Holborn, carried out. I was much struck with the efficacy of the treatment, and the experiment was made on a field of less than an acre. Ten long double rows were planted on April 8th, last year, and the drills 36 inches apart. This permits of the sun's rays penetrating the bed. Now the mixture used to dress the various plots was called Bouille Bordelaise, and made up of 22 lb. of sulphate of copper, 22 lb. of unslaked lime, and 100 gallons of water. This piece of ground was split up into four portions, so that two could be dressed, and the others not touched at all. The preparation gives above sniffes for 1-acre of Potatoes. It may be interesting to mention that the sulphate of copper used was of



OUR READERS' ILLUSTRATION: Carrot "Market Favourite." Engraved for GARDENING ILLUSTRATED from a photograph sent by Mr. N. Blake, Bedford.

Curiously enough, I have seen this plant under the names of *O. divaricatum*, and also of *O. pulvinatum* and *O. sphagiferum*, all in one collection, and when I had separated the last-named plant from its mixed and entangled state, and made the other names apply to their right plants, the owner of the Orchids, instead of thanking me for my trouble, simply had the impudence to tell me it was all very well for me to say such and such was the case, but he very much doubted if I knew anything about it, and he wished that he had not got me to pull them about; to which I replied that I could soon put matters straight, which I did by taking my names out of the pots, washed him good-day, and have never since paid him a visit. This was about three years ago, and as the owner is a reader of GARDENING, he may learn why I have never made a call since the time when he asked me to help him out of the muddle he had got into with his plants. One likes to be treated with civility, and generally gets it, too, for there is a sort of freemasonry amongst lovers of plants and natural history, which soon begets friendship; but now and again one comes in contact with a man pretending to love these things, and one finds out that is not really so. I have never until now been asked about this species since, or I should in all probability have recorded the circumstance. This plant was cultivated by the Masars, Loddiges fifty years ago; but it

and the Carrots to grow large and coarse. We always give our Carrot bed a good dressing of charred material from the rubbish-heap, mixed with refuse soil from the potting-shed. This is applied after the ground has been deeply cultivated in winter to the depth of several inches, and come time when the surface is dry it is forked in. If maggot is dreaded, a good top-dressing of soot and lime is given at the same time. The middle of April is quite time enough to sow the seeds, and the drill system is the best because of the facilities thus afforded for surface stirring. Many of the principal seed firms now pass Carrot seeds through a machine, which effectually clears away their beard, and makes their distribution when sown regular and easy; but where this is not done, rubbing the seeds between the hands with a little sand intermixed will effectually separate them. Draw the drills half an inch deep and 15 inches apart. Firm the land well before sowing if dry. And Carrots should not be sown in wet weather; better wait till the surface is dry. The best kinds for the main crop are the half-long Carontan and James' Intermediate. A Carrot largely grown for sale is the one here illustrated and known as Market Favourite; it appears to be a very well selected form of the Red Intermediate. H.

4144.—Unhealthy Cucumbers.—Too much moisture at the roots, especially when the

98 per cent. purity, and the Macleesfield patent sulphate of copper. The first and third quarters were dressed with the Bouille Bordelaise on July 11th and August 2nd, and the second and fourth left undressed. Both under and upper surfaces of the leaf were thoroughly dressed with the preparation, and the results were most gratifying. In those plots left untouched the disease appeared early in September. In the dressed plots the weight of the tubers was 58 cwt., whilst in those undressed it was 39 cwt. 2 lb.; whilst the unsoaked tubers in the dressed plots amounted only to 11 lb., in those undressed it came to 6 cwt. 3 qr. 11 lb. So far as sound tubers went, there were about 2 tons per acre more than in the undressed portion. The two plots, it must be remembered, were less than half an acre, and the tubers were of better quality. This is a good proof of the great value of this preparation for the prevention of the Potato disease, and there is no great expense attending it. Those, therefore, in past years who have lost much of their Potato crop through the disease should make a note of the above particulars.—V. C.

4132.—Treatment of Seakale.—If the crowns were all cut over in the usual way nothing more is needed beyond thinning out a weakly one here and there where crowded, to give those remaining efficient space to develop fully and keep the beds free from weeds, so that the Seakale leaves are not hidden from the light or the soil impoverished by the weeds. If the heads were not cut, flower-stems will have been made, these preventing the crowns developing in a satisfactory manner. However, it is now too late to remedy this evil. The only thing to be done is to cut off the seed-pods, which will relieve the plants of some strain attendant on the production of the seed-pods.—S. P.

—When cutting ceased in spring the old growth should have been trimmed off close to the ground, and the young shoots thinned to one or two to each crown. It is too late to do this now with any prospect of getting strong growth this season.—E. H.

4126.—Tomatoes sporting.—This is a singular term to apply to what is a very common occurrence in the case of Tomato-flowers. The first flower formed on the earliest bunch is invariably malformed, and should always be pinched out. These deformed blooms do not often appear in the succeeding trusses, and if they do the fruit is not so deeply grooved and ugly, as the first one would be if allowed to remain. The second trouble you mention is as common as the first, about which you need not trouble farther than to pinch off the growth as soon as you see it.—J. C. C.

—The central blossom in a cluster is often abnormal in size, and if permitted to remain will produce a rough, ugly fruit. These blossoms should be pinched off. The Old Red often produces blooms of this character. It is not in common for leaves to form at the end of the truss of bloom. The leaves should be removed.—E. H.

4158.—Tomato-leaves injured.—If the plants show signs of pushing into growth again I should let them alone, especially as there is some fruit on them, and this you say is uninjured. If the tops are killed or crippled out them back to sound wood, and take up a strong shoot from each plant. A couple of waterings with a solution of nitrate of soda or sulphate of ammonia, with an interval of a week between, will greatly help the plants to start into growth again. Do not exceed an ounce to the gallon, and syringe with pure water directly afterwards, or the young growth will be scalded.—B. C. R.

—It is a serious misfortune when the leaves of a plant are destroyed in the way indicated, but if the plants are strong and the stems uninjured they will soon break into growth again.—E. H.

4153.—Tomatoes in a greenhouse.—I should fancy the cracking was, to some extent at least, caused by the dry weather, which has a tendency to harden the skins before the fruit has swelled to its full size. Perhaps the plants get rather too much water; if they are planted out in beds a soaking twice or thrice a week would be quite sufficient.—B. C. R.

—The most likely cause of cracking is too much water and not sufficient ventilation. A period of liberal treatment following close upon a time of dryness at the root may cause cracking.—E. H.

4121.—English and foreign Tomatoes.—Tomatoes grown in the open air in a warm and sunny climate possess rather more substance and a somewhat fuller flavour than those of the same kind produced under glass in this country; but then the foreign growers cultivate as a rule

very inferior varieties, though a good deal of improvement has taken place in this respect during the last two or three years. It is this, in conjunction that the fruit has to be gathered while almost green and ripens in transit, that renders the foreign fruit so inferior to English. Most of the Tomatoes grown outside have also a very thick and tough skin, and on the whole it would be hard to beat a good English Tomato, grown under glass in a natural manner—i.e., with plenty of fresh air and not too much feeding with artificial manures.—B. C. R.

—Neither Tomatoes, nor any other kind of fruit from abroad are superior or even equal to English-grown produce when grown under glass by first-rate culture, no matter where tested. Those who think differently have never tested first-rate fruit, such as is commonly produced in English private gardens, where things are done well.—E. H.

4150.—Mushroom bed.—The manure was not in the right condition, or the bed was not spawned at the right moment, or the Mushrooms would not have required eleven or twelve weeks to appear. Although the bed may be kept moist on the top, the fact of the Mushrooms coming up brown and withered points to the fact of the beds being dry inside. Examine the manure in several places 6 inches deep, and if found to be dry well soak it with tepid water, and again cover the bed with litter to prevent evaporation of the moisture.—S. P.

4108.—Herbs for winter.—July and August are the best months for drying Herbs, taking them when they have reached their fullest development; cut them when quite dry, tie in small bunches and hang up in an open shed where the air can circulate freely through the bunches. This is better than drying in the sun, as, drying gradually, they retain their full flavour. When thoroughly dried they may be rubbed or broken up fine, and kept in wide-mouthed bottles till required for use. Cooks often dry Herbs spread out thinly on a shelf in the kitchen, and bottle when thoroughly dry.—E. H.

4126.—Hard water.—Hard water certainly checks the growth of plants, especially where these are growing under the protection of glass, and, therefore, under artificial aid, more particularly subjects that are growing in heat. Soft water is by far the best for any kind of vegetation. It is not possible to grow for more than a short time such plants as Azaleas, Heaths, or Camellias with the aid of hard water only. I have no experience of urtic acid; but common washing soda, used at the rate of $\frac{1}{2}$ lb. to 36 gallons of water, previously dissolving the soda in hot water, softens it if allowed to stand twenty-four hours, and also acts as a stimulant to the plants. Water is easily softened in this way by the aid of two ordinary petroleum-casks, first turning the inside of each to remove the taint of the oil. The sediment which sinks to the bottom ought not to be used, of course. Where a larger quantity is required Anticalcaire, commonly called milk of lime, gives the least trouble in preparation; 1 lb. will be sufficient for 250 gallons of water. All that is required is to dissolve the powder in the bulk of water by stirring it well, when the chalk will be precipitated to the bottom of the tank and the water rendered soft. Even if lime in excess be added to chalk-water, the water becomes turbid, and the carbonate of lime, formerly held in solution, is precipitated, rendering the whole soft. In this way ordinary quick-lime is valuable as a softening agent. Water that is hard is all the better if exposed as much as possible to the full blaze of the sun.—S. P.

—Yes; this is very unsuitable for garden purposes, and if used frequently, for pot plants especially, will soon be found to stop their growth almost entirely. The best way to treat it is to expose it in open shallow tanks to the action of the sun for a day or two at least, and, if possible, immerse still. I should not like to use nitric acid, but a little soda dissolved in the water precipitates a lot of the chalk, and the preparation known as "Anticalcaire" softens it still more effectually.—B. C. R.

4107.—Removing ties and grafting-wax.—The ties may be loosened when the grafts have started into growth. The clay or wax will fall off when the wood begins to swell, but if not it may be removed, as it is not required after the grafts are well established.—E. H.

HOUSE & WINDOW GARDENING.

PERPETUAL-FLOWERING BEGONIAS FOR A ROOM.

THESE Begonias, with fibrous-roots, are perhaps more suitable for room-culture than any other section of that valuable family of plants; for they blossom almost continually, both summer and winter, only requiring to be cut back into shape and repotted to throw out again a mass of lovely flowers, which stand well in a window, and are also valuable for cutting. The well known white variety, *B. semperflorens*, has now been greatly improved, and *B. semperflorens* (Duchess of Edinburgh), lately sent out by Sutton, has flowers of soft pink, twice the size of those of the original variety, borne in as great profusion. *B. s.* (Snowflake), too, is an improvement on the old *semperflorens*, being extremely like the parent-plant, only with much larger blossoms; but *B. semperflorens* *etio-purpurea* is a splendid plant, the foliage being so very well marked with purple and bronze, which harmonise delightfully with its bright-red flowers. *B. s. carinata gigantea* is remarkable for the enormous size of the racemes of bloom, which sometimes reach 1 foot across; and as the flowers are carmine the effect is very handsome. *B. s. John Heal*, also bright-rose colour, has fine flowers, which last a long time on the plant, and do not easily drop, as some Begonia-heads are apt to do. This is one of the best of the improved Perpetual Begonias, all of which have larger flowers than their progenitors. Plants procured now, having been struck from cuttings in early spring, should be placed in 4-inch or 5-inch pots, well drained, using a good compost of leaf-mould and turfy mould, with a little sand, and a sprinkling of soot. They can be grown on in a sunny window, as near the glass as possible, turning them round often, so as to prevent them from growing on one side more than the other. When the pots are full of roots the plants may have a slight shift, when they should begin to bloom. I. L. R.

CARNATIONS FOR A WINDOW.

THESE favourite flowers, which often rank next to the Rose, the queen of flowers, in public estimation, are usually grown, at this time of year, in borders or beds. But there is no reason why those who have no garden, and yet wish for Carnations, should not grow them in pots, for they are easily managed in this way, and even bear transplanting from a border just as they are coming into bloom, without any injury if the operation be carefully performed, so that their thick ball of roots is left intact. Having arranged plenty of drainage and a little rich light compost in a pot which is suited to the size of the plant (it must not be too large), the Carnation, having been thoroughly watered the previous evening, can be raised with a small spade, and placed in the pot, filling in the interstices with the same compost of loam, leaf-mould, soot in small quantities, and enough sand to make the whole light. Room should be left at the top for a thorough supply of water, and the plants should stand in a cool, shady place for a few days. It may then be placed in the window, where it will proceed to open its buds exactly as though it were in the border, filling the room with its delicate fragrance. Cuttings of Carnations taken now will root strongly before the winter, and are easily grown without a garden or greenhouse. They should be inserted singly (after trimming off the lower leaves to the depth of 2 inches), each in a small pot, well drained, full of very sandy soil without any trace of manure. These pots, each containing a cutting, should stand in a cutting-box—i.e., a deal box 10 inches or 12 inches deep, such as can be bought at the grocer's for a few pence—on a layer of fine ashes, which must be constantly kept damp. Cover them with a few pieces of glass, and keep them in the shade out-of-doors (on the leads, or in a back garden), or in a cool room, keeping them close—i.e., without much air—for the first month, after which the glass can be gradually removed, until the little plants are quite hardened off. They may then in September receive a slight shift, giving them still small pots but a rather compact soil. They will then stand safely through the winter in the open air, their pots

being covered with fine ashes. In the case of heavy snow, however, it may be well to give them the shelter of a box turned over them, as though quite hardy, frozen snow often rots their stems and foliage, after crushing them by its weight. They can also be wintered in a room without a fire if more convenient; but they must have an ample supply of light and air daily, as coddling is the one thing they will not stand. Repotted in March, giving them good compost and slightly larger pots, they will flower early if placed in a sunny window with plenty of air; and by means of keeping some of them entirely out-of-doors a succession of delicious blooms can be had throughout the summer. I. L. R.

BEST TABLE PLANTS.

Among the best of table plants are the old White Azalea indica and the variety called Fielder's White, grown in the form of low, loose bushes, as shown in the annexed cut. They look exceedingly well placed in vases, either for general room or dinner-table decoration.

FOLIAGE PLANTS FOR ROOMS.

During the hottest summer months flowering plants are, as a rule, very transient in their beauty, especially when employed for indoor

decorative plants, but they require a warm house when the tubers are started into growth in spring, and a stove temperature to keep the tubers cool during winter, but after they are started into growth in spring they may be gradually inured to a cool temperature, and when properly hardened off are wonderfully effective for decorations of any kind. Crotons in great variety are amongst the most beautiful of all exotic plants, very graceful in growth, richly-coloured foliage, and capable of sustaining a large load of flowers from a small pot; few plants can equal well-grown Crotons. Coleus are especially summer plants, for they delight in heat, and being of very rapid growth they are very much used for decorations, as the brilliance of their leaf-colouring rivals the most showy of flowering plants; they are very readily increased by cuttings. Dracaenas are not only effective, but they withstand the trying ordeal of indoor decoration as well as any class of plants. Some of the very brilliant-coloured leaf Dracaenas require a high temperature, but many of the green and bronze-leaved sorts are quite at home in the greenhouse. They are readily increased by root cuttings, or by pieces of the stems of old plants cut up into lengths, and plunged in a brick bottom-heat. Ferns, both native and exotic, are a host in themselves. Nothing can be more cool and inviting than the verdant

FRUIT.

INSIDE BORDERS FOR VINES.

THERE will always be a difference of opinion as to the superiority of inside borders over those outside, though it would appear that very many gardeners are somewhat shaken in their old prejudices against the former. That outside borders are the safest and best, as far as amateurs and either careless or inexperienced gardeners are concerned, there is no disputing, but that they are to be recommended generally is quite another matter. It is very certain that they are unsuited for the earliest Vines, and equally so that Grapes with their roots in an inside border hang longer than is the case when the roots are wholly or largely outside. I hold that far too much has been made of the Vine's tendency to form roots the most freely and extensively in outside borders, and the originator of the practice of forming both inside and outside borders has much to answer for. It is a poor and also an expensive way out of what to many is a dilemma. Either the roots ought to be rigidly confined to an inside border, or else they ought to be kept outside altogether. Many people have taken a vast amount of pains with the inside border under the impression that they were greatly benefiting the Vines thereby, only to find that the greater part of the active roots is in the outside border. Then, because the discovery is made that the roots have a predilection for the outside, the conclusion was arrived at that it is the best place for them. I repeat was arrived at, the past tense being most applicable in this case for the simple reason that we are becoming more enlightened in the matter. The effects of the very wet summer and autumn of 1891 were too apparent in the case of many Vines with their roots largely or wholly in outside borders, bunches being too few and the quality far from satisfactory. There was also a weakness about the growth, the wood not colouring or ripening at all satisfactorily, all of which, I think, may safely be attributed to the badly-saturated borders. Outside borders are largely at the mercy of all weathers. If we take precautions to ward off excessive rainfall, heavy snows and severe frosts, these very precautionary measures may easily do more harm than good; at any rate, such has been my experience, while if left quite uncovered, saturation at critical periods may work untold ill. In the case of two vineries under my charge the roots are wholly and unavoidably outside, and we have to proceed very cautiously to work to avoid failure. Last season we were under the necessity of giving a second thorough soaking of water, the rainfall having been unprecedentedly low up to midsummer. The very next day thunderstorms were threatened, and although the gardens and country generally wanted rain very badly, to me it was a positive relief that we escaped the storms at that time. Had a soaking rain fallen on our already thoroughly moistened borders, shanking would have commenced in a few hours. I mention this in order to illustrate the difficulties under which those in charge of outside borders labour. In a wet season there was no preventing saturation, and shanking took place in the case of Black Hamburgh very badly, while the Muscat of Alexandria, Gros Ouillemo, Madreshead Court, and Gros Maroc also behaved rather unsatisfactorily in that respect. Not being obliged to start the Vines very early last year, nothing approaching a failure occurred; but the case was very different in other gardens where Vines in outside borders were started early. According to my experience, any forcing in the case of Vines with their roots, or what are alive of them, in a saturated outside border must be very cautious indeed, or otherwise tendrils and air-roots, rather than bunches, will be the order of the day. What may be considered the strongest argument against inside borders is the fact that they must be given abundances of water, or far more than is ever considered necessary for those outside. That they do require to be kept properly moistened there is no denying, but that they require such immense quantities of water as some writers advise should be applied I unhesitatingly deny. No hard and fast line can be laid down as to the quantity an inside border should require, so much depending upon the quality of



White Azalea indica as a table plant.

decorations; in fact, many of the most beautiful of the summer-flowering plants drop the blooms to such an extent that they are practically useless for taking into the dwelling-house; and foliage plants, either green or variegated, form the staple of decorations. The following are sure to give satisfaction—viz,

ARALIA SIEBOLDI is probably one of the very best plants for all-the-year-round decorations, as it withstands heat or cold that would prove fatal to many more expensive, but certainly not more useful or beautiful, plants, and quite a large plant can be grown in a comparatively small pot. This is very readily increased by seeds or cuttings, but I prefer seedlings. Aralia Sieboldi variegata is the exact counterpart of the former, only that the foliage is very beautifully variegated. Aspidistra lurida variegata (Parfour Palm) is another excellent plant—in fact, beautiful specimens may be found grown entirely in dwelling rooms. It requires an intermediate temperature, and is increased by division. Araucaria excelsa (Norfolk Island Pine) is one of the most symmetrical plants grown naturally that can be imagined, the tiers of branches spreading out like the ribs of an umbrella, and of the most lovely feathery green. It may be utilised for greenhouse or conservatory when not employed for indoor decoration. Caladium, in great variety, make beautiful de-

green of Ferns, and amongst them can be found varieties suited to the smallest vases for ladies' dressing-room tables or for the massive jars that are used in entrance halls; they thrive in the subdued light of dwelling-rooms. Ficus elastica (the India-rubber-plant), with its thick, leathery foliage, is exceptionally well suited for decorative purposes. Young plants are beautiful for vases, a sponging to remove the dust occasionally keeping them healthy for a long period. New Zealand Flax is a fine, stately plant, with sword-like leaves, very effective for large vases. Its variegated form is exceptionally bright. Palms of many kinds suitable for cold, intermediate, or stove temperature, are the most stately of foliage plants, and being vigorous rooting subjects are able to live where more tender plants succumb. Thousands of Latanias, Seafortias, Kentias, and other popular Palms are sold every year by some of the large nurserymen. JAMES GROOM, Gosport.

4161.—Plants for Sheffield.—You can obtain plants of several varieties of Thrift from almost any good nurseryman. Give the plants poor sandy soil, and then they will not grow so strong.—E. C. R.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of any rare flowers and good fruits and vegetables for drawing. The drawings so made will be returned in the best manner, and will appear in due course in GARDENING ILLUSTRATED.

the soil need and the extent of the Vine's root-action, but there ought to be no mistake about when water should be applied. Never ensue should the soil become sufficiently dry to crumble freely in the hand when tested. Once let the border become so dry as that, and re-moistening may easily exhaust the so many thousand gellons we sometimes hear of being needed at one watering. Dryness ought always to be anticipated, and not waited for, as very often happens. Why should a border be treated differently to soil enclosed in a pot? In the latter instance if we wait till it gets thoroughly dry or sufficiently so to shrink considerably, several lots of water have to be given and very much wasted before it can be properly re-moistened. It is exactly the same with inside borders. Having to use sufficient water to flush the drains underneath is simply so much labour and fertility wasted, the water carrying away much that ought to remain in a border. My contention is that if the water is timely applied a very little will go a long way. All have not a tank of soft water conveniently near, and lately water of any kind has been very scarce in some gardens hereabouts, but surely enough is forthcoming in most cases to water inside Vine borders. Our soft-water tanks were soon exhausted this season, and cold spring or well water I strongly object to for watering. My way out of the difficulty has been to fill a galvanized iron tank, holding about 40 gallons, and this being set where it got the benefit of the heat from two hot-water pipes was well warmed in a few hours, while the addition of a 10-inch potful of soot, worked up into a paste, rendered it soft and otherwise beneficial to the Vines. Four of these tanks thus prepared are found ample for a Vine border 34 foot by 14 feet. This border has been made for about nine years, and wholly supports twelve strong Vines. Undoubtedly, if the inside borders are neglected, that is to say, are very seldom loosened on the surface or renewed, top dressed or mulched in any way, water also being too seldom applied, the Vines would do better with their roots outside. It must also be conceded that it is no easy matter to confine the roots wholly to an inside border, no matter how well the latter is treated, but, all the same, I would strongly recommend all intending planters to make the attempt. All the water of the roof of a vinery ought also to be stored in tanks, these being necessarily or preferably outside, as they would take up too much room in all but the largest houses, handy pumps and galvanized iron tanks for warming the water being fixed inside.

W.

PEACH-TREES AFTER FORCING.

This is the time when the trees are apt to get neglected, either from want of water at the roots or through being overrun with insects—two evils the grower must guard against. Trees which are neglected at this time will never succeed well, for if insects should gain the upper hand the premature loss of foliage will be the result, and will surely lead to bud-dropping later on. There cannot be any question as to the advisability of exposing the trees as much as possible, but I believe that the wood of these early trees can be overripened. The buds become, as it were, too plump, and although this may be looked upon by many people as a criterion of the trees being in a very satisfactory condition, I do not think so. If the wood be fairly well ripened, the longer the leaves are retained in reason the better. Trees on open wells rarely lose their leaves very early, as generally it is the latter part of November, or even into December before they all part readily; yet this does not prevent the trees from forming fruit-buds and flowering most profusely. In many of the more modern structures it is quite evident that insufficient ventilation is provided. The result of this is that the structures remain very hot and dry throughout warm days. Although it is only on rare occasions nowadays that the roof lights of early Peach-houses can be removed bodily throughout the summer months, the least which can be done is to let down the roof lights as far as they will go, and also open the front ventilators to the same extent. If the borders be kept well moistened, and the foliage also well syringed two or three times a week, the leaves will remain fresh to the last. When leaves commence to fall early it is a sure sign

that something is wrong, either through drought or insect agency. Red-spider is one of the worst insects to contend against, this very quickly sucking the life's blood out of the leaves, with the result of their dropping very prematurely. With any insects present, care must be taken in the use of insecticides, or the remedy will prove as bad as the evil, the leaves dropping very quickly. If red spider should be present, the safest remedy is to work a double handful of sulphur into a 3-gallon can of oof water. By working the sulphur through a piece of muslin it mixes readily with the water, and may be evenly distributed over the foliage through a syringe. This should be left on for a few days, and the trees heavily syringed afterwards. Tobacco-water is a good remedy for thrips, but I am also very partial to a decoction of Quassia chips and soft soap. A pound of each boiled for ten minutes, and afterwards strained, will be sufficient to make a dozen or fourteen gallons. I cannot speak so favourably of the Quassia extract, and which I was led to try after reading glowing reports in its favour. This season I have given it a fair trial according to directions for a slight attack of fly. It killed the fly certainly, but it caused many leaves to fall from both a Pine-apple and Victoria Nectarine. Peach and Nectarine leaves are certainly very sensitive. The old remedies of Tobacco-water, Gishrat compound, and the decoction of Quassia chips and soft-soap are hard to beat. Where scale is present little can be done until the leaves are on the point of falling, for any insecticide applied strong enough would cause more leaves to fall prematurely than the graver bargained for, but the remedies for other insects would check its progress until more vigorous measures could be adapted. With these early trees the cutting out of the old fruiting wood or such as is not required for extension should be deferred until later on in the season, as, unlike the later trees, the extra wood would be of more benefit than otherwise. Also pay particular attention to the watering, not surface driplets, but thorough soakings, applying them through a mulch of stable litter, this latter being of more benefit than layers of cow manure and such like, these closing up the surface and so preventing that aeration so essential for the well-being of the trees. If the soil is known to be rather exhausted or of a sandy description, then frequent applications of clarified liquid would be of benefit, but any indiscriminate use of liquid-manure is positively injurious, it having the effect of souring the soil. Rain or pond water is the best, sufficient being given to thoroughly moisten the whole border. By attending to the above rules in the cultivation of Peaches under glass the trees will remain healthy and retain their leaves to the last. Instead of the early dropping of the leaves being a criterion that it is through the wood being in a satisfactory condition, it is just the reverse.

H.

4175.—**A lean to vinery.**—This is a case of scorching of the leaves by the sun, caused principally through the growth being too near the glass. A distance of 9 inches between the wires and the glass is not enough; it should be 14 inches. Lower the Vine-rods temporarily until the autumn, when you can have them pruned and the wires brought further from the glass. Your management in other respects is all that can be desired, and your enquiry clear and to the point.—J. C. C.

— Except that the young leaves were close against the glass and were wet at the time, the sun was shining upon them before air was admitted. I should not say the nearness to the glass of the wires is the absolute cause of the mischief complained of. Undoubtedly, though 9 inches does not afford enough space for the foliage, nothing less than 17 inches is sufficient to do justice to the Vines, especially if the growth is strong. I should be inclined to think the roots had become dry previous to watering them, or that the temperature inside has become too much heated before admitting air. Either of these causes would account for the injury to the leaves. It is surprising how quickly the soil becomes dry in a new border, especially if it is raised above the natural ground level, and drained also.—S. P.

4176.—**Treatment of Raspberries.**—Do not transplant any of the young canes yet.

the weather is too hot and dry; October is the best month. You must cut all the old canes right away as soon as they have done fruiting, and thin the young ones (of this year) out to not more than five to each root, or as many as can comfortably be found room for; this may be done now, leaving the strongest only. It is a great mistake to crowd the canes too much; unless well ripened they will not fruit well, nor will the berries ripen as they should.—B. C. R.

4157.—**Treatment of Vines.**—Heat and moisture in moderation are essential to the well-being of Vines in a season like the present. But this treatment may easily be carried to excess, especially when mildew is present. A drier, more breezing condition of the atmosphere will be better if the mildew is to be cleared out. At the same time see that the roots are not too dry. Dryness at the root is often a cause of mildew.—E. H.

4147.—**Treatment of Melons.**—Instead of pinching in the leader it ought to be allowed to grow uninterruptedly until the top of the trellis is reached, or, say, for about 5 feet. Side shoots will push from the joints below, quite sufficient to give a full crop of fruit. If they do not promise to grow then pinch the leader for the purpose of forcing out these side growths. The short side shoots are those which show fruit directly they have made two leaves. The female blossom is easily detected, having a small fruit immediately below the blossom. The males are simply flowers, only they are generally borne on the main stem. It is absolutely necessary to fertilise them to make sure of a crop. It is a simple matter: About the middle of the day, when the flowers are dry, pick off a male bloom from the same plant that the seed of the future fruit may be the same, so as to avoid intercrossing of varieties. Remove the petals, exposing the pistil with the pollen attached, place the point of the pistil amongst the stamens of the female blossom, fertilising them with the pollen. In a day or two, if the impregnation is satisfactory, the fruit will commence to swell. It is wise to fertilise all the blooms on one plant at the same time, a better general swelling of the crop is obtained. Three full-sized fruit of the large-growing kinds are sufficient to have them of the finest quality. When the blossoms commence to unfold syringing the foliage should be discontinued for a few days until a perfect set is obtained, when it should be resumed twice daily. Melons require much moisture at the roots when growing freely, and the drainage is in perfect condition as it should be; but care should be exercised when pouring the water on the soil not to wet the stem of the plant no more than is necessary, as canker is sometimes caused in consequence, and this is a serious matter to contend with when the plants are swelling a full crop of fruit. Liquid-manure given alternately with clear water when the fruit is swelling freely is a great assistance in producing exhibition fruit. As the fruit exhibits signs of colouring, and approaches the ripening stage, more air is needed and less moisture, both atmospherically and at the roots. The flavour is improved in consequence; but it is a mistake to allow the soil to become quite dry before the fruit is really ripe.—S. P.

4171.—**Fruit-trees, &c.**—The loss of crop has doubtless been caused by spring frosts. This might have been obviated by protection in spring. I dislike narrow houses for Peaches. I have a house with a 12-foot raft, and I never enter the house without wishing the trees had more room. But in the case under consideration it would doubtless pay to cover the wall with glass in some cheap way, making special provision for plenty of ventilation. If possible, it should reach the whole range, though half might have more pipes than the other half; and I should plant the earliest kinds by themselves. Dymond is a good Peach to grow for sale; it is a splendid colour and bears well. Hale's Early is a fortnight earlier. Rivers' Early York is still earlier, but has not taste enough; and Waterloo and Alexander are too uncertain in setting to be recommended on a small, narrow house. Do not neglect Nectarines. I find good Nectarines pay better than Peaches. But Peaches are a rather uncertain source of profit; they are very profitable if you have made a good price one week, and the next be disappointed. Still, on the whole, good fruit does not market in good condition does not fairly well. The competition is

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been in the work now, and every year the prices run lower. There are exceptional times, such as the royal marriage week, for instance, when the leeway can be made up, but, on the whole, this has not been a good season for selling Peaches.—E. H.

— You are not wrong in your ideas, only in some of the details. In the first place, a simple wall plate put on the top of the wall will bring the top of the trees alarmingly near the glass—too near, in fact, as you cannot afford to lose any space on the surface of a wall only 8 feet high. You do not say how you intend to ventilate the house. For a cool house the simplest way of ventilation is that of the Paxtonian system, which has narrow lights running up the roof at equal distances apart, but I should prefer to put a ventilator 1 foot in depth on the top of the wall, using small lights and hanging them on a pivot. This will increase the length of rafter, but it will bring the top of the wall a better distance away from the glass, which is necessary for the good of the trees. A wall 1 foot above ground, and a ventilator the same depth the whole length on the top of the wall along the front, is what you want. The roof I would make up with lights

to attempt to renovate them in this way. If they have been planted more than fifteen years you had better replace them with young ones. If you do the lifting in the autumn shade the roof of the house and keep it close, and syringe the Vines three times a day for a month.—J. C. C.

— The shanking of Grapes in the manner described may arise from more than one cause, and any advice given now will probably be too late to be of much use this season. The Vines lack nourishment, but this may arise through the roots being in a bad state from working in an unamiable soil, or (see this season has been exceptionally dry) the border may be too dry for healthy root action. In the latter case, a good soak with liquid manure, or a dressing of dissolved bones and nitrate of soda, watered in, will be beneficial, and will give increased size to the berries which are not shanked. If the fault arises from the roots being in a cold, deep, undrained border, the only remedy will be root-lifting, and a new border.—E. H.

4127.—Vines in pots.—If Vines which have been kept in pots seven years have never fruited there must be something very wrong in the culture. To obtain fruit from a Vine in a

Persia. I have seen that has on a few fruits, colour purple; it makes a splendid object when in flower.—E. J. VOKES, Kingsworthy.

4151.—Sorts of Apples for grafting.— You ask a very interesting question with regard to the Blenheim Orange Apple, and I am glad to be able to answer you from practical experience of its behavior when grafted on other trees. Your own limited experience points to the same results as mine, that grafted trees—if not too old when operated upon—come into bearing much better than young ones. Two years ago I saw picked 3 bushels of Blenheims from a tree that had only been grafted two years previously. Of course, several seasons were put on—I think fourteen was the number. You need not hesitate to use all the sorts you mention; but I advise that Blenheim Orange predominate if the trees to be grafted are standards. For other forms of trees the others you mention are the best.—J. C. C.

FERNS.

HARE'S-FOOT FERNS (DAVALLIAS).

DAVALLIAS form beautiful ornaments when grown on a Tree-Fern stump, as shown in the accompanying engraving. Indeed, I look upon this as the natural manner of growing them, and when thus treated Davallias make an interesting display in the Fern-house, and relieve it of formality. The plants require ordinary care when treated in this manner, and little else but an abundant supply of water is necessary, and some peat-firn and Sphagnum Moss fastened in the arms or branches of the fern. A pretty example treated in this manner I saw recently in the gardens of Heaton House, Cheekum, and the one here depicted is a charming group. The kind which may be treated in this manner require to be somewhat carefully selected, for many of the species which appear to be small enough to be treated will make enormous fronds if encouraged, and, therefore, although simply magnificent when accommodated upon tall and large stems, they would be considerably out of place planted upon such an example as is here illustrated. The kinds most suitable for the Tree-Fern stumps may be briefly enumerated.

D. PENTAPHYLLA.—A distinct species with fronds some 9 inches or 12 inches long, and, as its name implies, with two pairs of pinnae and a central one, making five. These are broad and bright shining green in colour, paler beneath, the fertile frond slightly contracted. When first placed in the position here indicated, it may appear to be somewhat thin and sparce; but as it grows it will become a fine and telling object in the fernery.

D. DISSECTA is an extremely handsome plant for this purpose, and a very free grower. A form of this, D. DECORA, is also exceptionally beautiful; its fronds are broader and shorter, thus giving them a more distinctly triangular appearance. The typical plant has long creeping rhizomes, which are clothed with large drab-coloured scales, and its fronds are from 1 foot to 2 feet long, and some 8 inches or 9 inches broad.

D. BULLATA.—This in the plant illustrated, and is smaller than the preceding. It is at once distinct, as it casts all its fronds in winter. They are about 1 foot long when the plant is strong and vigorous, but more frequently they are some 8 inches or 9 inches in length, bright shining green in colour, the rhizomas being clothed with reddish-brown scales.

D. CANARIENSIS is also well adapted for this style of culture, but it requires more care to establish it, as it is slower in growth, and the rhizomes do not so readily attach themselves. Moreover, it is a plant which thrives in a cool-house, the other kinds requiring stove temperature. In this plant the fronds are heavy and massive, triangular in outline, and deep-green.

The above named may be accepted as amongst the best of the small-growing kinds, although there are several species of an allied genus (Humata), which are equally adapted for this kind of culture. The large-growing kinds I will reserve for another occasion. J. J.



Hare's-foot Fern (Davallia) growing on a Tree-Fern stump.

4 feet wide. The light will come a trifle dearer than a fixed roof, but lights are always saleable if at any time the house is not wanted, while a fixed roof is not worth much. The pitch of the house will be right enough for Peaches. If you intend to market your fruit, I do not think under the circumstances it will pay to divide and heat the house, seeing how many valuable early sorts of Peaches there are now. Good fruit of Amadeus June and Alexander generally realise a good price. I would not plant any more mid-season varieties, but fill the remaining space with such late sorts as See Eagle and Barrington. Nectarines do not realise so much money as Peaches. The best sorts are Lord Napier and Victorin. If you cannot get the house it will afford plenty of work for the remaining two days your man now has on his hands.—J. C. C.

4117.—Grapes dropping off.—This is a bad case of shanking for which there is no remedy other than lifting the roots and replanting them in a new made border. In such a case as yours I should advise that the lifting be done from the beginning to the middle of October, the Grapes, of course, being (B.C.) viciously removed from the Vines. I am, of course, assuming that the Vines are not too old

pot is quite a simple matter if the plant is well grown in a light position, so that the cane is well grown and ripened. There are certain kinds which fruit better than others. Hamburghs, Sweetwater, Alicante, and Frontignan may be fruited well in pots; but the plants must be well grown, and all the force and strength of the plant directed into a single stem or cane; and it is important that the cane be trained near the glass. One finds it difficult to understand how anyone with even only a rudimentary knowledge of gardening under glass could fail to produce Grapes on pot-Vines for seven years.—E. H.

4125.—Prunus Pissardi.—I have seen this beautiful tree fruit remarkably well. It was about three years ago, as far as I can remember. I am not aware whether the fruit is pleasant to the taste or useful, but it looks as if it would make a good preserve.—C. T.

— This plant ought to bear as freely as our common Plum; but being a native of Persia, the blooms appear so early that most of them are cut off by frosts, being so tender a plant. It would be easy to eat the fruit, but it is of poor quality. The tree is grown mostly for its coloured foliage, much like the leaves of our coloured-leaved Beech. It was named after the artist, Pissard, gardener to the Shah of Persia, and only recently imported to England from

Original from
CITY OF ILLINOIS AT
Hardy Ferns—in many gardens bare
UNION SQUARE CHICAGO
it is impossible to get plants

to grow—at least, not those bearing flowers, and it is in such positions that good use should be made of the many varieties of hardy Ferns. This note is prompted by seeing a very narrow shady border in a suburban garden a perfect sea of foliage from the handsome fronds springing from large clumps of male and hardy Ferns. The only preparation necessary is to first make a good soil for the roots, and, when necessary during the summer months, give a thorough watering, which will promote vigour and fine development of the fronds. It is surprising how well apparently hopeless corners, as regards plant culture, may be made to look when the proper things are selected.—V. C.

4106.—Ferns for show.—There is a large number of Ferns available for exhibition, and you cannot do better than make your selection from the following: *Adiantum cuneatum*, *A. Farleyense*, *Microlepia hirta cristata*, *Davallia Mooreana*, the beautiful *Nephrolepis devalliioides* ferns, the *Gleichenias*, which are often seen at the larger exhibitions in winning collections, and the well-known *Cyathea dealbata*. Several others have recently appeared in GARDENING upon Ferns for an exhibition.—C. T.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of GARDENING, 37, Southampton-street, Covent-garden, London. Letters on business should be sent to the Publishers. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the locality in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appeared.

4183.—Pot-root Dahlias.—Will someone kindly tell me how to propagate pot-root Dahlias?—J. E.

4184.—Shamrock.—Will someone kindly tell me the treatment of a pot of Shamrock, and how long does it last?—F. BROOKER.

4185.—Cracks and dark spots on Tomatoes before ripe.—I shall be glad to know cause of the above.—H. G.

4186.—Budding Briars.—I potted some Briars last October. Would it be to bud them this August with H. P. Rose-buds?—F. G., Devon.

4187.—Bed of Ornamental Thistles.—Which has the best of ornamental Thistles next year. Should like names of good sorts, and when they should be planted?—C. A. B.

4188.—Fear for south-east wall.—Will someone please tell me what kind of tree to grow on a south-east wall in a rather shady position; also what time to plant?—New Subscriber.

4189.—Propagating Birch, &c.—Will someone please to state a good method of propagating Birch, Hazel, and such like trees? Are they usually raised from seed or cuttings?—A. M.

4190.—Camellia cuttings.—I have a Camellia cuttings, struck in water, roots a quarter of an inch long. Will someone please tell me how it should now be treated? I am told Camellia cuttings so struck always die.—M. F.

4191.—Unhealthy Marrows.—In the last few days the leaves of one of my Marrow plants have become covered all over with yellow spots, and warped. Will someone kindly tell me the cause of this, and how to cure it?—AMATEUR.

4192.—Sensitive-plant.—May I ask someone to tell me to management of a Sensitive-plant? I bought one about three months ago, but long will it last, what treatment in winter, and what heat do they require to keep them?—F. BROOKER.

4193.—Roses in a window.—I have two monthly Roses and one Hybrid Perpetual in a window facing the west. They are now in flower. Would someone be so kind as to inform me the best way of keeping them during the winter?—JOSEPH MARTIN.

4194.—Roses for India.—What is the best way of taking Rose-plants to India—by buds, or cuttings, or how otherwise? And how should they be packed; and what Roses best suit a tropical climate—say Bombay and the neighbourhood?—Mrs. E. STORFORD.

4195.—Sowing down a lawn.—The lawn in front of my house was very uneven in surface. I had it dug up the beginning of last winter and sown with fine grass seed in spring, but owing to the drought it has never thriven. Should I sow it again now or wait till next spring?—E. C.

4196.—Onting Laurustinus.—I shall be much obliged if anyone will kindly tell me when I should have Laurustinus cut so as not to lose the bloom? I have a hedge of them which has now grown far too high. My garden is at the seaside, south coast. (Sussex).—G. I. G.

4197.—Pots becoming green.—Will someone kindly inform me the probable cause of pots with plants in being so green on the outside? Is it with too much water, stiff soil, or the hard kilned pots, as they are hard-burnt? Will it injure the plants if not washed off?—YARD.

4198.—Plants for windows.—I have five windows in town, three facing the north, two facing west, and one north-west. In one of the west windows I have three hardy Rose-plants. Would someone please inform me of the best plants for the others, and their management?—JOSEPH MARTIN.

4199.—Treatment of bulbs.—What bulbs do best undisturbed in the ground? What bulbs may be put in in autumn and lifted to spring to make way for bedding plants, and may these same bulbs be used year after year? Do they deteriorate or increase? How are they best stored?—AN AMATEUR.

4200.—Old Vines.—I have two rather old Vines, but still very strong and healthy. There has been a splendid show of Grapes this year. They have been carefully thinned and cared for. Quite lately a blight has appeared upon many of the bunches. Will someone please tell me what has probably gone wrong, and if I can remedy it?—WALLACE.

4201.—Forcing Rhubarb.—Would anyone be so kind as to give me information how to force Rhubarb for market purposes? Were it forced under the stage of a greenhouse, and how much soil and manure are used, and in it placed firmly among it? Are this year's roots lifted out the ground and potted?—HUGH CRANFORD, Easter-Nill, Tollarous.

4202.—Destroying ants.—Will someone kindly advise me how to get rid of an ant's nest? They are in a border by the house, and have been established there for many years, and seem to come from the foundation of the house. I have poured tar on them, and also several times boiling water, but cannot get rid of them. I should feel very obliged if someone could give me a remedy?—ANNIE.

4203.—Potted roses crassipes.—A friend of mine purchased a plant named Potted roses crassipes, an aquatic plant from North America. It has grown so rapidly as to necessitate removal to larger quarters several times, but cannot be induced to flower, although the catalogue account says that it would blossom in a short time. Common name Water Hyacinth. Should be pleased with a few hints to induce it to bloom?—W. J. POLKAR.

4204.—Treatment of Carnations.—My Carnation bed is doing splendidly, but it contains mostly Old Ormeau Carnations. By which means should I obtain most flowers next year—by layering them, and throwing away the parent plant, or by leaving the old plants as they are; or combining both by layering the shoots around the old stem and leaving it? I have one plant only of Gleanin, with but few offshoots; how best to increase the stock?—VIVIANE.

4205.—Treatment of a Passion-flower.—Will "J. C. C." or some other kind reader be good enough to give me some information as to the following? I planted a small Passion-plant last October—was also about 2 inches high—it remained quite green all the winter, but in the spring the top died away, and a young shoot came out from the bottom, and has grown to a height of 8 feet. I want to move it to a more sheltered situation. Would it be better to move it in the autumn or wait until spring, and be sure I prepare the ground?—NEW SUBSCRIBER.

4206.—Grubs in a garden.—I am troubled by grubs eating of my Onions and Carrots, they eat them through about 4-inch under ground, never touching the tops. Upon examination I find close by dark skinned insects, exactly like caterpillars, and rather large. Will someone kindly inform me how to get rid of them, and how when sowing more Onions seed I should so prepare the ground as to stop their depredations? Will suit to the ground do any good, or slaked lime?—ANNIE.

4207.—A remedy wanted.—Will someone kindly give me a cure or tell me the cause of what is commonly called "hives"? I think it must be the bite of some insect which only infrequently finds garden, and is first noticed about June. It irritates the skin and leaves a large blister. None of my family have seen the insect, which must be because it has no roots. Turn it out and see for yourself. Put it in some sand and old mortar-rubbish, and keep it warm in the sun, but do not give it much water—in fact, none at all, until you see it begin to root.—J. J.

4208.—Treatment of Roses, &c.—Last season was my first one with Roses. District, Shooter's Hill. Soil, clay, well prepared. Countess of Rosebery flowered well last year, and true to colour; this year it is the same colour as Dugny Jamin. Why is this? Maurice Bernardin does no good; grows well, but buds do not open properly. My small, although they are all sufferers, being covered with the blisters or rash, some of them that came from a distance being attacked after one day's stay. An answer will greatly oblige.—L. McE.

4209.—Unhealthy Cucumbers.—Would someone kindly tell me what has affected my Cucumber-plants? A short time ago I made up a mound on the top of the stakes of propagating pits in a greenhouse, and planted the said plants, and they grew on very well till last week, when I noticed one of the plants began to die. Thinking it was dry, I gave it some water, but it never held up again, so I cut it down, and I found it was rotten at the collar. I should be glad if anyone could tell me the cause of this going like it? I have some more like it in fruit, and I thought not like to lose them.—A CONSTANT READER.

4210.—Heating a small greenhouse.—I desire to heat my small lean-to greenhouse, 18 feet long, 5 feet wide, 7 feet at back, 5 feet 6 inches at front, facing south, by means of 22 feet of 4-inch of pipe. A wash-house, in which I propose to place the boiler, runs at right angles, and adjoins the end of greenhouse, with its floor level 5 feet below floor-level of greenhouse. I possess a boiler 10 inches by 6 inches, 4 turns 1-inch bore, which I propose setting in a deep brick furnace. My idea is to

build the furnace on floor, starting with a large fire-brick or hurr, and work on the slow combustion principle with-out fire-bars. Will "B. C. E." be good enough to inform me what distance he would allow between bottom of coil and surface of bars? What size furnace he would use, and whether he would construct the same in any special manner?—G. H. W., West Brighton.

4211.—Ground for a Rose garden.—Will anyone tell me how I should set about preparing ground for a Rose garden? The soil where I propose to plant the Roses was originally poor but is now deep and fertile; it is, however, hardly a Rose soil there being very little clay in its composition, for which reason also fruit-trees soon become exhausted and unhealthy if planted there. The ground is exposed to the sun, and floas a sloping position which makes it somewhat dry and more suitable for Tea Roses than Hybrid Perpetuals. I propose to lay it out in large beds and rows of standards, as I want to grow all sorts of Roses there. I have great hopes of success, as in the garden below the slope Roses grow well.—K.

4212.—Artificial manure for a garden.—Will someone recommend any artificial manure for large kitchen garden under following circumstances?—Garden cropped season of 1893 with Potatoes and other roots; season of 1892 with Potatoes and green crops that stand winter; season of 1891 not cropped at all; season of 1890 with usual garden crops. The garden has a large number of fruit-trees (of various standards), which have borne heavily each year. Soil, a heavy loam. No manure has been used since the autumn of 1889 or the spring of 1890. I propose to apply the artificial manure recommended when the Potatoes and other roots are lifted before planting greenstuff. Please state how to apply the manure, and quantity per square yard (super)?—EMMA OZBE.

4213.—Extirpating Horse-radish.—I have ten large my grounds an old brick kiln in which for many years I have been allowed to grow my roots. In autumn last I had it trampled very carefully, but with a dense clay soil the men unvoluntarily left many broken pieces in the soil, which are now developing in small leaves as they spring up. I am having the same pulled up with as much depth of growth as possible. Will this course with perseverance eradicate it, or is there any other known plan to destroy it? Perhaps someone will give me some information as to the best mode of planting a tree of some kind in the centre of a square patch at the proper time for so doing; I also thought of a Rose-tree or two for this patch. I forgot to mention that the ground is rather "clayey." How should I treat it? I planted a Clematis Jackman, I believe, under the kitchen window, facing east; it gets a lot of sun. It thrived well for a week or two, now the leaves seem to droop; the soil is fairly good black soil. Will you say I do?—YVONNE.

4214.—Management of a garden, &c.—I have two pieces of ground (ordinary small back garden size), one piece runs by a wall and faces the north, the second piece is a square patch and faces the south-east. The latter gets a lot of sun, the former piece is shaded by the wall. Can I plant anything now—i.e. what would be suitable and look nice? I should like to plant a tree of some kind in the centre of a square patch at the proper time for so doing; I also thought of a Rose-tree or two for this patch. I forgot to mention that the ground is rather "clayey." How should I treat it? I planted a Clematis Jackman, I believe, under the kitchen window, facing east; it gets a lot of sun. It thrived well for a week or two, now the leaves seem to droop; the soil is fairly good black soil. Will you say I do?—YVONNE.

4215.—Treatment of a Pear tree.—In GARDENING, June 18, I have a question in asked, query 4387, treatment of a Pear-tree, potted six years ago, the leaves in the following week's issue were rather short and concave, but not so full as I could wish. I have a Jargonella Pear-tree, planted some eight or nine years ago, and as a preventive a stone was placed under it to avoid the tap-root, if possible, and about two years ago a trench was dug round it about twenty inches from the stem, to cut off the roots, but this has no effect. There is still the same over-abundant wood-growth, but no fruit this year, although there was a little blossom, and the most fruit of it in one season has been no more than a dozen. Will someone please to state what is the best treatment for it, and when the long shoots should be cut off?—M. M.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

4216.—Ononis (J. M. M.).—I cannot give even a green at the species you have sketched. I am under the impression, however, that the plant you are sketching when you got it at first, and the cause of its falling away, is because it has no roots. Turn it out and see for yourself. Put it in some sand and old mortar-rubbish, and keep it warm in the sun, but do not give it much water—in fact, none at all, until you see it begin to root.—J. J.

4217.—Zygopetalum Clayi (J. B.).—You send a flower of this variety complaining that I did not mention it when speaking of this family a short time ago. Well, it is a hybrid, and these I did not include, and I thought that the Editor would be able to find out the variety you refer to about the finest collection form I have ever seen, the sepals and petals being white of a rich purple, narrowly bordered with green, the lip of a rich and bright violet-purple. It is one of the best hybrids of this family yet raised, which it was by Colonel Clay, at Birkenhead, between Z. orifolium and Z. maxillare, but it varies very considerably in the depth and intensity of its colouring. Yours is a very superb form.—M. B.

4218.—Odontoglossum (Judy).—The flower is Odontoglossum Halli. I should work a little good possibility into the Spharicum form. The position is that which I am told is an excellent thing for them. Indeed, the Belgians appear to be working wonders with this material, but you should not disturb your plants if growing, but report them in the autumn, and they will go on and root and grow before the hot weather sets in another year. You shall have the colours before they flower, but just now I am very much pushed with queries. They should stand in the shade, and have an abundance of air, with a moist atmosphere. I am not in any way alarmed at your asking questions.—H. M. BLOOM.

4219.—Orchid house (John Allen).—I am glad to hear you have a house now up for your Orchids, and I am glad to find you have increased the stock of plants to such an extent, and you have done well in restricting yourself

to the cool kinds. I think, however, you are treading upon stikish ground when you include *Cymbidium* *Lovisaum* and *Odontoglossum vexillarium*, for both like a little more warmth than they can get in a cool-house, but at the present time you would be hot enough. The house should have free air and a cool moist atmosphere, or you will be very apt to get the shrubs on the last-named plant. The *Dendrobium Jamesianum* will thrive with *Odontoglossum*, for although of Indian origin, it comes from a cool part of Burmah, and I saw it doing better than I had previously seen it last season in Messrs. Low's nursery, in a house without any fire-heat at all. At this season you should certainly have your bottom ventilators open, and, owing to frosty weather, in the winter also.—M. B.

NAMES OF PLANTS AND FRUITS.
 *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C.
 Names of plants.—M. H. Small.—*Onoclea aurata*.—J. P. Jolly.—*Athyrium Filix-foemina* *Frisillia orientata*.—P. B.—1, *Adiantum formosum*; 2, *Woodwardia radicans*.—Anglice.—*Asplenium Adiantum-nigrum*.—Charles Green.—1, *Lycoctia aromatica*; 2, *Aërides liliatum*; 3, *Vanda tricolor*.—J. Greening.—1, *Gypsophila paniculata*; 2, *Silene maritima* *pleens*; 3, *A. Gallardii*.—W. O.—We regret we cannot name the plants sent; specimens insufficient, and crushed in the post. It possible, send when in flower.—H. Fry.—We cannot name seedling *Carnations*. You can give them any names you like.—F. B.—The *Orchid*-flowers sent were quite rotten from having been packed in wet moss, so it is impossible to name them accurately.—Seaside.—1, Flowers are fallen off, but looks like a *Gedalia*; 2, A *Fianella Lily* (*Funkia subcordata*); 3, A *Larkspur* apparently, but bad specimen; 4, Dried up; 5, Apparently a piece of *Southernwood*; 6, *Santalum incense*.—J. W.—We cannot name from such a specimen.—W. J. T.—Not *Orache*, but we should like to see a fresher specimen.—H. W.—*Campanula germanica*; can be grown from seed.—Canon.—*Viola alba*.—J. S. B.—*Gypsophila paniculata*.—Miss Greenly.—*Lilium pardalinum*.—N. Devon.—Mountain *Osageod* (*Gnaphalium glaucum*). You can name it, if you know, except by pulling up every root.—Yorkshire.—1, *Oppopogon Jaburan variegatum*; 2, *Cyperus alternifolius*.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

Miss Wall.—Apply to Messrs. Geo. Bunyard & Son, Maidstone, Kent.—P. F. Hunter.—The *Chrysanthemum* leaves are attacked by the grub of the *Merguicula Daley* Fly upon which there have been many notes in GARDENING. The only remedy is to pluck the leaves and so destroy the grub.—L. M.—The Vine is evidently badly attacked by red-spider. Sponge the leaves.—T. B.—The *Tomato*, of course, a fruit, but it is usually shown with vegetables.—Colonel Thornton.—The trees are attacked by the Pear slug. Dust over with slaked lime, and in a few days syringe this off again, and then repeat the application.—E. C.—Apply to Messrs. Barr & Sordani, King-street, Covent-garden, London, W.C.—R. C. Thompson.—The Grapes are scalded from want of early ventilation.—Amateur.—Apply to Mr. George Monro, Salesman, Corveet-gardeo Market, London, W.C.

POULTRY & RABBITS.

REARING TURKEYS.

For some reason or other, late-hatched birds do not, as a rule, do well. This is especially the case where the later birds are reared on the same land as that used for the earlier broods. I do not doubt that this has something to do with many failures. The land is tainted with the droppings, and in weather such as that experienced this summer these remain upon the surface instead of being washed into the ground by frequent rains. Again, we must not forget that the last batch of eggs in the season are fertilized with a weaker germ than these laid at the commencement, and if the germs be weaker it naturally follows that the chick is less robust, and is, therefore, less fit to stand an excess of heat, or, in fact, any strain which it might be called upon to endure. I am not naturally given to look at the black side of things, but when I receive accounts of young chicks, ducklings, or turkeys dropping off, I expect but one termination, and that is that most of the lot will fall victims before the disease or ailment from which they are suffering runs its course. It is because I believe this so strongly that I am constantly warning my readers to take care that their young stock shall receive a good start, for if they once receive a check the probability is they will not be easily get to move again, in spite of good treatment in every respect. The report of some birds recently confirms what I have just said. The sneezing points to an attack of roup; this is not surprising when we consider the changeable weather and the enfeebled condition of the birds. What people have to do is to restore the chicks to a growing state, and then they might hope to save those which are still left. I should, in the first place, try a change of food. The bread, if

soaked in water, is certain to do harm, and should be discontinued. The first feed in the day may consist of mixed middlings and Spratt's food; at eleven o'clock you may give some scraps of underdone meat, chopped very small; at two o'clock, or a little later, the first feed may be repeated, and at six some sound Wheat can be fed. An occasional meal of stale bread soaked in strong ale can be tried. For drinking purposes I should use fresh water and a little Parrish's chemical food, to be obtained of any chemist. If the chicks drink freely (and this is generally the case with silling birds), you can use cod-liver-oil to advantage. I should endeavour to divide the chicks into small lots, putting the worst cases together, then the next worst, and so on. The run should be roomy, clean, airy, and yet not draughty, nor should it be too much covered by the sun. For the worst cases it might be well to try a roup pill, made as follows: Cayenne pepper, 20 grains; copper sulphate, 10 grains; copaiba, one fluid drachm. This is sufficient for twenty pills, and half a one should be given morning and evening. The swellings and nostrils should be washed three or four times daily with Labarraque's solution of chlorinated soda, diluted with twice its bulk of water. The foregoing treatment will give some trouble with many birds, but if successful in saving the greater part anyone will be amply repaid.

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GARDEN AND PLANT PHOTOGRAPHS.

We beg to announce another photographic competition, when prizes to the amount of over Eighty Guineas will be awarded.

The subjects selected may be: Beautiful houses and country seats; garden landscapes; picturesque trees; plants, hardy and tender; Ferns; Roses; cut flowers, prettily arranged; pretty cottage gardens; our best fruits on the branch or branches, not in dishes; standard vegetables; good flower-gardens, or any other objects of interest in a garden.

LIST OF PRIZES.

COUNTRY SEATS AND GARDENS.—A prize of TWENTY GUINEAS will be given for the best series of not less than six photographs of Tudor, Elizabethan, Jacobean, or other old English houses and their gardens, particularly showing the beauty of the house in relation to the garden. Picturesque old Farm and Manor houses will not be excluded from this competition.

GENERAL GARDEN AND PLANT PHOTOGRAPHS.—First prize for the best collection of general garden photographs, SEVEN GUINEAS. Second prize, FOUR GUINEAS. Third prize, THREE GUINEAS. This series may include subjects from any class, from either outdoor or indoor gardens.

FLOWERING PLANTS.—A prize of FIVE GUINEAS to the sender of the best collection of photographs of flowering plants grown in the open air or under glass. This series may include flowering shrubs of all sorts.

BEST GARDEN FRUITS.—A prize of FIVE GUINEAS for the best collection of photographs of any of our good garden fruits: Grapes, Peaches, Apples, Pears, Plums, Cherries, &c., or bush-fruits, to be shown on the branches, not in dishes. No prize will be awarded to photographs of fruits or vegetables crowded in dishes.

BEST VEGETABLES.—A prize of THREE GUINEAS for the best collection of photographs of best garden vegetables. The object of this is to get full representations of the best garden vegetables under the old genuine names. We do not want to exclude real novelties when they are such.

In any of the departments, if no collection of sufficient merit is sent in, no prize will be awarded. All competitors not winning a prize will for each photograph chosen receive the sum of half-a-guinea. In order to give all readers ample time to prepare good photographs the competition will be kept open until the last Saturday in July, 1893.

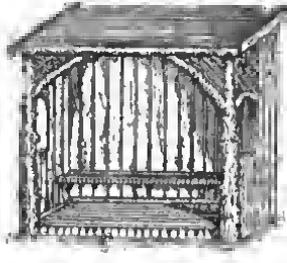
WHAT TO AVOID.—Cut flowers or plants should not be arranged in vases with patterns on them. Backgrounds should be plain, so as not to come into competition with the beautiful flowers. Figures of men or women, barrows, watering-pots, rakes, hoes, rollers, and other implements, iron railings, wires, or iron supports of any kind, labels, and all like objects should be omitted from these photographs. The intention is to show the full beauty of the subject taken, and this cannot be done well when the photographer is confused by other considerations. Dwarf flowers are ineffective when taken directly from above. The camera should be brought low down for such. All photographs should be mounted singly, and not several on a card. They should not be mounted on cards with black backs, and the photographs should not be less in size than 5 inches by 4 inches. In many of the photographs sent in for our last competition the subjects were much overexposed. The following are the rules to be observed by all competitors:—

FIRST.—The photographs may be of objects in the possession of either the sender or others; but the source whence they are obtained must be stated, and none sent the copyright of which is open to question. There is no limit as to number, and no fee to pay. The Editor is to have the right of engraving and publishing any of the chosen photographs. The photographs may be printed on any good paper that shows the subjects clearly; but those on albumenized paper are preferred for engraving.

SECOND.—The name and address of the sender, together with the name and description of the object shown, should be plainly written in ink on the back of each photograph. This is very important.

THIRD.—All communications relating to the competition must be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Covent-garden, London, W.C., and marked "Photographic Competition." All competitors sending their photographs returned, if not successful, must place on the back of each photograph a stamp of sufficient value for that purpose.

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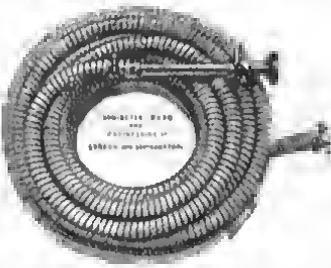
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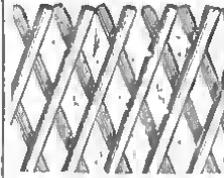
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HOUSE & WINDOW GARDENING.

ARRANGING CUT FLOWERS.

I was pleased to see a note on this subject in *GARDENING*, July 8th, p. 265, and thought the following notes may be useful to your readers. Some time back the late Mr. G. Phippen, of Reading, made some good remarks on this subject, more particularly in reference to exhibition. He said: "People have said to me, 'I do not care to go to the flower-show, there is so much cameness in it.'" This should not be when one considers for a moment the inexhaustible supply of varieties of plants and flowers. The compilers of schedules persist in copying each other. Why not each try and strike out a fresh line? At times we have so many hundred flowers—of Dahlias, it may be—set up in prim, green boxes, not a vestige of foliage visible, and there staged upon lengths of straight tables. At other times we have fine Asters and Zinnias staged in like manner. Then, again, at some shows we have Carnations mutilated and dressed and set up in paper collars, and staged in the orthodox green boxes on the straight table. It is a pity that these lovely flowers should be thus presented to the public! Chrysanthemum flowers are also arranged in boxes, which have to be made to a required size, so many inches long, wide, and high. If the flowers happen to be large and extra fine you must crush them into the box. Specimen blooms of Chrysanthemums lend themselves to artistic treatment. In staging, for instance, any one has thirty-six blooms to set up, and 4 feet or 5 feet run of table space allowed for the purpose. The green box should be at once dispensed with, and the flowers set with long stalks varying from 9 inches to 2 feet in length. Each flower should be placed in a receptacle which would hold water and be heavy enough at the base to prevent overturning. The flower should also have some kind of support to maintain it in an erect position. Having the flowers thus prepared, a number of suitable foliage plants should be employed—say, Feathery Palms—about 3 feet in height, to serve as a background. The flowers are then artistically grouped together with the small foliage plants—Maiden-hair Ferns, Asparagus, &c.—and edged with *Isolepis* and *Panicum*, so that the whole of the table space shall be hidden by the groundwork of plants and Ferns. The flowers rising from this would present a marked contrast to the formal box style.

C. T.

4144.—Plants for a south border under window.—If no hedging-out is to be done for this border, plenty of herbaceous plants should be put in in October, the border having been previously well dug and manured, so as to avoid disturbing the plants for some years. A selection of Roses may be made from the dwarf plants in any list, or climbing Roses put in (but "Amateur" does not say whether climbers are needed?) October is the best

month to plant herbaceous flowers and Roses, also bulbs, and the following list may be useful: Of Roses, Charles Lefebvre, General Jacqueminot, Coupe d'Hébé, Gloire de Dijon, Niphetos, and Jules Margottin, are all old, well-tried favourites, which will not disappoint. Plenty of newer kinds can be found in our rosarian's catalogues. Madonna Lilies, *Lilium auratum*, Tiger Lilies, and *L. lancifolium* species, both racemose and Kratzeri varieties, should be put in behind the Roses, as being taller. These will grow into grand clumps, and flower yearly, if well-mulched each October. Spring flowers: Wallflowers, Forget-me-nots (*Myosotis disitiflora*), bulbs of Snowdrops, Crocus, Scilla sibirica, Parrot Tulips, *Daffodils*, Narcissus, and Hyacinths can be put in during October, in front of the Roses, and left in the ground year by year. Also purple or white *Alyssum* makes a pretty edging in spring. Autumn flowers: *Anemone japonica* (Honorine Jobert) (white), the Pink Japanese *Anemone*, dwarf perennial *Sanflower*, *Herbaceous Phloxes* in pink, white, &c., will supply autumn blossoms, and a few groups of Carnations, Pinka, Panacea, and other summer flowers should give some brightness during the early months of the summer. The border will need a good mulching of leaf-mould and manure every autumn, and the plants should be overhauled each year in March, when they can be transplanted if necessary, cut back into shape when too large, and rearranged for the year, all but the Roses, which must not be touched at that time. Lilies and Japanese *Anemones*, too, do best to be taken up, and do best left alone.—I. L. R.

4198.—Plants for windows.—On a north or north-west aspect hardy Ferns and Creeping Jenny thrive better than most things, and both are good town plants. A few Pansies might be planted along the front of the boxes. Other suitable subjects for such a half-shaded position (during the summer) are *Fuchsias*, Shrubby *Calceolarias*, and *Celtis occidentalis*. In the west windows "Geraniums," both of the common or Zonal and the Ivy-leaved sections, *Marguerites*, *Heliotropes*, and *Tropaeolum* would do well, and a few Tuberous *Begonias* also might be tried.—B. C. R.

4123.—A house border.—Almost any hardy creeper can be grown on a south exposure unless the house be in a city, when the impure air would prevent most Roses from doing well. The Gloire de Dijon Rose will, however, stand a good deal, and nothing can be better than this as a climber, with *Keine Marie Henriette* (the Red Glory), *William Allan Richardson* (apricot-tinted), and *Climbing Niphetos* (pure white) for variety. A selection of good *Clematis* plants might be made, placing the large-flowered varieties in the warmest place, and the White *Clematis Montana*, in the coolest. If a good plant of this is put in from a pot now, it will make a good start next year, and soon cover a large space. The lovely *Wistaria* grows rapidly when established, but usually takes a year or two to do this. *Ampelopsis Velutina* is indispensable for its great beauty, and double *White Jasmine*, French *Honeyuckle*, and *Virginia Creeper* are all worth growing. (Much depends upon the preparation of the border,

which should be thoroughly dug and well manured before anything is put in; careful planting, too, in the autumn (October), or early spring, will be necessary. Many ignorant gardeners will make a hole for a plant without digging the ground, and drop the roots in perpendicularly; then the poor thing has a hard struggle for life, and cannot manage to make the luxuriant growth which is necessary. In turning a plant out from a pot the lower roots, which will be found coiled at the bottom, should be loosened with care and spread out on well-prepared soil about six inches below the surface, in a fan shape, covering them with a little fine sandy soil, without allowing manure to touch them. Having trodden the surface, after covering the roots in, until the plant is firmly planted, a mulch of stable-manure, 3 inches or 4 inches deep, may be placed over them; this will prove a protection from severe frost in winter, and from dry heat in summer, and the Creepers will flourish accordingly. With regard to the second part of the question, as to a selection of plants for making the border gay, not much can be done until October, when dwarf Roses, Evergreen *Barberries* (*Berberis Aquifolium*), with plenty of spring bulbs, such as *Crocus*, *Snowdrop*, *Scilla sibirica* (bright-blue), *Tulips*, and *Hyacinths* will make a bright show in early spring. Dark-red *Wallflowers*, *Forget-me-not* (*Myosotis disitiflora*), and a good selection of *Primroses* will add to this, and these, too, can be planted in October. When they get out of bloom in May plant the border with handsome bedding plants for summer, such as *Zonal Pelargoniums*, *Fuchsias*, *Heliotropes*, *Gazania*, *Lebelia*, &c., and have a reserve bed of *Asters*, and another of *Early Chrysanthemums* in the kitchen garden, where these plants can be cultivated until they show colour in autumn. They will both bear careful lifting at that time, and can be used to make a late autumn display under the house with great advantage.—I. L. R.

4193.—Roses in a window.—As soon as your plants are out of bloom stand them in some sheltered position out-of-doors. Keep them properly supplied with water, as clear as possible from insect pests, and either plunge them under the shelter of a hedge during the winter, or else afford them the protection of a cool frame or pit. A very little protection is all they need, and they may be started again in March. Roses are not ideal winter plants, being much subject to insect pests, and requiring a great deal of attention in the matter of syringing, &c.—P. U.

4108.—Herbs for winter use.—Mint, Sage, Thyme, and Marjoram, should be gathered in August while they are at their best, and each variety placed in a separate paper bag. These bags can be put into the oven when it is cool in the evening, and taken out in the morning when the leaves should be crisp and dry, but not burned. Rub them up finely, keeping each kind separate, and place the powdered leaves in glass jars, such as are used for jam. If kept in a dry cupboard, tied over with paper, the dried Herbs will be useful all the winter, or can be used as they are needed.—I. L. R.

GARDEN WORK

Conservatory.

Freezia, Roman Hyacinth, and Lilium candidum should be potted for forcing. The last-named Lily is coming more into favour for pot-work, and there is, I think, less demand for Lilium Martini. Only strong healthy bulbs should be potted. Work plants of their seed and other porous material into the potting compost. In this healthy root-action will take place, and strong spikes with healthy foliage will follow. Plunge the pots in the open air till October. The Roman Hyacinth and Freezia will be moved indoors in September. Onions in pots will be better placed outside now in the sunshine to ripen growth. As the ripening process proceeds less water will be required. The large-growing Cactus (Cereus grandiflorus) makes a very conspicuous plant in the conservatory border. I once had charge of a conservatory in which an immense specimen was planted, and tying of which was work of considerable difficulty. The plant was 12 feet high, and bore in the summer many hundreds of scarlet blossoms. Passion-flowers and other free-growing climbers are both useful and ornamental in large houses. They are useful in affording shade, and the blossoms, which are freely produced, have an interest besides the mere show produced, and by-and-by when the shade is no longer required the growth can be gradually reduced. The food of peat and loam in which Lapageria are growing must not be permitted to get dry. I have seen this plant to do well through being planted on the sunny side of the house. The Lapageria will do very well in the north house. Hot sunshine at any time is bad for it. Everybody should grow some of the greenhouse Rhododendrons. They are charming plants for the conservatory house, and they succeed well when a little shade is done. When grown in pots and the growth made early, and afterwards ripened by exposure in the open air, they will flower very freely in the warm greenhouse. Should be potted chiefly in peat and sand. The plant should be plunged outside in a bed of Cocoa-nut-fibre now, but must not be allowed to suffer for want of water. Countess of Derby, Countess of Bolton, Duchess of Edinburgh, Duchess of York, Edgeworth, Lady Conyngham, Lady Hamilton, Lord Walsley, and Prince of Wales are all good, and worthy of attention for cut-flowers or to beautify the conservatory. Gonolias and Heath should stand on ool-sash beds thinly in some open position to get the growth well ripened and the blossom-buds in course of formation. Solanum capensestrum must now stand thinly outside to set the berries. Arum Lilium in pots should be shaken out and re-potted. No doubt some of the stock were planted in June, and these if watered regularly will make very strong plants; but they hardly bloom so early as those plants kept in pots. Any plants which are likely to require more pot-room should have it given now, so that the roots may occupy the new soil before winter. Correa, Selvia, Eupatorium, and other things planted out should be stopped for the last time.

Ferns under Glass.

The plants are growing freely now, and must be opened out to afford room for the fronds to develop. Having room many plants in proportion to the space is a great evil, because it is next to impossible to have them thin in form. Some of the hardest species may be taken to the conservatory, and in a warm summer like the present if there is a sheltered dell anywhere in the grounds special features may be created by plunging out some of the hardest specimens. Nephrolepis in variety, the Bird's-nest Fern (Asplenium Nidus-avis), some of the Tree-Ferres, and others may be plunged out in very sheltered spots where the wind and sun cannot reach them. The indoor fernery may be made more interesting by a few Brazeos, Crotona, Begonia, and other plants with colored leaves being introduced. Grasses, such as the Variegated Carex and others, have a graceful effect. Ferns will still require shade and moisture in abundance. In potting use more loam than peat, especially when it is necessary to keep the plants in comparatively small pots.

Stove.

Fires must be lighted on cold nights, as a cold, damp-laden atmosphere will soon injure tender foliage. All-mandas now and other creepers will be in fine condition. Most of these plants will benefit from liquid-manure, being applied, say, twice a week, till the last flower-bud expands. Winter-blooming stuff will be quite safe yet in pits and frames, ventilation being given during the day to harden the growth. Poinsettias must be kept near the glass, and must never suffer for want of water, or the better leaves will go. Do not forget that a demand will be made for wall-growth but not large plants for dinner-table work when the loam season is over and the rub is made into the country.

Hard-wooded Plants

must stand on an impervious bottom; if worms get into the pots the drainage will soon be blocked up, and water-logged plants soon get into a wicky condition, and then might be as well thrown out. The water is the principal work done, and the plants will be in the open. Never water a specimen plant without first tapping the pot and testing its condition. Asters are rather subject to thrips, and any plants which are attacked should if possible be cleared before the plants are taken indoors again. If the plants are not too large a tub filled with root and lime-water, into which the plants can be dipped, will make use work of the insects. This is a very simple and cheap mixture. The roots are tied up in bag, and plunged in a tub of rain-water. The bag is stirred about daily for a week, and then a couple of pounds of new lime is dropped in the tub and left to clarify; in a couple of days the liquid will then be clear and about the colour of sherry. A quart of this to six quarts of water will make a very good dipping or syringing mixture.

Mushroom-house.

Unless in a very cool position Mushrooms will be more or less muggy in building now. So much is the case generally that beds are made up in the open air in May

and June to produce Mushroom in the hot weather, and even in the open air to obtain good Mushrooms the situation for the beds should be as cool as possible. The north side of a lofty wall has good place, and I have had good beds on the north side of a group of belt of trees. As soon as the house has ceased to produce good Mushroom clear all the beds out and all rubbish or litter of every kind, as such matters only form breeding and hiding-places for woodlice and other insects. Before any beds are made in the new house have the walls thoroughly cleaned with lime-wash, and saturate all the crevices in the floor with boiling water.

Window Gardening.

There is less demand for flowering-plants now. Foliage is now in the ascendant for the time, and the green and graceful Fern always finds favour when something is required to rest the eyes upon. Pteris tremula is one of the very best Ferns for the room; then comes Pteris Ovaroides and P. cretica, P. nobilis and others. Polypodium anatum, Nephrolepis exaltata, Asplenium Nidus-avis, Adiantum, and others are also most useful.

Outdoor Garden.

The long drought has weakened the Grass on the lawns, and a sprinkling of artificial manure will be very beneficial now. Nitrate of soda, guano, or bone-meal will do. Now that rain has come fairly copiously things will put on a better appearance. The question is sometimes asked can there be a bright garden without bedding-plants? Well, the bright garden garden seen this season has not had a tender bedding-plant in it. The Tufted Pansies have stood the drought better than I expected, as we are apt to associate Pansies with a demand for coolness and moisture. Land which is made fertile with manure as required will support the plants in a difficult season, and enable them to blossom freely. In short, good gardening is pretty much a question of helping the land to do its work. The recent rain has loosened the soil of the rougher spots of the Standard Birch and budding may now be done. Dwarf Briers and Menziesia may be done later; but the standards should be done as soon as they will work. Climbing plants, such as Clematis, Vetch's Crapnet, Jasmine, &c., established in pots may be turned out now against walls. I would rather plant now than wait till autumn or spring, as there is some growth left in the plants yet, and they will get well established in the soil. Cuttings of the New Zealand Veronica will strike now under a hand-light in the shade. Cuttings also of Eucalyptus and choice evergreen shrubs will strike now under glass kept moist and shaded. In my opinion it is the best season to put Rose-cuttings under glass.

Fruit Garden.

Peaches under glass from which the froit has been gathered must be watered as the roots when necessary, and the foliage must be syringed daily or washed with the engine. Give all the ventilation possible night and day. The wood is hard and firm, so there should be no difficulty in getting it thoroughly ripened. Remove all late laterals promptly. Late Peaches just beginning to put on colour must be fully exposed by the removal of foliage, if necessary; the same attention must be given to Peaches on walls, so colour is nearly essential in Peaches, especially now everybody does a little market-fruit. I have been much interested in a plantation of Bush Apples on the broad-leaved Paradise. The trees are four years planted and are carrying a good crop of remarkably fine fruit. They seem to have enjoyed the sunshine and are a happy contrast to most of the orchards in the district. I should state there has been much all mention in the book. These are the trees for the small garden, all the attention they require is mulching in spring with good manure, and the thinning of the young growth where there is any appearance of crowding. Good Strawberry-plants will be scarce this year as fewer runners have been produced and these are weaker than usual, therefore it is important to get the land into the best possible condition. Where Pines are grown the plants should be gone through now, plimbling beds renewed, and any potting in Peaches, especially now. Remove suckers from old plants from which the fruits have been out. For the suckers after dressing the bottoms in 6-inch pots and plunge them in a warm-bed and keep close. Shade a little when the sun is very bright. Give liquid-manure to plants swelling off their fruit every time they are watered until the fruits begin to colour. Ripening Pines will not require much water, though the atmospheric moisture must not be altogether shut out. Plant also for a few in a warm heated house or pits. Young plants with a long trellis to cover should not be stopped as in frame culture.

Vegetable Garden.

Thin the growth of Tomatoes both under glass and also outside, not only by thinning off all side shoots, but also cut back to one pair of leaves. Feed liberally with rich manure and strong liquid. Tomatoes are good feeders and if planted in fairly firm ground cannot well have too much special nourishment. Put in cuttings or sow seeds to raise plants for carrying through the winter. Young plants of Cucumbers should also be raised either from seeds or cuttings for winter-fruiting. Cucumbers in bearing should be exposed to the sun as far as possible. I have been using for this purpose Moss-litter-manure and fresh loam, and I have never had Cucumbers do better, but the sunshine has brought Cucumbers on with a rush. I suppose there never has been a better Cucumber season where the treatment has been liberal. Now that rain has come copiously promote Winter Greens. Late planted stuff, as a rule, does not do much good, but the ground being warm and the prospect of autumn now favourable, there are late planted things may do better this season; at any rate, where there is vacant ground fill it up with something. Plant out Coleworts. Savoy Cabbage may also be planted, also late Celery. This crop will come on faster now. Dig up second-early Potatoes and sow Turnips, Spinach, and Onions on the land. Plant Walsherb Cauliflower on a south border. Cut and dry Herbs. Sow Parsley and French Horn Carrots. The latter will come in useful for drawing young.

Work in the Town Garden.

There are in a great beauty just now, and have not had up wonderfully since the rain, though it has been quite earlier than it did no doubt the blossoms would have

been finer. Where Roses cannot be grown, and in very few towns or even suburban gardens (except where right on the edge of the open fields) do they thrive to any extent, there is no substitute for them to equal Cassiopeias. The colours are so varied and rich, and the blossoms (of most kinds at least) highly fragrant as well. They are capital for flower-ree, enjoying a liberal supply of root or manure material of any kind at the root, though I do not suppose that the pepping they frequently get overruled in a crowded neighbourhood does them any good. The chief secrets of their growth are a free, sweet, and moderately rich soil, preferably of a loamy nature, and moderate firm, and annual propagation by means of layers. The earlier these are taken the better, so no time ought to be lost now in getting the whole of the work completed. This has been a bad year for Hollyhocks, which dislike drought of all things, and I do not think I have seen a decent plant this season so far. I lost all my old plants last winter, owing to the intense cold and wet together and the soil being somewhat heavy. I usually make a sowing in heat in January, but omitted to do so this season; shall, however, get a good lot in shortly, wintering the plants in pots under glass and planting them out next spring. One of the strong points of this site is the soil, with which it is raised from sand, and if this was carefully oved from fine flowers a large portion of the progeny will prove to have good double blossoms also. Dahlia ara growing rapidly, and in some cases showing flower. Keep them securely staked and tied, as they soon become top-heavy, and if the growth get at all crowded thin them out fearlessly. In town gardens the only way to get plenty of Dahlia blossoms is to give the plants the most suitable portions available and keep the growth well thinned out. Dahlia ara in large pots are very useful for balconies, that roofs, broad steps, and other places where they cannot conveniently be planted out. In smoky localities where few things thrive the Tropaeolum family are of great use. Every one knows what an accommodating plant the common climbing Nasturtium is, and the dwarf annual kinds, such as King of the Bees, etc., are equally valuable for bedding. There is a race of dwarf perennial varieties, increased by issues of outtings, that are most excellent town plants, and F. Firsielli may be planted in hanging baskets and window boxes, or in the open ground, the growth being trained to sticks.

E. C. R.

THE OMINO WIFE'S WORK.

Extracts from a garden diary from July 29th to August 5th.

Sowed a little more seeds of Eilan's Early Cabbage, also Tripoli Onions, and Prickly seeded Spinach. Finished the pruning of Wall-trees and Espalliers. My Apple-tree which I have noticed for the first time had a little American Blight upon one or two branches, have been dressed with Gishurst Compound, every bit of the white fly insect being washed with it. It is difficult to say how far the insect will travel. In the present case they must have been carried by the wind. Put in cuttings of Fuchsia. They will root in a clove frame and will then be potted off and kept growing in heat all winter, and will make good flowering plants in 5-inch and 6-inch pots by midsummer; or in the case of early blooming kinds a month earlier, or if the flowers are picked off and the plants shifted on into larger pots, will make a nice little specimen a yard high by July. Have some of the plants struck about this time last year, now in 7-inch and 8-inch pots, masses of bloom, very useful for grouping in the conservatory. Shifted on Aralia Sebaldii and Orevillea robusta. These are raised from seeds sown in spring. Put in cuttings of Hydrocarea, as the young shoots are getting a little firm. The plants will bloom in the spring in 4-inch pots, each plant carrying a large truss of bloom. Cleared out the early Cucumbers in house. Every scrap of soil and manure has been taken out and the house will be painted very shortly and be got ready for planting in about a month to come into bearing through the autumn and winter. Young plants of Lookie's Perfection are just up and will be strong and ready to go out by the time the house is ready for them. Cucumbers in bearing are gone through, old leaves removed, and young shoots stopped once a week through the season. Applications are applied as often as the roots work through and show themselves on the surface. Sowed Brown Cos Lettuces and Green-curled Endive for winter. Planted a fresh piece of ground with Strawberries, the kind being Sir J. Paxton and President, with a small trial bed of a few new sorts. Tied up Celery with paper to blanch. Cleared off old Peas and planted the ground with Coleworts, about 1 foot apart. Shifted on Cinesarias and Primulas and pricked off Cinesarias in boxes of light rich soil. Rearranging the stove to give plants more room, several plants being moved out to the conservatory. Shifted spring struck Begonia, Justicia, into 6-inch and 8-inch pots. A few larger pots have been used too, and in some cases three plants being placed in each pot. It is quite an easy matter to make up good specimens in this way with spring-struck stuff and may will produce a much better crop of work and be also other more than the old White Lily, and the bulbs are reported as soon as the old stems die down. Only the strongest bulbs are selected, the small bulbs are planted out in a reserve bed. The Double Tiger Lily does well in pots. Half a dozen bulbs in a 7-inch pot make a nice specimen, and this I find very useful in the conservatory after the Madonna Lilies are over; in fact, I have them in bloom now. My stock of early-blooming Lilies (all pots) is now in a cold frame with the lights off and the soil open. Exposure rests and ripens the bulbs and secures plenty of spikes. Shifted on Tree Cassiopeias for winter flowering. They will remain outside for the present. Put in cuttings of Fandae and Viola or Tufted Pansies in cold frames, the beds being especially prepared with lights for the winter frosts. Shifted on double Primulas, also a batch of Primula obconica.

4152.—Legal question.—If the branches of the tree grow over your neighbour's garden it is an infringement of his rights, or an obstruction the light and air, and he is quite within his rights to remove them. It might perhaps have been more properly raised as requested you to do in the first instance. (1893)

* To cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than in the south, and with a quantity of earth.

ROSES.

ROSE "LAMARQUE" IN COOL-HOUSES.

This, in addition to being one of the very finest of wall Roses, is lovely for planting out in a greenhouse or any other cool glass-house. It used to do wonderfully well in one of the cool-houses in the Royal Nurseries, Sloagh, bearing a great crop of delicate White Roses overhead. It is very free and graceful, and the buds are valuable, as they have a good clear line from their earliest appearance. It forms a charming contrast to Marsechal Niel when planted out in the same house.

THE POLYANTHA ROSES.

The Polyantha class is one of the most charming of the various sections of Roses. The latest addition to the list is Crimson Rambler, a variety that promises to become one of the most largely grown varieties of the future. It is so exceedingly free, graceful, and the flowers, quite little rosettes, are of an intense crimson. It will climb and make a good mass, simply for the reason that its splendid flowers are so rich and striking in colour. The Polyantha Roses keep the garden gay over a good season, and the dwarf plants

and one is Georges Pernet, which has rosy-peach flowers, distinct and pleasing. Golden Fairy has a dainty bud, and the flower is buff-yellow, varying in shade. The Polyanthas may be grown for cutting, and the clusters of bloom are excellent for vases or to mix with other things. The plants are not troublesome to grow, bloom continuously, and exhibit such distinctness of character that several may have a place in the same garden without introducing a monotonous effect.

C. T.

OLD ROSES STILL IN CULTIVATION.

Roses introduced more than a quarter of a century ago, and which are still appreciated, must be worth looking after by those who merely want a garden full of Roses. Who would care to be without General Jacqueminot, so sweet for cutting either under glass or against a wall outside? The General was introduced in 1853, just about or a little before the time of the Crimean War. Géant des Batailles, introduced in 1848, or perhaps a little earlier, was thought a good deal of at that time, but is so liable to mildew, and is out, I think, so much grown now; still in well-drained situations it will make a good bedding Rose. I remember distinctly

is still to the fore, though introduced so long ago as 1830. Solfaterra, 1843; Rubens, 1859; Adam, 1833; Céline Forestier, 1858; Devoniensis, 1840; Elise Sauvage, 1843; Cloire de Dijon, 1853; Homère, 1859; Lamarque, 1830; Mme. Falcot, 1858; Mme. Willermoz, 1845; Mrs. Bosanquet (China), I forget the date of introduction of this useful old wall or pillar Rose, but I think somewhere about 1850; Souvenir de la Malmaison, 1843; Souvenir d'un Ami, 1846; Triomphe de Rennes, 1857. These may be termed the remnants which remain from the hundreds which have been introduced since 1840, and which have disappeared. I am speaking of the old Roses only. Doubtless many of the newer Roses now in cultivation will still be found after many years in most gardens. Such Roses as Ulrich Brunner and Gustave Figanau will doubtless be in evidence in the twentieth century.

4138.—Budding Briars.—Bud the Briars as soon as the bark works freely. If the thorns can be easily detached, the bark will move easily.—E. H.

—Bud the Briars at once; you cannot have a better time than the present. You can use buds of H.P. or any other class of Rose, and if the plants are standards the buds must be inserted on side-branches springing from near the top of the Briar.—B. C. R.

—Yes, the present time is an excellent one for budding Briars that were planted last October. No doubt you have paid due attention towards removing any side-growths that were above or below the height you wish the future Rose to be. This is necessary, so as to secure strong shoulders to work the Rose-buds into. Do not cut away any of the growth previous to, nor directly after, inserting the bud. This is one of the chief causes of failure, as it checks the even flow of sap at a most critical period.—P. U.

4211.—Ground for a Rose-garden.—From the description I should say Roses would do well with you if you add a little heavier soil to your garden. The fact that Roses do well just below you, and upon the same slope of ground, would confirm this. No Roses are more profitable to grow, or more handsome and varied in colour, than the Tea-scented and Noisette sections, and as these would evidently thrive well with you, why not confine your choice rather closely to these? Yellows and lights of all shades are found well represented among the Teas. They grow more freely, flower in greater profusion, and are altogether the best class to grow. They also make far better plants as standards than the majority of other sections do.—P. U.

I see no reason why your hopes of succeeding in growing Roses in such a soil as you describe should not be realised. There is no doubt Teas would do better than the H.P., but the latter as standards on 2 feet stems and as dwarfs would no doubt thrive well if you keep up its present state of fertility by digging in lightly a moderate dressing of manure once in two years, and allowing the Roses to have the benefit of all the space. The beds should be oblong in shape and about 6 feet wide. In a dry soil and sloping position like yours, the surface of the bed should be level, and 2 inches or 3 inches below the walks or alleys between them, all the water you give them will then find its way down to the roots. In raised beds it is liable to run away down the sides. The H.P.'s had better occupy the beds at the bottom of the slope.—J. C. O.

4194.—Roses for India.—It would be the best way to give an order for the number of plants you require, placing it in the hands of some good nurseryman. If you do this, and say when you call, the grower will pack them in such a manner as his experience has proved most successful. There are many thousands of Roses grown in this country and exported to India annually. The extra charge for packing would be a mere trifle. Buds and cuttings could not be taken, as the journey is too long.—P. U.

4268.—Treatment of Roses, &c.—When you say that Ulrich Brunner is very poor, and that the flowers of John Hopper are small, it is very plain that the long drought is the cause of your disappointment, as all the varieties you mention are good growers, and often thrive where some of the weak ones fail. With regard to the colour of the Countess of Rosebery changing, as you seem to suppose, it is attrib-



Flowers of Rose "Lamarque."

are usually in the summer quite sheathed with flowers. A very fine kind is Gloire des Polyanthas, the flowers bright rose, white in the centre, and when a plant is in full bloom it is exceedingly distinct and pleasing. These Polyantha kinds are not grown much in the smaller gardens, although it would be better so than having a lot of ugly standards that never seem happy. One reason is they are being constantly one about and never given a reasonable chance to make a respectable head. One of the more popular Polyanthas is Mignonette, which has delicate rose flowers, that change with age to white. It produces charming clusters, and in every way is a delightful variety. One of the freest is Anne Marie de Montravel, the flowers appearing in profusion, and if small they are very pure-white and imbricated in character. Clothilde Soubert has large flowers, considering the class to which it belongs, and there are white, with the centre tinged with a reddish tint; they are full, imbricated, and given to sporting a little. The Paquerotte is a gem of its class, the plants being very free, and the flowers double, pure-white, and very pleasing. There are upwards of twenty kinds described in catalogues, but in the ordinary garden this number is not, of course, required. But I may mention two or three more that are of great beauty

the grand masses we had of it in 1850, all in their own roots, struck from cuttings principally from single buds in heat. The following list with the date of introduction may be of interest: Alfred Colomb, 1865; Anna Alexieff, 1836; Anna de Diebach, 1858; Barocess Rothschild, 1861; Beauty of Waltham, 1862; Boule de Nalge, 1867; Camille Bernardin, 1865; Charles Lefebvre, 1861; Comtesse de Chabrillant; 1856; Dr Andry, 1864; John Hopper, 1862; Jules Margottin, 1853; La France, 1867; Mme. Charles Crapet, 1859; Mme. Clemence Joigneux, 1861; Mme. Charles Wood, 1861; Mme. Victor Verdier, 1863; Miss Bonnaire, 1859; Marsechal Valliant, 1861; Pierre Notting, 1863; Mario Baumann, 1863; Prince Camille de Rohan, 1861; Sénateur Vaissas, 1859; Victor Verdier, 1859. Among Tea and Noisette Roses some of the favourites of the present have a still more ancient record. Niphotos, for instance, was introduced in 1844. A long list of really splendid Roses might be given which were introduced much over a quarter of a century ago. Goubault is the first Tea Rose I remember anything about, and has fixed itself in my memory because somewhere in the forties I was working in a garden where several plants of this very fragrant Rose were introduced from France. Ladies often went to France for their Roses in those days. Saffron

able entirely to the heat and drought. If you want to catch the true colour of *Rosee* in such a season as we have passed through, you must see them in the morning before the sun has had time to cause them to fade. The best *White Rose* for cutting is *Perle des Blanchos*, as it is a good perpetual bloomer. Two good standard *Rosee* with light-coloured flowers are *Rève d'Or* and *Sonveur de la Malmaison*; these, however, are not Hybrid Perpetuals. If you prefer the latter class you may select *Captain Christy* and *Mme. Gabrielle Luizet*.—J. C. C.

THE KITCHEN GARDEN.

RADISHES AND THEIR CULTURE.

FOR our first Radishes we were indebted to China, whence they were introduced into this country about the fifteenth century. Their value was at once recognised, and they soon spread over all parts of the country, until even the smallest cottage garden had its bed of Radishes. A warm, moist soil suite them best, but they may be grown in any ordinary garden soil. Sowings may be made from February to December, but both early and late crops must have the warmest border available, and be protected during severe weather, whilst summer crops may be advantageously grown in any shady position. The seed is generally sown broadcast, and the seedlings thinned out when large enough to handle. These thinnings, when washed, make an excellent salad, and are by many preferred to the root. From April until September sowings may be made every ten or twelve days—i. e., if a continuous supply be needed. To have Radishes in the best possible condition they must be grown quickly, and to do this frequent waterings during dry weather must be given them, otherwise by the time the roots are of a usable size they will generally be pithy and ill-flavoured. Small sowings in quick succession are, therefore, preferable to large ones made at long intervals apart. Where Radishes are forced, the seed is generally sown on hot-beds between rows of Potatoes, Carrots, &c.; or where there is plenty of accommodation, they may be allowed to occupy frames by themselves; the former plan is, however, a good one, and the Radishes are not detrimental to the other crops, being used before they have attained a sufficient size to be injured by them. In this case the seed is sown in drills, and the seedlings, when large enough to handle, are thinned out to distances of about 1 inch apart. Frequent waterings and weedings are all that is necessary after the plants have been thinned. Radishes may also be successfully forced by sowing the seed in large boxes filled with light, rich soil, and placed in warm-houses or pits. As regards varieties, they are now numerous, those most in use being the Turnip-rooted kinds (for forcing and early crops out-of-doors), the long-rooted sorts, such as Wood's Early Frame and Early Scarlet Frame (see illustration), Scarlet Short Top, &c. These are all good in flavour, and bright scarlet, a colour which renders them more valuable than the purple and white kinds, which are only fit for growing for their leaves, which are large and tender. The Turnip-rooted kinds are most suitable for summer use; there are several varieties which, however, differ but very slightly from one another except in colour; there are scarlet, white, rose-coloured, and purple, the two former being the kinds generally grown. The Black and White Spanish are grown for winter use, these sorts being much more hardy than other kinds, but they are inferior in quality, being large, hard, and hot. The only Radishes grown in the market gardens about London are the

RED TURNIP and Salmon (a long-rooted kind), and the white varieties of both these sorts; but the majority are red. These constitute the principal winter crops in the market gardens, the first coming in in the first or second week in December, the second three weeks later, the third in the second or third week in January, and others from that time till the end of March or middle of April, an interval of about three weeks elapsing between each succession. The empty space at command, the character of the season, the succeeding crops, and other circumstances determine the number and extent of the Radish plantations. Where a great extent of land can be obtained and sown at one time, the sowings are fewer

than when only a small space can be cropped, and where, on an average, four or five successive plants constitute the number grown. Radishes do not grow well in summer, the weather being then too dry and parching for them; but in a moist season they may be grown even in summer with advantage. If the weather be moist, a



Radish "Early Scarlet Frame."

sowing is made in August on a cool piece of ground, and another a fortnight or three weeks afterwards. Radishes are usually grown on ground that has just been cleared from Vegetable Marrows, French Beans, Seakale, Rhubarb, or Celery. The first two crops are usually grown under fruit trees; by sowing-time the trees are leafless, and whatever pruning they may have required will have been given them; they, therefore, do not shade the plants, but, on the contrary, shelter them a little, and before the leaves begin to grow in spring the Radishes are marketed. The ground, after having been dug or trenched, and manured if necessary, is lined off into 4 feet or 5 feet wide beds, having 1 foot alleys between them. The seeds are then sown, raked in with wooden rakes and also slightly covered from the alleys, and rolled. About 3 inches in depth of rank litter are then strewn over the beds, and left there until the seedling appear, when, if the weather be fine and not very frosty, they are uncovered during the daytime and covered at night; but during hard, frosty, and snowy weather, they are kept covered, even during the daytime. All the sowings are treated in the same manner as regards coverings and uncovering; and, after the middle of February, if the plants be strong and the weather mild, the coverings are dispensed with, but kept in the alleys in case of emergency. Radishes, in their rough leaves, will stand a few degrees of frost with impunity, if the ground be not very wet. In April, the litter used in covering is removed and built into a large stack, to be converted into manure. The

MARCH AND APRIL SOWINGS require no uncovering. Birds are very destructive to Radishes from the time of sowing until the plants have made rough leaves: they eagerly devour the seeds before they germinate, and look after the husks after the seedlings appear, pulling up the young plants to effect their purpose. In order to counteract this mischief, boys are kept to watch and scare away the birds. In March the first outdoor Radishes are fit for market, the largest being pulled up first, leaving the others for a week or two later, in order that they also may become marketable. When drawn they are tied into little bundles, bound round with a withy, or piece of bast, washed after being bunched, and packed into baskets for market. After Radishes may be planted Seakale and Lettuces, Cauliflower and Lattices, preparations being made for Celery, Vegetable Marrows, French Beans, or any other crop suitable for the situation.

Radishes are treated in the same way as those for spring use; but, as has been stated, the litter coverings are not used except in the case of hot, dry weather. When Radishes are wanted earlier than those of the December outdoor sowings, they are obtained from gentle hot-beds, made up about the 1st of January. These hot-beds are of two kinds—one the common frame hot-bed, the manure being in sunk trenches; and the other merely a sunk bed of manure, covered with a few inches of soil, and mulched over like the outdoor beds. S.

4212.—Extirpating Horae radish.—You cannot do better than you are now doing to get rid of the Horae radish; in fact, that is the only way to do so. If you continue it you will not find it so difficult as you suppose, for no plant can stand being interfered with while in active growth, as you are now doing. For a year or two plant the space with Potatoes, or some other strong growing crops, like Celery or Peas, that do not remain in the ground, and that require the land to be deeply stirred, with plenty of space between the rows.—J. C. C.

4191.—Unhealthy Marrows.—There are probably insects at work, which cause the puckered and warped condition of the growth. Syringe with soap-suds and paraffin-oil several times, and keep the plants well nourished with mulching and water. Possibly, in addition to the insects, there may be mildew. In that case dust the affected parts with sulphur; then, if the roots are well nourished, the new growth will be clean.—E. H.

4209.—Unhealthy Cucumbers.—The plant is affected with canker, probably caused by irregular watering, or by moisture settling round the collar of the plant. This part should be kept high, and be wetted as little as possible; and it is also a good plan to have a few pieces of charcoal, free-stone, or broken brick round the neck of each plant, so as to avoid anything of the kind in future.—B. C. R.

Your plants are affected with canker, the worst of all diseases that can attack Cucumbers, and for which there is no remedy unless it is applied immediately the disease appears. A little sulphur or fresh lime rubbed on the affected parts will check its further progress if taken in good time. You had better draw the earth away from the stems and apply the remedy as suggested, and do not let any moisture reach the stems of even healthy plants when this disease is known to be present. In future get a change of soil.—J. C. C.

4185.—Cracks and dark spots on Tomatoes before ripening.—Cracking is usually caused by insufficient moisture during the early stages of growth, and a superabundance afterwards. It is very likely to occur in a season like this, when frequent and heavy rain succeeds a long period of drought. A black spot commencing in the eye of the fruit and gradually spreading is a disease caused by the style of the flower becoming decayed instead of withering naturally; but another kind of decay sometimes appears on the plants, and this I believe arises from excessive moisture in the house at night, or from want of vigour in the roots.—B. C. R.

This is a fungoid disease closely allied to the Potato disease. I should hardly have expected this in a season like the present, unless the plants are growing under unfavourable conditions. When Tomatoes are grown year after year on the same spot they are more susceptible to the attack. A damp, stagnant soil often leads up to it. If the plants are in a cool house deficient ventilation and too much water may have brought it on.—E. H.

4132.—Culture of Seakale.—I would advise "Ignorant" to dig up his Seakale in autumn when the leaves have ripened off. Cut off the roots and force the crowns in a greenhouse in winter, or in a frame on a slight hot-bed, and make a new bed in the following March or early in April. The roots which were cut off may be made use of; every piece will grow. Choose pieces which are clean, without those black spots which are seen on a transverse section running through them, not smaller than an ordinary *Garlicum sativum*; they should be selected at the time of digging up. The end nearest the stock should be cut off horizontally, the root

and chliquely. These are known as thongs; they must be kept moist by a covering of soil or sand in the same way as Carrots or Beet. In preparing the ground incorporate plenty of good manure, as good Seakale cannot be grown without it. Trench the ground well, keep the top spit on the top, and chop and rake down. If intended for a permanent bed, plant 3 feet apart each way, three thongs in a triangle, 4 inches apart, 1 inch below the surface; when the shoots can be handled thin out to two on each thong. Keep clear of weeds by occasionally chopping through with a three-forked hoe. A good watering two or three times during the summer with manure-water will benefit them greatly. In autumn cover with pots; these should be covered with leaves. In this case put some wire netting round 3 feet high; fasten to stakes. Fine crowns should be ready to cut by March; if required earlier some manure which will give a little warmth should be covered over them. When cutting out the crown clean off. Afterwards the stocks may be cut further back, so keeping the crowns more compact. When the thinning-time comes more can be left, from about eight to twelve. I have out fourteen fine pieces from a single pot, this being rather exceptional. After the leaves or manure is cleared away a coat of manure should be dug in; a bed should last about four years. If thongs are planted 2 feet apart and 9 inches to a foot apart in the row and thinned out to one crown, they can be dug up in autumn and forced in winter; good crowns are obtained in this way.—G. P. SELDEN.

4201.—Forcing Rhubarb.—Rhubarb may be forced under the stages in the greenhouse if the stages are not too low. Set the roots close together, and fill in between with rich compost, and give a good soaking of tepid water. The roots must be healthy and strong. Weakly roots which have been divided this year will not do.—E. H.

FRUIT.

EARLY APPLES.

One of the best early dessert Apples is the Red Astrachan, a very handsome and free-bearing dessert kind, quite fit for table this year early in July. This is closely followed by the Junnatsinge and Red Quarrendan, and then by the highly-perfumed Gravenstein; after which there are plenty of good kinds to take up the supply. For kitchen use Lord Suffield (here figured) is again the first and best, carrying a fine crop of clear-skinned Apples of excellent quality that require but very little cooking. Kaswick and other Codlins are all good cookers and exceptionally prolific. In seasons like the present, when heavy crops and dry soils are the rule, it will be well to lighten the load as much as possible by taking off the largest fruits first, so as to make the most of the crop. Where mulching and artificial watering can be given to the trees it will well repay the labour. J. G., Hants.

4215.—Treatment of a Pear tree.—The tree wants root-pruning, root-lifting, or both. Probably there is a top-root, though this may be diverted by the stone. Do not cut any of the surface or upper roots, but dig down below the tree, and cut off the top or any deep lying ones right through, and lift and relay the upper layer nearer the surface. This should be done in October, just before the leaves fall.—B. C. R.

4188.—Pear for a south-east wall.—One of the best and most useful Pears for this wall would be the Marie Louise. It is a good keeping variety, but the season may be greatly prolonged by making three gatherings of the fruit at intervals of, say, seven or eight days. I think one of the best of all Pears is Doyenné du Comice, but as it will enoced well as a standard it is not worth while to plant it against a wall.—J. D. E.

Plant Marie Louise in November.—E. H.

4200.—Old Vines.—Blight is rather an indefinite term; it may mean anything, and before anyone can prescribe for disease one wants to know the nature of the attack, whether it is mildew, red-spider, scalding, shanking, or any of the other evils to which Vines under glass are subject to when improperly handled. I looked into a viney the other day that I was told had blighted Grapes. In a certain sense

some of the Grapes were blighted, for the berries were, many of them, badly scalded, but the term blight would hardly, in my mind, have suggested scalding. Another case where the Vines were said to be blighted was a bad attack of red-spider. When the Grapes are blighted by mildew there is not a minute to lose if any of the Grapes are to be saved. Sulphur, in some form, is a good remedy for mildew, and whilst using the remedy fight the disease by making the conditions of healthy growth more suitable, rake over the border or borders, and mulch with short stable-manure. The ammonia arising therefrom will be beneficial, but leave a little air on always while the manure is fresh or the ammonia will injure the foliage. This top-dressing of stable-manure is useful, both in cases of mildew and also in red-spider. Scalding is generally caused by not giving air early enough in the morning. Houses fully exposed to sun should have air along the ridge by six o'clock in the morning; the openings to be increased as the sun gains power. It is a good plan also to allow a little more freedom of growth if the Vines have been closely pinched in. Possibly the roots were too dry, and in that case water must be given freely several days in succession.—E. H.

The blight which has appeared on many of the bunches is probably mildew. It is a whitish substance and is very injurious to the Vines, appearing both on the leaves and on the berries, and if not destroyed it will quite spoil the fruit. As a preventive the Vines, after being pruned, should be thoroughly scrubbed and painted over with a mixture of soft-soapy water, a little soot, and thickened with flowers of sulphur. Sulphur applied to the affected part will destroy mildew. It may be dusted on in a dry state, but it makes a sad mess of the berries to dust them over with it. I would try painting the pipes with sulphur, mixed in soft-soapy water. Heat the pipes well so that the fumes of the sulphur may have effect.—J. D. E.

It would have insured your receiving a more satisfactory answer if you had sent some sort of a description of the blight that has attacked your Grapes. It may be mildew or the berries might have been scalded by the overheated air, which it is impossible for anyone to say with such exact particulars. I may, however, tell you that a good many Grapes have gone wrong this season owing to the long drought, and I notice the crops are the worst where the borders have been cropped with flowers or vegetables. Those who failed to



Apple "Lord Suffield."

water their Vine-borders thoroughly in the months of May and June ought not to complain if their Grapes are not in a satisfactory condition, as it is very certain the roots of the Vines required more moisture than they got.

4127.—Pots becoming green.—There is no help for the pots becoming green when the plants growing in them require much water and have to stand in a shady place. Too much water would, of course, induce the green matter to appear, and a stiff soil would only aggravate the evil, but neither are the only causes of the disfigurement of which you complain; it is a combination of circumstances which only altered conditions can change. Certainly pots covered with green will be injurious to many plants.—J. C. C.

All the causes named have some influence, and the water, in some districts, seems to have a tendency to produce this green growth on pots, and also on the surface of the soil in the pots. The plants growing in a damp, shaded house get green sooner than in a greenhouse which is well ventilated. Plants are better in clean pots. It will be better washed off occasionally.—E. H.

4202.—Destroying ants.—I have had no difficulty in getting rid of ants when the position they occupy admits of some petroleum being sprinkled about their runs, but it requires to be done every day for a week. It appears to me that they dislike the smell, and so find out more congenial quarters. Another simple plan is to get two or three saucers and cover the bottoms of them with sweet oil, and place them near their nest. The ants will get in the oil and not be able to get out again.—J. C. C.

4205.—Treatment of a Passion-flower.—You had better take care of the young shoot by securing it to the wall, and at the end of next March move it to the fresh position. Meanwhile prepare the place for it by digging out a hole 18 inches deep and 2 feet over, and as you put the earth back mix some rotten manure with it. The Passion-flower likes a rather light soil, so that if yours is inclined to be heavy you had better mix some lighter earth with it.—J. C. C.

Move the plant at once; there is plenty of time for it to get established before the winter yet. Of course it should be moved with a good ball of soil round the roots. Dig the site up well, adding plenty of sand or road scrapings if the soil is naturally heavy, and see that the drainage is good, but do not use anything in the way of manure beyond a little leaf-mould—it is unnecessary, and, indeed, injurious. This plant grows quite strongly enough when planted out in ordinary garden soil, and manure only renders the growth soft, tender, and flowerless.—B. C. R.

4183.—Pot-root Dahlias.—As soon as the side shoots have grown long enough out them off at a joint, and each cutting should be planted in what gardeners term thumb-pots; they are small in size, but much deeper in proportion to ordinary flower-pots. Place them in a garden hot-bed, which should not be very hot, merely warm enough to throw off a little moisture. Keep the frame rather close, and shade from bright sunshine. The cuttings will soon form roots, and when established in their flower-pots should be repotted into large sixty or small forty-eight sized pots. The plants form nice tubers in these flower-pots; and when the stems decay store them in a dry place for the winter.—J. D. E.

Pot-root Dahlias may be obtained by striking the cuttings in pots at any time from early spring until the end of July. I am engaged at the present time in striking a lot of cuttings obtained from plants growing in the open of sorts that I find do not keep well as ground roots. These are chiefly the White Pompon varieties, such as White Aster and Lady Blanche, which are difficult to keep in any way through the winter, but much better in pots than out of them. The cuttings strike freely now in a cold frame, if kept close and shaded.—J. C. C.

4122.—Bog soil.—This is really peat, or of a peaty nature. If rendered moderately rich by the addition of manure, almost any kind of vegetable can be grown in it with perfect success, and it is excellent for Potatoes, though on such ground they are very liable to disease in a wet season. Lime and kainit (saltpetre) are two of the best fertilisers for such soil, and in growing Potatoes be careful to avoid the too liberal use of farmyard or stable-manure, depending chiefly upon superphosphate of lime for bone-meal and some kind.—B. C. R.

OUTDOOR PLANTS.

BULBOUS FLOWERS.

The bulb octogones are beginning to pour in now, and many readers will be perplexed to know the best kinds to select for giving beauty to the garden in the spring months. The three more important types are the Hyacinth, the Tulip, and the Daffodil.

THE HYACINTH may be grown in three ways—in pots, in glasses, and in the bed or border. It is much grown in glasses for windows and rooms, and the cultural details are very simple. Green glasses are best, and the bulbs look better in them than in receptacles of any other colour. Select good bulbs and let the water only just touch the base, putting a little salt or charcoal in each glass to keep the water clean and pure. Watch to see if a fresh supply is needed, as if it becomes at all foul success cannot be expected, but the water should always be of the same temperature as the house or room. When the glasses are filled put them in a cool, dark cupboard, or even a cellar, for about three or four weeks, until roots have been formed, when remove them to the window so that they can enjoy full light and plenty of air. When grown strongly the growth is vigorous, and the flowers of bright colour. The water will evaporate quickly, and must be replenished. Many seem to think the winter season suitable for putting Hyacinth bulbs in water, but the best month in the year is November, the single varieties being much better than the doubles for growing in glasses. In the culture of bulbs a great fault is not in their actual management, but in late planting. Bulbs got into the ground in September, or October at the latest, always give finer results than when planted later in the year, as the soil in autumn is usually fairly dry, and there is a good season before winter. When delayed later, frosts occur, the ground is wet, and sometimes the festival of Christmas has passed before a start is made. Under these circumstances the spikes and flowers are not satisfactory. All bulbs should be planted thus early, Daffodils in particular, which may be put in at the beginning of September. It is not necessary to have specially prepared soil for the growth of ordinary bulbs; but it is as well, if at all poor, to incorporate with the staple a moderate dressing of well-decayed manure, and the bulbs of the three great classes mentioned may be put about 3 inches under the surface. Clumps of one variety, or several judiciously contrasted, are effective, and the Daffodils may be planted freely in the borders, reserving the Tulips and Hyacinths for the beds.

BRILLIANT and varied in colour is the Tulip; and the early single and double varieties are planted more largely than the later-flowering types. The Dutch kinds are thoroughly useful garden flowers, their richness in beds compelling attention. Plant them also in the borders, a few clumps here and there, creating a wealth of colouring. Delightful beds may be composed of Tulips, with a groundwork of Forget-me-nots, Silene, and some other carpeting plant of equal prettiness. One could bring in thus the fine Apennine Wind-flowers where the garden is small, and no woodland walks occur in which to naturalise such spring beauties. As regards cultural directions, follow these given for the Hyacinth. A bed of Double Tulips, carpeted with Pink Silene, Daisy, and White Forget-me-nots, is very charming—a sheet of colouring without garishness. A beautiful and familiar garden Tulip is *T. Gesneriana*, which is the parent of the many fine florists' varieties. Its bold, handsome, scarlet flowers are familiar in old-fashioned gardens, but it is a bulb that should be brought into more use. The bulbs are more expensive than the ordinary kinds. Amongst the species which first are

T. elegans (blood-crimson), *T. Greigi* (the leaves spotted and barred with chocolate, the flowers orange-scarlet), *T. macrosepalii* (carmine), *T. oculis solis*, *T. retroflexa* (yellow), and *T. vitellina* (sulphur white).

DAFFODILS, or *Narcissus*, form a glorious family. A bed of the Yellow "Trumpets" dancing in the breeze is a true spring picture. The Daffodil marks the final departure of winter. One secret of success in the culture of the bulb is to plant early, and once the clumps have got established they may be left alone, although where the culture of the *Narcissus* is made a speciality of they are lifted once every year, and



Rosy Meadow Saffron (*Colchicum autumnale roseum*).

the common kinds every two years. Damp is hurtful, and the soil should be moderately light, selecting, if possible, a south or west aspect. In every garden, however, they will flower well, and all are quite hardy, except in a few instances. As with the Hyacinth, so with the Daffodil. The bulbs may be grown in glasses, but not actually allowed to touch the water. The temperature of the water should be about the same as that of the room; they thrive under very simple conditions, similar to those recommended for the Hyacinths. The bulbs will then flower well. The "Trumpet" varieties, those that partake of the character of the common wilding, the *N. pseudo-Narcissus*, are most suitable for outdoors in this form. An enthusiast in Daffodils will soon get to know the best varieties, and they include *Empress* (a splendid Daffodil, the flowers large, the broad petals white, and the Trumpet yellow), *Horsfieldi* (the big-flowered lorifolius *Empress*, bright yellow), *maxims* (rich yellow, almost orange, a beautiful variety), *princeps*, *Barri* (conspicuous yellow, with scarlet eye), the double *Orange Phoenix*, or *EGGS* and *Bacon* (white and orange), *Sir Watkin* (the yellow flowers of great width), *Jonquils*, positions ornatus, and the common *Poot's* Daffodils. The bulbs may be put about 4 inches under the soil, and when to be lifted this should be done after the leafage has died down. It is a bad plan to disturb them while the foliage is still green, or to twist their leaves into a knot. What a wealth and beauty there is in bulbous flowers! Take

THE CROCUSES, and see the rich varieties of colours supplied by the many forms. Every one is familiar with the common blue, yellow, and white Crocuses that form broad lines to the beds in the London parks, and provide amusement for the mischievous sparrows, never so happy as when pecking the dainty petals. But besides the spring-blooming kinds we have a rich autumn gem called *C. speciosus*, rich blue, barred with purple, the stigma deep orange. A clump of this on a late September day is delightful, and yet it may be accounted a rarity, although useful when out. The autumn *Crocus* are quite as easy to grow as those proper to the season of spring, whilst acquaintance with them will whet the appetite for the Meadow Saffrons (see illustration), a very beautiful class of autumn-flowering bulbs. The common Meadow Saffron (*Colchicum autumnale*) that yields the famous drug, is a lovely garden bulb, purple-rose being the colour of its flowers, whilst there are several forms of it, as a *plum* (pure

white), *fl. album-plenum* (double white), and *fl. roseum-plenum* (rose-purple), the flowers of very large size. *Colchicums* must not be exposed to the full influence of the weather, and the reason is obvious. Amongst Grass they look extremely pretty, and receive in a measure shelter from the hoary reins of late autumn. A sweet gem of the early spring is the *Netted Iris*. Other *Iris*es flower early in the year, and are each attractive, but *I. reticulata* bears away the palm. I remember once visiting the gardens of Lord Suffield, at Cromer, where the bulb was established in the woodland. The flowers have a distinct Violet fragrance, a few plants in a pot accenting a large conservatory. Moderately light soil and a sheltered situation are suitable, the flowers appearing about March. During recent years more favour has been shown to the English and Spanish *Iris*es, which bear their bold, beautifully-coloured flowers in the early autumn. The so-called English *Iris* is *I. anglica*, but it is really a native of Spain, the reason of its popular title being that bulbs of it were brought from England to Holland, and the impression of the Dutch was that it was a native of Britain. These *Iris*es are hardy, robust in growth, attaining a height of from 1½ feet to 2 feet, thin broad handsome flowers displaying a border of purple, violet, blue, and lilac. We owe many of the finest novelties to the Dutch, who have done much good work in producing splendid bulbous flowers. Plant the bulbs early in the autumn, not closer than at a distance of 6 inches apart, and put them at a depth of 3 inches. A good growth results in ordinary soil, and they are not averse to life in the suburbs. A delightful companion to the English *Iris* is *I. hispanica*, which is known, and appropriately, too, as the Spanish *Iris*, or *Flag*. It blooms shortly before the English kind, and the flowers are smaller, without that broad, massive appearance characteristic of *I. anglica*. Both thrive under the same treatment, and we get a great range of colours, from pure white to clouded orange, dusky browns, shot with other hues, a curious assortment of varied tones. Perhaps the white or yellow flowers are the most striking, and if only two varieties are grown, select those of that character. Who does not know the familiar old

CROWN IMPERIAL? It has many varieties, and all are hardy, bloom in the spring, and grow in ordinary garden soil. The writer has seen the yellow kind, named *intea*, in a little back garden not far removed from the busy Loudon metropolis. Put the bulbs about 3 inches deep, and leave them alone to grow into bold, telling, picturesque clumps. Fourteen varieties were counted in one catalogue, but really only the common kinds, *aurora* (red), *lutea* (yellow), and *Slagwasard* (a delightful shade of red), need be considered.

THE GLADIOLUS is a glorious bulb or corm, as it is correctly called, and there are a great many varieties, hybrids, and species. Few plants of the present day are in greater favour, or have been more hybridised to gain new kinds. *M. Lemoine*, the celebrated French florist, has, through his zeal in crossing one species with another, inaugurated new sections, as *Nancianus*, *Lemoinei*, &c., all playing a good part in the decoration of the border. Care is necessary in embarking in Gladiolus culture. The many splendid varieties that attract the eye at exhibitions are not always the most tractable in the garden, but general rules can be laid down for cultivation. *G. gandavensis* represents a splendid section, and then there are earlier blooming varieties, as *G. Colvillii*, *G. ramosus*, and others, all possessed of distinct beauty. Clumps of Gladioli between Herbaceous *Phloxes* look well, and the soil should be fairly light, with a moderate quantity of manure mixed with the staple. Damp or stagnation about the roots results in almost total failure. Success can never be looked for under such circumstances. Put the bulbs 4 inches in depth, and half a foot apart, March being a good month for planting, bulbs put in during April carrying on the succession of bloom until later in the autumn. Even as late as June they may be put in to provide a continuance of gay flowers. The hardest of the Gladioli are the Hybrids of *G. Lemoinei*, which are very easy to grow, thriving where the other varieties fail utterly. A splendid kind for colour is *G. brenohlyensis*, the flowers rich-crimson; but in the many Hybrids of *Gandavensis* there are exquisite

shades of colour, distributed in bars, stripes, and delightful mottlings on a pure-white ground, sometimes touched with rose. Begin cautiously at first, and see if the *Gladiolus* relishes the situation, soil, and surroundings of the garden. If this is fortunately the case the corns may be planted with a bolder hand. *Bahianas*, *Ixias*, *Sparaxis*, and *Tritonias* are not bulbs for the average garden. They require much attention, and need especially warm situations; but a few clumps of *Cyclamen europæum*, the little hardy, autumn-flowering "Sow breed," seem to bring a gleam of sunshine to the rocky or border in late autumn.

GEMS amongst spring-flowering bulbs are the *Chionodoxas*, and the two best are *C. Luciline*, appropriately named the *Glory of the Snow*, and *C. sardensis*. The *Glory of the Snow* is such a weed that it will sow itself and prove almost a plague, if such a delightful starry-blue flower can be thus described. *Sardensis* has much deeper coloured flowers, and is not quite so free in bloom. A stately September-flowering bulb is *Hyacinthus* or *Galtonia candicans*, a native of the Cape, sending up in the autumn sturdy spikes to a height of over 4 feet, the bell-shaped blossoms pendent, like the nodding *Snowflake*, appearing at intervals on the vigorous scape. If there is space for a group of hardy *Fuchsias* plant the *Galtonia* amongst the shrubs, as the white flowers and pendent scarlet strings of blossoms on the *Fuchsias* are in rich contrast. Nor would the garden be in any sense complete without the old-fashioned *Allium Moly*, living in the poorest soils, and making gay patches with its yellow flowers. A shady moist corner may be reserved for the *Lily of the Valley*, the *Dog's-tooth Violet*, *Erythronium americanum*, and the many beautiful varieties of the common *E. dens-canina*, the nodding *Snowdrops*, the summer *Snowflake*, *Lewcojum aestivum*, and its relative *L. vernum* (that as its name suggests blooms in the spring), the *Muscari* or *Grape Hyacinths* (rich blue of various shades), the old *Star of Bethlehem*, also *Ranunculuses*, and, for a sunny border, where the soil is light and warm, the *Swamp Lily* (*Zephyranthes caudata*).

C. T.

ORANGE STONECROP (SEDUM KAMTSCHATICUM).

This is a beautiful broad-leaved prostrate species (see illustration), not unlike *S. spurium* in habit, but distinguishable from it by dark orange-yellow blossoms. It flowers profusely in summer, and is quite hardy in almost any soil, but it succeeds best in a warm, rich loam. All lovers of the beautiful *Stenocrops* should certainly add this species to their collection.

4184. — **Shamrock.** — The best treatment is to plunge the pot out in the open air, either in the border or in ashes or Coco-nut-fibre. The plant is quite hardy. — E. H.

4196. — **Sowing down a lawn.** — Better sow the seed at once. The ground is moist now, and the seed will soon germinate and grow very fast. Of course, the turf will not be very strong this year, but it will have got a start, and there will be a beautiful sward next spring. — B. C. R.

— Apply a rich top-dressing and sow the seeds at the beginning of September. — E. H.

4212. — **Artificial manure for a garden.** — The manure should have been applied when the Potatoes were planted, or before. It is a great mistake to manure the ground for Winter Greens heavily, as the plants then make a too rank and sappy growth, and fall a prey to the first sharp frost, but if manured for the previous crop it will be just right for them. The last fertilizer that can be applied now is soot (if the land were light a little salt might be added), with some wood-ashes or burnt soil. Jost hoe or fork it lightly into the surface, put in the plants, and make all quite firm round their roots. If the soil is very poor, a light sprinkling of good guano, or of Thomson's Vine-manure, might be added, just to give the plants a start, but anything like luxuriant growth is detrimental, and must be avoided. — B. C. R.

— I should make a dressing of soot do for the green crops this autumn. A good high quart of soot to every square yard of ground spread on the surface and forked in is the best way to apply it. For the spring and summer you cannot do better than use the English Guano. It is a capital fertilizer, and its properties are not quickly exhausted. It can also be obtained at

a reasonable price, and instructions as to quantities are sent with it, which I have found to be quite reliable. — J. C. C.

4204. — **Treatment of Carnations.** — If the plants are old and straggling layer some of the shoots at once, and make a fresh plantation in September. If close and tufted, as the old *Clove* is on some soils, the plants may be left undisturbed for several years. *Carnation Grenadin* is a selected type that comes very fine from seed, and is easily raised. It is too late to sow now with any prospects of bloom next year. Sow next spring, and plenty of plants will be obtained for another year. — A. H.

— The old *Clove* and *Grenadin* are both best propagated by layers. If the plants have been one year only planted, it is a good plan to leave a few layers around the old plant to flower next year. The surplus layers can be removed and planted somewhere else, but to do the *Carnation well* it requires rich, deep soil to grow in, and when this has been well-manured the plants will do two years in succession on the same ground, but it is necessary to give them a surface-dressing with some rich material in May. — J. D. E.

— By all means layer the plants annually, and this should be done at once — the sooner the better. You may either lift the rooted layers and replant them in the autumn, or if you prefer large dense masses let them remain and flower where they are. If the shoots of the plant of "Grenadin" are not strong enough to layer, take them off with a sharp knife and insert them as cuttings; they will root fast enough in light sandy soil under a handlight, kept moist (not wet), and lightly shaded. I should say that a little variety in the way of a few plants of the *White Clove* (*Cloire de Nancy*), or *Mrs. Muir*, *Raby*, *Mrs. R. Hole*, &c, inter-mixed with the others, would be highly advisable. — B. C. R.

4124. — **Management of a garden.** — First, as regards the north wall, or border, which you say is sheltered. If so, you must not expect great things from plants put in there. I should plant *Ivies* for climbers, and none is better than *canariensis* or *Emerald Gem*, a very quick-growing kind with abundance of glossy green leaves, or you can have also such kinds as *Lee's Silver*, if you wish for a variegated form. In the border plant *Lilies of the Valley*, the graceful *Solomon's Seal*, *Spanish Squills*, very charming in the spring; there are white, blue, and rose-coloured varieties. Ferns would succeed well, and there is a wealth of fine hardy kinds. The beautiful *Funkias*, or *Plantain Lilies*, as they are also called, *Lilies*, the *Mossy Saxifrage*, and the *London Pride*, *Creeping Jenny*, and such

or we may say early, but early in autumn they may be put in, also a number of bulbs, such as *Daffodils*. You should devote your energies now to getting the soil into proper order. If very heavy, lighten it by the addition of lime, in which small gardenes are usually very deficient, or any light soil from some neighbouring place, which you may possibly get very cheap. The position in the fall and is better adapted for hardy flowers, and you will be able to have a few *Roses*. General *Jacqueminot*, *Barouess Rothschild*, and *Mme. Gabrielle Luizet* will succeed well. These must be planted in the autumn, say October, in a good loamy rich soil, otherwise the growth will not be very satisfactory. *Roses* need a liberal diet. Get bush plants, not standards. The reason, doubtless, for the *Clematis* appearing in ill health is through a too dry or poor soil. It is most likely that the recent hot weather has effected it severely. If you wish to make the garden gay at once, plant *Zonal Pelargoniums*, *Tuberosa Begonias*, or such like bedders, but you cannot get much effect this year, the time is too short. Prepare for next year, and with a judicious selection of things the garden may be made bright with colour. Get in bulbs, such as *Daffodils*, *Hyacinths*, *Tulips*, and the *Crocus*, also such pretty little things as the *Glory of the Snow*. Sow a few annuals, *Sweet Peas*, *Sun-flowers*, being important; then you can plant in the autumn *Hollyhocks*, *Careations*, and *Pinks*, and in the spring *Tufted Pansies*, which are really the most useful things one can have in a garden. Read carefully my note in *GARDENING* on "A house border" (No. 750, July 22, p. 287). A carefully compiled list of things is given there, which are also suitable in your case. — C. T.

4124. — **Dandelions on a lawn.** — The best way to eradicate the roots of these, as well as *Plantains* on a lawn, is to cut them off with a sharp old knife, and then pierce the root with an iron skewer or bennet pin dipped in carbolic acid. This effectually prevents another start, and it is not an expensive process like pouring the acid on each plant, for a single bottle will last a long time if merely used as a dipper for the skewer. If the *Dandelions* are very numerous the Grass will look rather bare when they are taken out; the best remedy for this is to sprinkle the lawn with a mixture of fine soil and soot in equal quantities, only just enough to darken the Grass, not to cover it up. This washing down to the roots with the rain will so nourish and thicken the Grass that it will soon cover up the bare spots from which weeds have been exterminated entirely. — I. L. R.

4116. — **New Zealand Flax.** — This handsome plant flowers well in the south of England, except after a hard winter. A group of *New*



OUR READERS' ILLUSTRATIONS: *Sedum kamtschaticum*. Engraved for *GARDENING ILLUSTRATED* from a photograph sent by Miss Emma Wolley Dod, Edge Hall, Malpas, Cheshire.

things as the *Monkey-flowers*, which also like a fair amount of moisture. With a good selection of these you will get a rich variety of colours, ranging through many shades, some finely spotted. It is very late to plant things now,

Zealand Flax, which stands in the garden in Devonshire, which the writer had had for the last six years, has flowered well three times during that period; three years ago it also flowered. It is very late to plant things now,

handsome spikes of bloom which it threw up. This was, however, after a specially mild winter; severe and long continued frost and snow, such as we have had, with blizzards, for the last two years, appeared to check it considerably, and no flower appeared after these seasons. During the Jubilee summer, which was very hot, the plant flowered well; also the following season, so that it appears that it is only necessary for it to receive sufficient warmth to flower each year in the south of England.—I. L. R.

INDOOR PLANTS.

FREESIAS.

This is the best time to pot these beautiful flowers, and although they are by no means difficult to cultivate, a good many fail to get them to flower satisfactorily. As these plants are so extremely popular a brief note on the way to manage them may be of service to those who have hitherto not been successful. The first thing is to produce good strong flowering bulbs; they are not large even at the best, but unless of the size of ordinary Snowdrop bulbs they will not flower. Five or six-inch pots suit them well, and the soil they do well in is rotten turf, broken up fine, and a little leaf-mould, and peat-soil, with sharp silver sand; crook the pots in the usual manner, and fill about three parts full of soil, pressed down firm, and on this place about six or eight bulbs, covering with soil, and set them in a cold frame. Do not give much water until they commence to push the foliage well above ground. They require an intermediate temperature, if it is desired to get them into bloom early in the new year; but if required for spring a shalf in the cool-house suits well, and when pushing up their flower-spikes, a little weak liquid-manure helps them greatly. After they cease flowering, and the foliage shows signs of changing colour, reduce the quantity of water at the root until they can be dried off and rested. J. G. H.

RAISING SEEDLINGS.

The experience of "Mr. W. Cotton," as given in GARDENING, no p. 269, is eminently gratifying and encouraging, and will no doubt induce many others to "go and do likewise," or try to do so. I have always been a strong advocate for growing Pelargoniums and many other plants from carefully-saved seed in preference to stocking a large number of costly "named varieties," and there is nothing more fascinating than thus to raise seedlings and watch the flowers expand one by one. But I should like to remind "Mr. Cotton," and all whom it may concern, that such an occurrence as he describes is by no means common, and indeed is an extremely "lucky hit." He may try again a hundred or a thousand times and not be so successful. That four seeds only (and self or chance-fertilised ones, too) should have produced four first-rate and different varieties, is little short of marvellous. I have raised some pretty good Zonals myself, but I may mention, as a contrast, that during the last three or four years I have raised and bloomed hundreds of seedlings from the very best named sorts, all carefully fertilised, and though I have obtained several very good and pretty flowers, there have not, so far, been six out of the lot efficiently distinct and superior in character to be worth sending out as "named varieties." There is more "luck" in this kind of thing than anything else, though skill and perseverance, of course, count for a great deal. B. C. R.

4192.—Sensitive plant.—They are not more difficult to grow than other warm greenhouse annuals; they are raised from seeds in spring, started and grown on for a time in peat, then moved to the greenhouse for the summer. They are generally treated as annuals, though they may be kept through the winter in a warm-house. The Sensitive plant (*Mimosa sensitiva*), is a native of Brazil, so must have warmth in winter.—E. H.

—These plants may be grown on a second year or more, but I find they do best treated as annuals. Sow the seed early in the year in a hot-house, and as the plants increase in size pot

them on, and they will flower well in 5-inch flower-pots. The leaves drop off in winter, and the plants should be kept rather dry at the roots, and in a temperature of 50 degs. to 55 degs.—J. D. E.

4190.—Camellia cuttings.—Place the plant in a 3-inch pot, draining it well, and using a light mixture of peat and sand in equal parts, with a little leaf-mould, or equal parts of loam, Cocoa-tut-fibre, leaf-mould, and sand will do almost as well. If possible, plunge the pot in a gentle hot-bed, but in any case keep it close, moist, and shaded until rooted out and forming again. I have never struck cuttings in this way, but I do not see why they should die if you can get the roots to lay hold of some sweet, sandy soil before they run too far. The sooner the cutting is potted now the better.—B. C. R.

—The sudden change of taking the rooted plant from the water and planting it in soil would be the cause of many of the young plants dying, especially if care is not taken to preserve the young roots. Every plant might be preserved if taken out of the water and carefully potted in sandy peat soil. Give a good watering overhead from the fine rose of a water-pot, and place a bell-glass over the young plant to retain moisture about it until the roots have taken hold of the soil. The bell-glass should be removed daily and wiped dry.—J. D. E.

—Cuttings rooted in water are rather more difficult to establish in soil than when rooted in soil, as roots made in water are always more or less delicate. Still, with careful watering, there should not be many losses.—E. H.

4109.—Potting Cacti.—Now is the best time to repot them, providing the roots have well filled the ones they are now in; hot do not repot if unnecessary, as they will grow to a large size in very small pots. This summer has been very good for growing out-of-doors, my garden being unusually dry and hot. Drought and heat they enjoy, being mostly natives of the hot parched plains and slopes of Mexico. I have several of mine out-of-doors, but move them in by September.—E. J. YOKES, *Kingsworthy*.

4171.—Double Begonia buds.—"T. S." complains of the buds of his double Begonias dropping. I can quite sympathise with him as to double Begonias under glass. They drop cruelly and disappointingly. I have been told in GARDENING that it was a matter of ventilation, but I have not found any amount of ventilation prevent it, and some Begonias are capricious. I have a beautiful double crimson. It opened its first hatch of buds well, and held the flowers for a good time. Since then it has dropped every one. I have tried one expedient which I think has been tolerably successful. I have nipped off all the single buds as soon as they appear. The plant does not look so handsome as when the blooms are in clusters, but the double ones under this system, I find, generally remain on and open. Single Begonias do not seem to be addicted to this vice of bud-dropping, and therefore seem best adapted for amateur cultivation.—CENTRAN.

4210.—Heating a small greenhouse.—The wash-house will be a capital place for the boiler; the coil is small, but if properly set ought to afford sufficient heat. I have never constructed a furnace on the plan suggested by "G. H. W.," and should not like to say how it would answer. If I were doing the job I should put in one with an ash-pit (9 inches deep) and five bars, in the ordinary way, placing the lowest tier of coil 6 inches above the bars, and enclosing it in a circular tapering furnace 1½ inches larger than the coil all round. Exit into chimney to be a clear course above the highest tier of coil; this course being brought in well so as to keep the pipe itself out of the direct draught into chimney, which would soon burn it through. A tight-fitting door should be fitted to ash-pit, with a draught regulator, so that when once going the draught could be almost stopped. This is the best "slow-combustion" principle.—B. C. R.

4199.—Treatment of bulbs.—White Lilies, Snowdrops, Daffodils, and Crocuses will do for a considerable time without transplanting. Still, they are better lifted occasionally for the purpose of thinning the bulbs. For planting in beds in connection with bedding plants, Crocuses, Hyacinths, Blue Squills, Snowdrops, and Tulips, are suitable. In some instances the

planting of the summer bedders may have to be delayed till the end of May or beginning of June. The bulbs, under careful management, may be used year after year. It is best, if possible, to leave them undisturbed till the growth is nearly completed, and then move elsewhere to ripen, keeping them occasionally watered till the growth dies away gradually. The increase or deterioration is pretty much a matter of management, but it is important with early-flowering bulbs, such as Snowdrops, Crocuses, and Squills, that they be not kept out of the ground too long in autumn. This is one cause why they make a poor show in spring. October is quite late enough to plant.—E. H.

—Most bulbs do best undisturbed in the ground year after year. They should, of course, be planted in the first place in good soil well worked, and manure placed underneath them, away from the bulbs, but so as the roots can easily reach it. Some bulbs are injured by the manure coming into contact with them. The most popular and beautiful of the spring-flowering bulbs are the Crocuses, Scillas, Snowdrops, Iris reticulata, Chionodoxa Lucilla, and C. ardensis (the Glory of the Snow; the plants flower amongst the melting snow of their native habitats), Leucojum verum. Most of the Lilies should become established. Fritillaria, Crown Imperials, Colchicums, Narcissus in great variety, &c. The bulbs usually planted out in the autumn and removed in the spring to make way for the bedding plants are Hyacinths and Tulips.—J. D. E.

—Your question necessitates a rather lengthy answer. The best season for planting bulbs is, taking them generally, the autumn, and as early as possible. As you appear to be going in rather strongly for bulbous flowers bear this in mind, many failures in their culture occurring through delaying the planting until the verge of winter, and they have to be put in under disadvantageous circumstances. I give here a few general rules about bulb culture. In the first place the soil must be well prepared, not too heavy, and the bulbs just, as a rule, about 3 inches below the soil, the smaller bulbs at a shorter distance than those of larger size. The Daffodil is an important subject. You can get a rich variety of kinds, and I should select the following twelve kinds to commence with—you can add others as your love for them increases: Emperor, Empress, or Hornfield; postious, better known as the Phoenix's-eye, the most useful form of which is ornatus, and the double white, a beautiful Gardenia-like flower, Stella. The Orange Phoenix and Tolomanus plena, two good double kinds; the charming little N. nanus, the Yellow Hoop Petticoat, N. conspicuus, Sir Watkin, Queen Ann's Double Jonquil, and regulous. This small list comprises varieties of very different character, embracing the finest Trumpet and Poets' kinds. As regards their after treatment, you must let the foliage ripen off naturally as far as possible, and lift the bulbs, thoroughly drying them in the sun before storing. They may be stored in a cool place out of the reach of frosts, and replanted again in the following autumn, commencing first with the Poets' kinds. The bulbs will produce offsets, which will provide new stock, and the old ones will last some time. If you like, you may leave the bulbs in the ground for two years, but certainly not longer. The great bulb growers lift the major portion of their stock each year. I ought also to have mentioned that bulbs, as a rule, are much averse to damp, and, therefore, if your garden is wet and low-lying, raise the beds in which the bulbs are planted above the usual level, so as to let superfluous moisture drain away. So much for the Daffodils. Now a word as to the Tulips. You should have a few of the ordinary Dutch varieties, which bloom early, and are very bright and showy. Give them similar culture to the Daffodils, but I should also get a few of the later flowering kinds. Possibly you will not care to spend much in these, but such kinds as T. fulgens (splendid crimson), a tall, fine Tulip, T. macropisella (carmine-rose), and T. apetalata (rich crimson) are well worthy growing for their noble flowers. Plant them, as we should all bulbs, in good clumps, as then a rich effect is got. Hyacinths need also similar treatment, and you can purchase these cheaply in mixture. Crocuses and the Chionodoxas must also be included. The latter are very

charming, and as easy to grow as almost any bulb. Get first *C. Lucilla*, which in time will prove almost a weed. It has blue flowers, produced very freely in racemes, and either on the rocky or in the border it is pretty. *C. cardensis* has dark-blue flowers, and is very handsome. These you can allow to remain in the ground. The common *Star of Bethlehem*, another spring-flowering bulb, is not to be despised. I had a border of it this year, which was extremely pretty. The bulbs are not dear, and the flowers are pleasing, although unfortunately they only open in the full sun. There is a small selection, but you will find a wealth of beauty in the various kinds, and all are easy to grow.—C. T.

TREES AND SHRUBS.

TREE PEONIES.

The selection of the best spot in the open garden for a Tree Peony (see illustration) is a matter of more importance than any subsequent attention which it requires. It must have an open spot away from the shade or shelter of trees; but, if possible, it should be sheltered from north and east winds, which, as a rule, prevail in spring, about the time when the plant is pushing out its new growths. It should be the aim of the cultivator to retard the growth as much as he can, and if the locality is

acting effect, inasmuch as the young wood did not ripen, through want of sufficient sunshine. As to position, it is generally admitted that Peonies look best when isolated on a lawn, not far away from a shrubbery or a group of some sort, but so situated that they appear to have some connection with one or the other, as the case may be. Being deciduous, a spot should be chosen for them where they would be backed up by Evergreens for the sake of the winter effect. G.

4196.—Cutting *Laurustinus*.—The best time to prune or cut back this plant is in the spring, after the flowers are over; then it starts into growth again directly, and flowers are produced more or less the following winter. It is rather late now, but after this rain a fresh growth would soon be made, and if done at once there would be a decidedly better prospect of plenty of bloom the winter after next than if left until next spring.—B. C. R.

—Cut the *Laurustinus* hedge after blooming is chiefly over in spring—say, in March.—E. H.

4189.—Propagating Birch, &c.—The common Birch is propagated from seed sown in the open ground. The seed ripens in September, and should be gathered and dried. Keep it in a dry place and sow it in beds in March. Sandy soil seems to suit the Birch best, and the beds should be made level, sowing the seed thinly

in the temperate-house at Kew, where some good bushes were planted out in the beds. The form of *Kerria* in general cultivation—viz., that which bears throughout the summer great numbers of deep golden-yellow flowers like small double *Roses* is really handsome, and despite the frequency with which it occurs in some places, it is in others a neglected shrub.—T.

Spiraea palmata.—One of the best dwarf shrubs comparatively in beauty now is this *Spiraea*, which makes a glow of colour in the garden with its beautiful rosy-crimson flowers. It is unfortunately not much grown, although bright and handsome, and in ordinary soil succeeds well. One usually finds that by the side of a stream or pond the growth is unusually robust, and in such a position the masses of flowers are most telling. One reason of its supposed tenderness is its culture so largely in pots; but the plant is quite hardy, liking best a well-drained soil. Always contrive to get a spreading mass, as the effect is much richer. There is a white variety, similar to the type, and named *alba*. The flowers are creamy-white instead of rose-crimson, and elegant in pink; but the typical kind, the crimson-flowered kind, is the most useful and effective.—V. C.

ORCHIDS.

ODONTOGLOSSUM WILCKEANUM

PALLENS.

The flower "S. J." sends, and which he calls the tree crispum, is not that species at all, but it is what I take to be the kind named above. Why this plant required a distinctive name is more than I can understand. *Wilckeanum* is a supposed natural hybrid between *O. crispum* and *O. luteo-purpureum*, and it was first introduced by the Messrs. Low, of Clepton, about fifteen years ago, and it has frequently been imported since in the original plant. The flowers of a good variety are between 3 inches and 4 inches across. The sepals and petals are broad, the latter broader, the ground colour being pale-yellow, more or less marked with chestnut-brown; but in the variety now before me, having a ground colour of French white, variously spotted and blotched with chestnut; this is one of the very best of the natural hybrids, being of good strong growth, which sends up a spike of good flowers, and you may well be proud of it; but you may rest assured that this is the name of the variety you send. The plant thrives well with those of *O. crispum*, *O. Hilli*, and various others, and you in all probability received it intermixed with plants of *O. crispum* and *O. luteo-purpureum*. I do not think it is necessary to say more of this variety now. I have some recollections of saying something of it before in a previous number of GARDENING, and I do not wish to occupy the space with repetitions, but you have a most excellent form of this so-called hybrid. MATT. BRAMBLE.



Tree Peony in flower in Scotland.

naturally warm, the Tree Peony will require particular attention, otherwise a sharp frost in April will destroy both growth and bloom. It is the practice in many places, and a very good one, to protect the plants by a movable glass light, or by fitting up around them a temporary framework on which is placed muslin, canvas, or other thin protecting material during the most critical time, that is, from the time when the young shoots begin to lengthen till all fear of frosts is over. If a plant is overtaken by frost, without protection, then the best thing to do is to screen it at once from the morning sun, so that the plant may thaw gradually. In some districts no protection is necessary, and this is the case principally in inland gardens, which are colder than those in the valleys, and therefore vegetation does not start so early. In old days when Tree Peonies were as much thought of as *Cattleyas* are now, all manner of devices were resorted to in order to tide the plants safely over our treacherous springs, for it was found that scarcely any amount of cold during the dead of winter harmed them. In many parts of the country, indeed, they were unscathed through the terrible winter of 1837 and 1838. Some hygone Peony growers used to plant on the north side of hills, so as to retard growth, but such situations had a counter-

over it. Cover very slightly indeed, and tread the ground firmly, merely levelling it with the back of a rake. When the young plants are a year old transplant them. There are numerous choice varieties of the Birch, which must be propagated by budding or grafting on seedling plants of the common variety.—J. D. E.

—The Common Birch is raised from seeds, and the weeping varieties by grafting on the common variety. All trees which produce seeds are best obtained from them. To this class belong the Hazel, Beech, Sycamore, Ash, Chestnut, &c. Birches are usually layered, and this method of propagation is suitable for many trees where cuttings are difficult to strike.—E. H.

Variegated-leaved Kerria.—This form of the old *Kerria japonica* has the leaves variegated with pure white, and it can with confidence be recommended to those fond of variegated-leaved shrubs, as the marking is clear and distinct, while the light coloured portion does not become at all discoloured by exposure to the summer's sun. Like the ordinary form, its flowering season extends over a lengthened period, but the blossoms are single, and not double, as in the *Kerria* that is usually seen. The golden-coloured flowers nestling among the variegated foliage has an uncommon and at the same time very pretty effect. It is quite hardy, and succeeds well in light, warm soils. Under glass, too, it is very useful, and in this way it is prized for many years a very attractive feature

MILTONIA WARSCEWICZI.

I AM asked by "G. Lambert" to tell him the name of the flower which he sends, and to say something of its native country and the best method of cultivating it? The first portion of this request he will see stand at the head of the article, which may not accord with the name he has it under. This plant would appear to have been first found some sixty years ago; but it was not until about forty years back that it was named by Reichenbach after the collector to whom it stands dedicated, and it was not until the year 1868 that it was introduced in a living state, when I saw it with Mr. B. S. Williams in a living state, and in the following year, being in Germany and coming down through Belgium, I saw it again with M. Linden at Brussels. Reichenbach would appear to have been misled with some of the varieties, for he named in 1863 *Onocidium fuscum*, and as a decided mark of the favour in which it was held it was also known in many gardens by the name of *Odonoglossum Weltoni*. It is an erect-growing, but dwarf, evergreen plant, the bulbs being compressed and sharp at the edges, and each bearing a single leaf. The plant, when well grown, attains to a height of about a foot, and it is of a light, pleasing green colour; the spike rises to some 15 inches or 18 inches, very often if simple it bears many flowers, and these are set somewhat closely; but when it becomes

paniculate it bears many flowers. The sepals and petals are somewhat similar in both shape and colour, being undulate on the edges, sometimes reddish-brown with a white tip; at other times they are of a good full yellow, the extreme tip being recurved in most instances. The large lip is somewhat orbicular and deeply bilobed, the central part purplish, having a patch about the centre, as if newly varnished. Beyond this is a zone of rose-lilac, and beyond this is an outer marginal border of white. These beautiful flowers vary considerably in the brilliancy of their colours in the different varieties, but all last long in full beauty. My first acquaintance with this plant was in Mr. Williams' establishment, and he told me that the collector that sent it to him said he found it at a greater altitude than that at which he found *Odontoglossum Alexandrie*, so that I tried my plants in the same house with them; but they did not do well here in the winter months, and I removed them to a warmer position, giving them a heat of about 55 degs. at the lowest, and keeping them very evenly moist, and in this temperature the plants rapidly improved. And so I would advise my enquiring friend, "O. L.," to do. He may remove the plant to the warm end of the *Odontoglossum* house in the summer time, when it likes an abundance of water and plenty of moisture in the atmosphere, and this may be given with impunity if the drainage is perfect and in good working order, and it likes to be potted in good peat fibre and Sphagnum Moss. It enjoys a good exposure to the light, but do not allow the sun to shine upon it during the hottest part of the day, but provide a light shading to be drawn over it at this time.

MATT. BRAMBLE.

SACCOLABIUMS AMPULLACEUM AND CURVIFOLIUM.

I AM asked by a friend, signing himself "An Orchid Learner and Lover," if these two names do not represent one plant? Now, these two *Saccolabiums* are quite distinct plants, though they belong to the same section, and resemble each other inasmuch as they both have richly coloured flowers, borne on upright spikes; but here all resemblance ends, and if my friend has seen, as he says, "two Orchids bearing these names, but could not see any difference in the plants, never having seen either flower," then I would say that it is two names given to one plant, but which I cannot say; but I hope that after reading this article he will be able to determine which is which. *S. ampullaceum* is a neat Orchid that was known in the early days of the century; but I think we are indebted for it in a living state to my old friend Gibson, whom I frequently visited when he was in charge of Battersea-park. Well, he was collecting for the Duke of Devonshire in Northern India in 1837, and sent some plants home to Chataworth from the Khasia Hills, and this was the first time I think it was seen alive in our gardens. There was no means of getting the plants down by rail then, there were no fast ocean steamers, and no Suez Canal to slip through in those days, but all the plants that were sent home had to come round the Cape of Good Hope in sailing ships, so that they required good packing. The Messrs. Low, of Clapton, imported this plant in considerable numbers, and the Messrs. Rolleston, then having a fine nursery at Tooting some twenty years ago, introduced a magnificent form of it from Burmah, which was called *Moulmeinensis*, which was much stronger in its growth, and which made a taller spike with larger and brighter flowers, but the normal plant has short and straight ligulate leaves, which are truncate at the ends, somewhat thin, and pale-green, the spike is erect, shorter than the leaves, the flowers being set close together and of a pure rose colour, and these will last in full beauty for a fortnight or three weeks, but it is not well to allow them to remain upon the plants as long as they would do. *S. curvifolium* is a very different plant, having leaves crowded, thick, and coriaceous in texture, with sharp-pointed ends; the spikes are erect, and they bear a dense raceme, which is 6 inches or 8 inches in length, the flowers being of a bright cinnabar-red, with a bright orange-red to the spur of the lip. Now both these plants like to have their roots free in the air, and they will thrive best in a hanging position near the light

and they should be suspended in small Teak-wood baskets, well-drained, and for soil use simply fresh Sphagnum Moss. The temperature of the East Indian Houses is requisite for them, and a nice moist atmosphere. Of course, shading will be provided for these plants when the sun is too powerful.

MATT. BRAMBLE.

LILIUM CANDIDUM.

THIS lovely Lily, where it does succeed well, is one of the finest hardy plants in cultivation; but, unfortunately, no amount of coaxing will cause it to flourish in some places. As it succeeds well here, I will briefly describe the kind of soil and mode of culture, in the hope that some may be enabled to grow it who have hitherto failed. Our soil is a rather light loam, resting on gravel, and I think that abundant drainage is necessary, as I find fine clumps of this Lily in the most robust health in cottage gardens close by, where the soil is very shallow and poor. This season being very hot and dry,



Flowers of Madonna Lily (*L. candidum*).

Lilium candidum, in common with other hardy flowers, was in full bloom quite early in June, considerably in advance of its usual date, as all the blooms not cut had dropped before July 1st. But the crop of bloom did not suffer from the drought like many other flowers, as after the flower-spikes are formed, and the buds fairly well developed, the blooms will open without any help from the roots at all, if placed in water, or even placed in any damp place, and I cut a great many of my finest spikes before a single bloom is expanded, for if intended to be forwarded any distance, it is much easier to send them in closed up bud state, and they will expand beautifully in water. Various opinions prevail as to transplanting, but I find the finest spikes come from beds the second and third year after transplanting, and I seldom let any stand longer than four years in one place. Shelter from rough wind is desirable, but not shade, except for the purpose of retarding a portion of the stock, which, whether grown for private supply or for market sale, is one of the best flowers that can be grown. It forces well.

JAMES GROOM, Clapton.

FERNS.

MAIDEN-HAIR FERNS FOR CUTTING.

WHERE there is any great demand for out fronds of these Ferns, the earlier started plants will no doubt have been run upon somewhat hard from the time their fronds were fit for use. It will do these plants a considerable amount of good if they are for a few weeks kept quite cool and comparatively dry at the root, only just sufficient water being given them to prevent actual suffering. Whilst this is being done all the shabby fronds may with advantage be cut off; in fact, when the plants are quite dry at the roots, it will not do them any harm to cut off all the fronds that have been left, although thinning out would be safer where the plants are at all overpotted. These plants, after a few weeks' rest, will again start into good growth and perfect a crop of most useful fronds for the winter season. It will not be advisable to repot any plants from such a stock now, this would rather tend towards a soft growth—in fact, Maiden-hair Ferns are frequently far too much overpotted when this object of a cut supply is the chief and all-important point. When sufficient rest has been allowed them, the plants should be given a fair amount of warmth, but not with too much moisture in the atmosphere. A pit, for instance, from which a crop of Melons has been taken would be a good position; here they would be tolerably near the glass with probably the chance of a slight amount of fire-heat if needed. The all-important matter, however, is to secure a hard growth; this is best done by free exposure to light with a liberal amount of ventilation, and, as before advised, not too much moisture. When the growth becomes free and plentiful, then it must be seen to that they do not suffer at the roots from want of water. In the case of a stock which has not been run upon hard and which has been grown on in the usual way without early starting into growth, the fronds will now be well hardened and in good condition for cutting. These plants will continue to grow for a long time to come, thus forming a good succession of fronds. As in the case of the others, too much shading is a great mistake; this, combined with a moist atmosphere, produces large pinnae, with fronds also that are frequently much too large for use, whilst they never last nearly so long as the smaller ones when cut. Plants grown in this way might, it is true, be considered to be well developed; but this is what is not required from a practical point of view; besides, light-coloured fronds are always the most sought after by

FLORAL DECORATORS as being the most effective. These can only be had when the plants are not grown in too kind a manner. Another point which is by some growers overlooked or not given enough consideration is that of the soil; if too much reliance is placed upon peat, there will always be a tendency towards vigorous growth. On the other hand, by using a light fibrous loam or heavier loam that is corrected by the addition of a little peat, the results will be found far more satisfactory. I have previously alluded to keeping the plants in a fairly light position. This may in some cases (it is so in my own case) be somewhat of a difficulty, particularly where the majority of the houses are specially devoted to fruit culture, the occupants of the roofs thus imparting too much shade. Rather than attempt to grow the plants in such positions, it will be a better plan to keep the stock in cold frames with a light shade upon the glass if much exposed. Frames can usually be spared at this season of the year; in some instances they are not nearly all to be found in actual use about now, the lights often being for the time stacked away upon their sides. Here, then, those who have a good stock of plants may safely place them when so situated as not to be able to give them a fair chance in their houses. If this were done more than it is we should not see so many Maiden-hair Ferns drawing out a miserable existence in places totally unfit for them. As an instance of this, I would only allude to the one fact—viz., that of still continuing to grow the plants in the heat and moisture of a stove-house at all times of the year, frequently overpotted and as much overwatered. Another fine place for securing a good enduring growth is upon shelves, where the plants have always a free circulation of air playing around them. In such positions they will, of course, be found

to dry up quickly, but this should not be any drawback in the least. The basket culture of these Ferns should be more practised where possible. By this mode of culture a good stock of fronds will frequently be in hand when the pot plants have been hard out, simply because the basket plants are not so accessible at the moment. The smaller growing Maiden-hair which assume a rosette tint will be found to be further intensified in colour when grown fairly well exposed to the light and air, although most of these require rather more warmth than the common kind. *A. tinctorum*, *A. rubellum*, and *A. Veltahl* are three of the best of these to supply occasional fronds in a cut state. Where seedlings of any kinds are seen to be springing up they should be well cared for, a young stock of these being always useful to supply the place of the older and somewhat exhausted plants. Wherever it is possible and practicable also, I would advise the extended culture of Maiden-hair Ferns planted out. This may be done upon bare walls hitherto occupied by merely fixing some wirework to the face with a little soil; margins also to stages may be planted with decided advantage. Besides *A. uncinatum* for cutting, note should be taken of *A. elegans*, *A. mundulum*, *A. deflexum*, *A. Williamsi*, and *A. Bausei*.

FLOWERS IN SMOKY SUBURBS.

I WAS much interested by an article on this subject in GARDENING of July 1st, page 241, as doubtless were many other of your readers. I cannot, however, help thinking that "C." has mentioned several plants scarcely suitable for small town gardens to the exclusion of others, quite as easily grown and brighter looking, that succeed admirably in smoky districts. For instance, the German Iris requires to be grown in bold masses, whilst the necessary space cannot be given in small gardens. Again, in such places the Sunflower has a very cumbersome appearance; *Michaelmas Daisies*, too, have a very weedy, decayed look about them. My garden, which is situated hardly a mile from Shore-ditch Church, in the smoky district of Dalston, is generally bright from April to November; but this would hardly be the choice of plants were confined to the list in the article referred to. Amongst perennials, which do well with me out-of-doors (I have no greenhouse or glass of any kind), are *Lilies*—*L. candidum* (the old White Lily), some bulbs of which have been in their present positions eight years, and they bloom freely each year; so also do *croceum* (orange), *avarticum* (orange-scarlet), *ohalcedonioidum* (the old sunset Turk's Cap Lily), and *speciosum album* and *rubrum* (a most valuable and hardy kind). *L. auratum*, on the other hand, do not succeed so well, as they fail after the first or second year. Some *Roses* do well—viz., *John Hopper* (a pink cabbage-shaped H.P.) blooms freely, sometimes twice in a season, and lives for years; and the *Bourbon Rose*, *Souvenir de la Malmaison*, a lovely flower, flushed with pink-white, is a splendid plant for a south-west wall, the buds being a very nice shape when just opening, and although it has not perhaps more than five or six blooms at a time, yet the flowers are produced in succession from May till end of September. *Moss Roses* also thrive, but do not bloom as freely as I could wish.

THE BLUE PASSION-FLOWER makes a grand town plant, blooming with the utmost profusion. I have often had from forty to fifty flowers open at once for weeks in succession; unfortunately, however, it sometimes succumbs to severe frost, a five-year-old plant of mine being killed in the long, cold winter of three years ago. *Clematis Jackmani* (the purple-blue variety) always does well on walls or arches. The *Evening Primrose* (*Oenothera morocarpa*), a trailing variety with large sulphur-yellow flowers as big as the top of a breakfast-cup, succeeds well on rockwork; and so also does *Cresping Jenny*, with its hanging shoots smothered with Buttercup-like flowers. *Aemone japonica alba*, *Delphiniums*, and *Carnations*, are all that "C." claims for them as town plants. The *Double White Pink Mrs. Sinkins* is another good thing; the scent is delightful, and although rather a pod-burster, the blooms, which are produced almost without number, make capital button-holes. *Double Pyrethrums*,

too, do very well, especially the white variety, *Mont Blanc*, and the rose-coloured *M. Barral*; these bloom early in May, and if the stems are cut back to about 6 inches after flowering a second crop is often produced in September. The *Double Convolvulus* makes a very good climber; it has fine blooms, something the colour and shape of the old Maiden's Blush *Rose*, and, if anything, is too vigorous, as it spreads like a weed, requiring constant pulling up to keep it in bounds. The name is given in catalogue as *Calystegia pubescens plena*. *Scilla nutans*, *Snowdrops*, and *Grape Hyacinths* do well on a raised bed or rockwork. Amongst annuals there is a large choice. *Phlox Drummondii* is splendid; *Godetias*, *Purple Scabious*, *Zinnias*, *Linum rubrum*, *Coreopsis*, *Corianders*, *Candytuft*, *French Marigolds*, and the climbing and dwarf *Nasturtiums*, are all exceedingly useful. *Virginian Stock* makes a charming spring border, whilst patches of *Shirley Popples* are startling in the brightness and variety of their hue.

Nicotiana affinis (Scented Tobacco) grows everywhere, and is smothered with its lovely star-shaped fragrant blooms of a pure white colour, filling the garden in the evening with their perfume. *Sweet Peas*, too, bloom freely and for a long time if the seed-pods are constantly picked off (this should be done to all plants if continuance of bloom be looked for). *Snappdragons* and *Tufted Pansies* (*Violas*) are first-class subjects for town gardens; the show and fancy *Pansies* also do well if the season be not too dry. *Double Dahlias* and *Ten-week Stocks* are also good. The latter can easily be raised from seed if sown in a shallow box in February, and hung up under a skylight, and are very useful to fill up the borders with colour and fragrance during late summer and autumn. Of course, there are many others that could be named suitable for town gardens, but I think with a list like the foregoing no Londoner need despair of having a gay and fragrant garden. If I have not trespassed too much on the Editor's space I should like to give a list of the plants in bloom in my garden at the end of June—viz., on walls: *Sweet Peas* and *Tropaeolums* of various colours. *Blue Clematis Jackmani* and *Rose Souvenir de Malmaison*. In borders: *John Hopper*, *Madame Gabriel Luizet* and *Maiden's Blush Roses*, *Nicotiana affinis*, *Snappdragons*; *Candidum* (45 blooms open at once), *Croceum*, and *Tetaceum Lilies*; *Annual Cornflowers*, *Shirley Poppies*, *Scabiosa caucasica*, *Clove Carnations*, and other varieties; *Sweet Williams*, *Marigold (Meteor)*, *Evening Primrose*, *Mignonette*, *Pencils*, *Delphiniums*, a few *Phlox Drummondii*, and *Virginian Stock* for a border. In centre beds: No. 1, *Calceolarias*, *Oenariums* (*John Gibbens*), *Blue Lobelia*, and *Violas* (pale-cream with a blue porcelain edge). No. 2, *Calceolarias*, *Geraniums* (*Henry Jacoby*), *Blue Lobelia*, and *Silene ruberrima*. No. 3, *Calceolarias*, *Geraniums* (*John Gibbens*), with a border of *Countess of Kintore Violas*.

H. S., Dalston.

BEES.

4268.—*Bee-hives*.—I would thank "S. S. G." if he would kindly advise me under the following circumstances. A friend of mine some years ago bought several hives of Bees on the property he was taking over. One of these was in a wooden hive, built of old soap-boxes and such stuff, and made to no measurement whatever. As the notion struck the former owner, he added to the height of the box, which, by the way, I first built round an old straw sheaf. The Bees have "raided out" all through the box, building combs from the roof and sides, and mixing things up promiscuously. Last summer I attempted to open them up, and, if possible, transfer them into a civilized hive (bar frame). In this I failed (completely), but got some half-hundredweight of honey, with a delightful assortment of dead and dying Bees, though I handled them as gently as possible. They raged furiously for some days after, and stung any and everyone who came into the garden. I have been asked this year to try again, and I was speculating on the propriety of putting a bar-frame hive, with a false bottom and hole in same on top of the hives it stands, and try to induce the Bees to take to the new hive. The Bees are very strong, as they have great room. I don't like to break the whole thing up, as the queen might get lost, and the brood wasted—in fact, my idea is to try and get the Bees to take up their quarters, hatch out all the brood in the old hive, transfer their stock of honey upstairs, and clean the combs out generally, and to do away with an impracticable old hive that nothing can be fitted on. It's a fearful hash, and appalling to look upon. I'm not an expert, but can manage my own Bees, and do not fear a neighbour's at times, but I confess this is a serious business. Can it be accomplished without stinging too many Bees?—T. H. B.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of GARDENING, 37, Southampton-street, Covent-garden, London. Letters on business should be sent to the PUBLISHER. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed before the query replied to, and our readers will greatly oblige us by adhering, as far as their knowledge and observations permit, to the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appeared.

4250.—*Roses in borders*.—What *Rose* continues in flower in out-of-door borders the longest?—A. E., SUZEX.

4251.—*Fancy Pansies*.—I should be glad of some information on the cultivation of fancy *Pansies*?—BURTON-ON-TRENT.

4252.—*Manure for Roses*.—Is Rape-dust or bone-dust too strong a manure for *Roses* in out-door borders?—A. B., SUZEX.

4253.—*Rhododendrons in a clayey loam*.—Can I grow with any chance of success *Rhododendrons* in a good light clayey loam?—SCROGIA.

4254.—*Best Gooseberries*.—Would someone kindly give me the names of eighteen to twenty-four best *Gooseberries* for dessert and cooking purposes?—BURNHEAD.

4255.—*Double Pyrethrums*.—As I am about to grow double *Pyrethrums*, I should be glad of any information respecting them as to cultivation, best time for planting, &c.?—BURTON-ON-TRENT.

4256.—*Colours flowering*.—Will anyone kindly inform me how I can grow these plants so as to prevent them flowering, and the proper size of pots to grow specimen plants in, and soil?—CONSTANT READER.

4257.—*Plants in a bedroom*.—I have a room facing due west, and shall be much obliged if someone will kindly tell me what plants are likely to flourish and flower well in it, and also how I should treat them?—M. B. C.

4258.—*Lilies after flowering*.—Will someone please inform me what to do with *Lilium auratum* and *Lilium Harriet* after flowering in order for them to bloom well next year? What is the treatment?—B. ROBERTS.

4259.—*Flowers in a garden*.—I should be greatly obliged if someone would tell me how I secure flowers in my garden the greater part of the year? What should be planted or sown for spring blooming, and when?—DEVON.

4260.—*Borax and plants*.—Would someone kindly tell me if powdered borax is injurious to plant life? Both it and alum have black beetles, and I should like to try it for slugs, &c., if it would not injure the plants?—A. E. DALZIELL.

4261.—*Winter flowers*.—What will be the best plants to have in hand now to furnish a continuous supply of flowers for out-of-door through the winter months in an ordinary greenhouse kept at a temperature of about 40 degs. F.—SCROGIA.

4262.—*Seeds of "Geranium" and "Fuchsias"*.—Will someone kindly inform me when is the right time to plant the seeds of "Geranium" *Purshii*, &c., and when to put them into pots, and should they be placed into a greenhouse or not?—O. CLARK.

4263.—*Weeds on a lawn*.—During the late dry season the weeds on my lawn have got ahead, particularly a yellow Hawkweed, which increases rapidly. Will someone kindly tell me the best way to prevent it from spreading and to eradicate it?—C. H. F. C.

4264.—*Plants for a south-east conservatory*.—Will someone kindly tell me the best plants for a conservatory with a south-east aspect at Beckenham? I have hitherto failed to grow anything in it to my satisfaction, and I do not want to devote much time to it.—J.

4265.—*Carnations and Pinks for the open air*.—Will someone kindly give me the names of the best dozen *Carnations* for the open air (*Gloosetombs*), all *lily* loam? Also the best half-dozen *Pinks*? I want them to be as distinct in colour as possible.—C. W. W.

4266.—*Mountain Cudweed on a lawn*.—I have an old lawn now being overgrown with *Cudweed* which I have tried to pull up, but the roots run along for some distance, and then break off. Will someone oblige me by saying if it is possible to extirpate them?—W. B., Edgbaston.

4267.—*Rose "La France"*.—What situation is best for *Rose La France* (dwarf)? I have one in a south aspect, and each year it gets so thoroughly blighted with caterpillars that the blooms seem withered as they form. Should it be moved, and, if so, when and where?—E. ROBERTS.

4268.—*Rose not thriving*.—I should be much obliged if "J. C. C." or "B. O. R." would tell me the reason why my *Rose*—*Ice W. A. Richardson* does not grow well? I planted it in a border against the house wall last October in a bed facing south, with good rotted soil and manure.—BURNHEAD.

4269.—*Treatment of a Hydrangea*.—I should like to know what to do with a *Hydrangea* I bought in October last? It had been cut down to within about 3 inches of the top, since I purchased it, it has thrown three or four shoots about 1 1/2 feet long, but has never bloomed.—BURNHEAD.

4210.—Planting Christmas Roses.—I want to make a small plantation of Christmas Roses. As I'm moved to my present abode a month ago I could not do it early in the year. When would be best time to effect my purpose? The plants I must buy. Should I do it now or wait till October?—BIRKENHEAD.

4211.—Strawberry growing for market.—Will this year in Somersetshire? Of course, the fruit would have to be sent into large towns and disposed of; but it is good warm land. What sort would be best to grow for market or general culture, and what would be the usual average weight of produce per acre in good seasons?—G. D.

4212.—Peaches in pots.—I should be glad to know if Peaches can be successfully grown in pots in a cool greenhouse facing south? If so, which are the best sorts, what time of year should they be started, and what is the proper treatment as regards pruning, soil, &c.? Are they difficult to manage, and do they require much attention?—M.W.K.

4213.—Potato Onions, &c.—Would someone kindly give me the correct botanical name for the "Earth or Potato" (Gaulth) I mean the kind of which you plant the "and" many other bulbaceous attached to it. Also, what is the right time to plant or sow it? Any information as to prevent cropping of a vegetable garden would be greatly obliged.—DEVON.

4214.—Fowls in a field.—I have a small field of 2 acres or 3 acres, sowed, like all others, have a very small crop of hay this year, but now it is growing again. Two or three persons whose gardens run on to the said field have let their fowls into it, although asked not to do so. What can I do with them, as they scratch and pick all the best of the new Grass and spoil the growth?—G. CLARK.

4215.—Arum Lilies for Christmas and Easter.—I want my Arum Lilies to flower at Christmas; what treatment must they have? After blossoming they have been placed in open ground for 2 months and have died back, where they are now sending up young leaves. My greenhouse is only kept up to 43 degrees, heat in winter. I also require some at Easter. What treatment is needed?—A. BOSTONIAN.

4216.—Pruning hedges, &c.—Will someone please to say when should privet hedges be pruned, also quick hedges? My gardener has not done them yet and says it is too soon for "would have to cut them twice." Also kindly say if Roses were properly cut in last season should there be now a quantity of old wood on Fisher Holmes, Boule de Neige, Captain Christy, &c.? He says the best heat has done this. Advice acceptable.—X. Y. Z.

4217.—Carrots failing.—I have a bed of Carrots, which up to a week ago appeared to be flourishing; but a space about a yard square suddenly withered, and on examining them I find they are attacked with what looks like a small white centipede. The ground has been well worked and manured. I notice other plants on the same bed and these drooping from the same cause. The carrots about 3 inches and 4 inches long. I should be glad to know what should be done to the land when the crop is off to kill the centipede?—H. SANDYBAY CLARK.

4218.—Fruit-trees for garden walls.—In the autumn I am going to plant fruit-trees by my garden walls, the most common being Pines and Apples. Would someone kindly advise me whether I should do best with pyramids or those to train to the wall, and what sorts are considered most suitable and profitable? I prefer trees producing well and of the kitchen varieties. Of course, I might vary and try a dessert kind or two if there would be no difficulty as to a crop. My garden is suburban, entirely removed from manufactories, and very open. The soil is a good turfy loam, fairly deep on gravel beds, water being found at a depth of 5 feet.—W.A. FRISBY.

4219.—Treatment of pot-Roses.—I shall be pleased if anyone will inform me what will be best to do with pot-Roses that have grown leggy and are without much foliage? I have several good plants, but that is their fault. They are now out of flower, and have been cut down. I have no growth, but only from the top. I do not care for any more flowers this year. I only want them to be in bloom in a cold-house, say the middle of next June. Should I cut them hard back now or let them grow on till next spring? Any information with respect to the above will oblige? Some of the varieties are named Captain Christy, Merville de Lyon, La France, Ulrich Brunner, Etienne Levot, Marie Beaumain.—YORKSHIRE.

4220.—Erigeron aurantiacus, &c.—Will some expert give a hint for growing Erigeron aurantiacus? I have failed utterly. The plants do not die, but gradually withdraw into Mother Earth. Rich soil, poor soil, east, west, and south aspects, all have been tried. But I have many other plants that grow like weeds. Shorter grass-cultures in shade, post seed grit (on a loam foundation), and shelter. In the same bed Epilaea repens is growing gloriously. It will be covered up with a thick blanket rubbed with vaseline, from December to March, as I consider it worth any pains bestowed. One spray dipped with blossoms will last a week and fill the room with the perfect fragrance. Also, should they be kept in flower, half rose.—MRS. SANDYBAY CLARK.

4221.—Gathering and storing Pears, &c.—I should feel obliged for information on above, as after all the cultivation of fruit-trees is for the enjoyment of their produce, and to gather the fruit, or so late as to have the trouble and labour in bringing trees to perfection. I have the following with times when fit for use by catalogue: garden in Isle of Wight, so perhaps earlier: Louise Bonne of Jersey, October; Duchesse Angoulême, October, November; Plimston Duchesse, October, November; Williams' Bon Chrétien, August, September; Jargonelle, August; Centre Clairgeau, November. Some, I believe, should be eaten from the tree, and others be gathered a long time before maturity. Also, should they be kept by bottles, and which kinds should be kept in the dark or in the light; if in the latter, how long before required for use? The best means of protecting pyramids and standards to prevent birds eating the stem portion of fruit, by which many crops are completely destroyed in my garden?—J.R. COL. D. L. BRANT.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

4222.—Oatlaya Rex (R. C. F.).—I will have something to say about this flower next week.—M. B.

4223.—Epidendrum species.—Learner sends me the bulb of an Orchid requiring its name, and I think it is an Epidendrum, but as there are between three and four hundred plants known by that name, I cannot tell him which one it is. I must decline to answer, therefore, until it flowers.—M. B.

4224.—Tuharous Begonias (David Griffiths).—You should give these a little Gray's fertilizer, about a spoonful once a fortnight to start, and you would find them gather a great deal of strength, the plants like this I have just given mine their accustomed dose, and these are now flowering very freely.—J. J.

4225.—Oryctochium maculatum (Learner).—I think this is the plant of which you send me a spike of bloom. It was introduced about fifty-five years ago when this genus was commonly used for it, and the plant was well known in my earlier days by this name, but I think Lindley had long before included it in the genus Oncidium, but you may call it whatever you like best.—M. B.

4226.—Oatlaya otrina, which has done flowering (R. C. F.). The plant will now be forming new growth, and it requires to be hung up in the Cattleya-house in that portion devoted to the Lælia excepta. The plants should be placed in a nice sunny position, and they may be syringed every morning and evening. They will not get too much water during the time they are growing.—M. B.

4227.—Dendrobium formosum (H. B. Evans).—This in the name of the flower you send. It certainly is not D. burmanni. It would appear to be a low country plant, and it requires to be kept in good heat and moist for the greater part of the year. You say you have it flowering freely, in which state it is very beautiful. The flowers are of a more convenient size for a lady to wear than D. formosum giganteum.—M. B.

4228.—Ferns for exhibition.—J. Coleman asks me to name a dozen of the best kinds for show purposes; but he does not say what he wants, British and hardy kinds or exotics, and if the latter such reporters as say of these that Mr. So-and-so exhibited a "group of six large Ferns of the common exotic species," is misleading. Evidently the common exotic species is at a discount. Will someone tell me what that is?—J. J.

4229.—Oncidium macranthum (H. M. Turner).—Well, it is late for your plant to only now to be coming into flower; but I hope it will come, and that it will prove to be a very good form. You say you purchased it of Mr. Oypher, of Cheltenham, and that is a good firm, and if he had flowered it previously he could have told you before to sell his plant; if he sold it as an untried plant, you must flower it to know if it is a good variety or not.—M. B.

4230.—Oncidium labelliferum (H. B. Evans).—I have no doubt but the spray sent, and which you say was produced from a plant bought under this name is incorrect. It is nearly allied to O. curium, G. Gardneri, and G. pratense, and, indeed, some make it to be synonymous with Gardneri, from which, however, it appears to me to be quite distinct. I should certainly retain the name, and maintain its distinctness, and I could see by comparison reason for changing it.—M. B.

4231.—Cypripedium longifolium (T. Atkins).—This is the name of the flower you send, and not O. Spicatum. I do not know two plants that are more different and distinct. The first belongs to the Saintpedium, and the last to the true Cypripedium. The first is found in the mountains about Cherqui in South America. Stones are found in Borneo, on the limestone hills about Sarawak. It is very wrong for anyone to so mislead persons in the naming of their plants.—M. B.

4232.—Oncidium species.—F. J. Hamilton sends me a spray of what appears to be a kind of Oncidium; but as the flowers are not such as I have seen in cotton-wool, which is the worst material possible to use for this purpose, it was no wonder that they were shrivelled beyond recognition. You have waited a long time (ten years) for the flower. However, you have gained your point at last, and I should like to help you to name. Can you not make a drawing of it and send?—M. B.

4233.—Epidendrum vittatum majus (H. M. Turner).—The flowers you send appear to have been attacked by thrips, although there were none visible on the flowers; but I advise you to take care the houses are cleaned of these pests. I have observed that thrips abound this season in and about the border flowers, and your houses are doubtless contiguous to these, and they have migrated from one to the other. See that these insects do not gain a footing, or you will simply lose the beauty of the flowers for the present season.—M. B.

4234.—Odontoglossum hastilabium.—Thos. Cooke says how is this? His plant showed two spikes of bloom at the beginning of June. They grew to within 1 foot and 3 feet in length, and when he expected to see the blossoms he had to give up, as the spikes were so small, with a quantity of black specks upon it. Well, now, I should imagine "T. C." has kept the atmosphere too hot and too dry, and that the thrips which are so prevalent on the outside flowers have got to the inside plants, and have marked the spikes of his Odontoglossum for their prey. Well, he must get rid of them, and see that the pest are killed, and that the atmosphere is kept in a moist and cool condition. Thrips cannot stand a moist condition of the atmosphere.—M. B.

4235.—Odontoglossum cirrhosum (J. Dunford).—This is the name of the specimen you send and not O. nevium, which, however, is not so rare as it was before Mr. Sander introduced the last named beautiful plant, which no one had found in the last decade or two, since it was originally introduced by M. Linden of Brussels. The present species although beautiful cannot compare for elegance with O. nevium. The sepals and petals have thin seed lengthened out into long tails. These are creamy-white, bisected at the tip, and are of the same color as the same colour with some yellow. It thrives along with the same species in the coolest house. I think it is to Mr. G. Bull, of Chelsea, to whom we are indebted for the first instance for this plant in a cultivated state.—M. B.

4236.—Odontoglossum Pascoarei.—I have received this plant in three forms from two readers. One of them says he has these two forms from some imported plants. The one marked 1 is a very large flower, but it is more stately than the specimen generally. I should advise the sender, "T. M.," to grow this on for a time, when, perhaps, the flower will improve in shape, and if it does it will be a grand one. The flower marked 2 is a variety having the back of the sepal and petals streaked with rose colour. The flowers, "H. B. Evans" sends are not large, but they are beautifully spotted and blotched and spotted on the lip with magenta-purple. I advise both my friends to continue to grow them on, then the flowers I expect will very greatly improve. You should remember the finest variety of Pascoarei that we have, called Veitchianum, developed its fine colours after being seen in bloom with a very little colour. Watch and wait.—M. B.

4237.—Treatment of Dendrobium.—G. F. W. appears to be in trouble about a plant of this genus, and he asks should D. nobilis be quite dried off in August? No, I think not. It would scarcely have finished up its growth by that time. Watch when the bulbs are about ripened up, when you should begin to withhold water until none is given, then remove the plant into a cool-house, keeping it quite dry. The plant should not be removed into the warm-house before the buds begin to show. D. speciosum should certainly not be dried off then, its growth not being finished, but when this is made up it may be kept quite dry. D. Devonianum when finished up should be hung in a sunny position in the greenhouse and be kept dry until the bulbs are quite ripened, when it may be taken into the growing-house again; but, of course, this will be much cooler than it was, and give just enough moisture to keep the bulbs from shrivelling. D. soaratum, being a stout bulbous kind, may be kept quite dry, saving just enough moisture to keep the leaves from becoming yellow. D. Jamesoni I never heard of, so I cannot advise upon this one.—M. B.

NAMES OF PLANTS AND FRUITS.

Any communications respecting plants or fruits sent to the Editor should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C.

Names of plants.—F. Z.—Arilla labellata.—D. L. H.—Ceanothus aureus.—Chafed.—Thorn Apple (Datura Stramonium).—Kilridge.—Diplazone (Mitsunaka glutinosa).—Sedum Ewersi.—Noria.—Bygonia Drezoi.—James Church.—Oxyphthalma paniculata.—South Staffordshire.—1, Begonia metallica; 2, Eranthis species; 3, Cereus speciosissimus.—J. Robertson Gray.—Yes, Labrador Teal-plant.—F. Cooke.—Specimens all rotten through being in damp glass. The best book you can get will be "Dictionary of Gardening," W. Nicholson, published by L. Upcott Gill, and Co., 170 Strand London, W. C.—L. P. S.—You really must send fresher specimens, and do not pack them in damp Ephemera. They are quite unrecognisable. In the inside.—1, Sedum kamisobadum; 2, Sedum kamisobadum var. 3, Not recognised; specimen too much dried.—William Storer.—Lilium chalcidicum.—F. Polegate.—4, Berberis Darwini; 5, Lycopodium formosum; 6, Pyrus Aria.—Hudson.—Clematis lanuginosa var.—F. R. Richmond.—Stachys lanata.—F. Forell.—A St. John's Wort (Hypericum) species.—M. Cade.—Impossible to name from such bad specimens.—Lyndon House.—Flower, Justicia carnea. Other specimens send in bloom.

Names of vegetables.—W. P.—We cannot undertake to name garden varieties of Peas.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

J. M.—Apply to Mr. T. Smith, Daley Hill Nursery, Nawry, Ireland.—O. P.—Send address.—S. C. O.—The plants are affected with the grub of the Marguerite Daylily. Pinch the leaves and do not destroy the grubs. Some of the worst leaves should be picked off and burnt. The matter has been treated of in GARDENING very many times lately.—A. Agrimur Chancellor.—We regret that we have not been able to make use of the negatives sent.—V. M. C.—We know of no book which contains anything like so much information on the subject as a volume of GARDENING. Any questions sent will be replied to.—John Williams.—The warps on the Vine-leaves are caused generally by too high and moist an atmosphere. Give freer ventilation, and no doubt the mischief will sensibly abate.—F. L.—The netting can be procured through almost any good seedman.—Ada.—Ripen the Peas and keep moist at the roots, and well expose the leaves to free them from dust.—Charles Davies.—The letter was received, and, we believe, answered. If not, please repeat query.—Amateur.—"Dictionary of Gardening," by W. Nicholson, published by L. Upcott Gill, 170, Strand, London, W. C.—M. M.—We have now only very early flowering Chrysanthemums. The mischief to the Lettuce seems to have been caused by the drought in the early summer.—G. P. Pittner.—Apply to the Garden Superintendent, Hattersea-park, London, S. W.—John Griffiths.—Takin and read GARDENING regularly, and send in any queries you like. You will get more information than from any book.—Creddon.—No doubt the judges were quite right in disqualifying you, as you showed two kinds of Tomatoes, and so had a mixture of sorts of vegetables.—An Amateur.—The Passion-flower pod seed is the fruit, and when ripe should contain seed.—J. Boulter.—The plants are affected with the Oudemans disease, for which there is no remedy; but clearing all our soil and all, and having a fresh start; half measure are no good.—Harry Brownrigg.—Please repeat your queries in a clear form as to plants you wish to know about, and give your name and address, please.—South Staffordshire.—The lettuce are no doubt wire-worms. Treat them with slices of Carrot as has often been described in GARDENING.

Drawings for "Gardening."—Readers will be glad to know that we have had several specimens of beautiful rare flowers and good fruits and vegetables for drawing. The drawings so made will be engraved in our next number, and will appear in due course in GARDENING ILLUSTRATED.

GARDENING ILLUSTRATED.

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CHRYSANTHEMUMS.

SELECTING THE BUDS.

SELECTING the buds is perhaps the most important point of all the details connected with Chrysanthemum culture, because if the right bud is not chosen it is impossible to obtain a perfect bloom. Instances of this occur frequently. Many complaints during November reach me of flowers which have hard green centres, do not develop, and throw out their petals in an irregular manner. In the case of the Queen family the petals are reflexed instead of incurved. Amongst growers there is a common term employed of "taking the buds." When a bud is forming at the point of the shoot, growth will cease for a day or so and again push into activity by the production of numerous growths on the same shoot. As a rule, shoots will spring first from the nodes below the flower-bud; in some instances as many as ten growths will push. In all cases the three top shoots grow much the faster, owing to their extra strength being at the apex of the plant. When these shoots are a couple of inches long, the flower-bud will then be sufficiently formed to admit of the cultivator being able to judge of its perfect form or otherwise. Sometimes, owing to a bruise or an attack from some insect pest, the bud does not present a perfect shape—round and clean. If this is so, it is useless to allow it to remain and expect a perfect bloom. Preparing, then, that the bud is all right, the side growths named should be removed to concentrate the whole energy of the plant into the bud selected. If the shoots are allowed to grow, say, 4 inches or 6 inches long, they are all the time robbing the bud of its store of nutriment. The

BEST TIME for taking the buds or removing the shoots is early in the morning, or in the evening when the dew is upon the plants; the shoots at that time are quite brittle. If the stem is held secure in the left hand and the young growths which are intended for removal be bent suddenly down one at a time, they snap off. After a little practice this method of taking off superfluous shoots is more expeditious than cutting them off with a knife, but if the operation is effected during the middle of the day when hot and dry, the shoots are quite tough, and the risk of damaging the flower-bud is much increased. As a safeguard against accident in the manipulation of the buds and shoots, some growers retain one shoot at the point for a time until it is seen that the bud is safely swelling to a good size, but this, I think, is wrong, as the growth is divided between the bud and the shoot retained, and the latter must to some extent rob the flower-bud of its due amount of sap. If any doubt exists that the bud has been injured, the retention of a growth shoot near a bud is advisable, as this will in due time produce another bud. I have explained at some length the method adopted to "take" the buds. Readers will be anxious now to know when this all-important point is to be carried out. Much depends upon a variety of

circumstances. For instance, one variety will need to set its flower-buds fully a month earlier than another; still both will be in flower at the same time. This is one of the details which experience of each variety alone can teach. Then, again, there is the difference in various localities. Take, again, the vast difference there must be between, say, the counties of Durham and Devonshire, for instance. Growers in the latter county have much more difficulty in obtaining perfect blooms than those residing in the North, or, say, the Midlands. This latter district is the most favourably situated of any in England, because there, what are known as crown-buds can be depended upon to give the best blooms.

CROWN-BUDS are those which result from the second natural break. Where crown-buds can be depended upon in the case of some incurved varieties to give the finest blooms, say, North of London, flowers produced from the same class of bud in the South would be quite useless. I mention this to show that no hard and fast rule can be laid down that will suit all parts alike. Japanese varieties need earlier bud selection than the incurved section, for the reason that size is of more importance in the former than in the latter, and in the Japanese blooms there is none of that evenness of petals to consider. E.

THE TUBEROUS BEGONIA.

THIS year the Tuberosus Begonia is not satisfactory—at least, not so bright in the garden as in cooler seasons. The reason is that the plant dislikes hot sun, which scorches the leaves and of course stops short the gay display that it is capable of making under more favourable conditions. But with cooler weather this fine bedder will "pick up," and create a wealth of colour later, when one may reasonably expect not another hot sun. Few things have undergone greater improvement, both in habit and blossom. Hybridists have raised up a class characterized by dense growth, compact, and neat, the flowers broad, robust, and displaying a great variety of colours from orange to vivid scarlet, ranging through a delightful series of refined shades, white, touched with salmon or peach. The simplest way to get a stock is to raise seedlings, and so great is the advance in all that concerns the Begonia that if the seed is purchased in selected colours, the plants may be depended upon to come true to those colours. Sow the seed early in the year in shallow pans or pots filled with very light soil, and the seed is so fine that it will not be necessary to cover it with soil, but merely sprinkle a little fine silver sand over it. Place on a gentle hot-bed or in a warm house, and when the seedlings are large enough to handle, pinch them off into other pans, from which they may be transferred singly into small pots. If the seed is sown in January the plants will be of sufficient size to bed out late in May, an excellent display of flowers rewarding the ardent amateur through the summer and autumn months. The corms may be taken up when frost has played its pranks, and stored away in a warm place until the spring. Then pot them, starting slowly into growth in November

pit, and syringing once or twice every day, but always harden the plants off well before bedding out. A rich, fairly light soil is essential, and if a little peat is incorporated into the bed much good will result, as Tuberosus Begonias grow well in peat. Shelter is necessary from cold, cutting winds, but moderate sunshine they enjoy. The method adopted in planting is a question of individual taste. Contrast the colours harmoniously and beds of one colour are charming, or say white, with an edging of the variegated Dactylis. The white-flowered varieties are exceptionally beautiful. V. C.

New Carnations.—Several new Carnations of great merit have been shown this year, and readers of GARDENING may care to know their names. I see that a strong reaction is taking place in regard to the selfs which a few years ago were placed quite in the background. A good addition is a variety named Jim Smyth, unfortunately not a pretty name. It is curious that although there is no want of pretty and appropriate names for flowers, little regard is paid to the important point of nomenclature. This kind is a good self, rich scarlet, a full, handsome flower, which does not split the calyx in the least. Such kinds are much wanted, but it is satisfactory to find that if a Carnation produces flowers with a split calyx it is considered practically worthless. This was not the case a few years ago. I recently made note also of a few other good selfs. Bendigo is deep purple, and a full, striking flower, useful for its somewhat uncommon shade of colour. A charming shade is that of Water Witch, a delicate blush, and both Ellen Terry (white) and Heyes' Scarlet, which has flowers of a bright shade, are of note. It is worthy of remark that the Yellow Carnations are improving greatly. The colour is very charming but unfortunately the plants are very poor in growth. They make few shoots, and these usually have a weak, sickly look, which quite destroys their beauty. However, we seem to be getting a race of Yellow Carnations of really strong growth, such as A. Campbell and Duke of Orleans, both very fine varieties as regards the colour of the flowers and also in growth. When the plants are really vigorous and free, a group of this coloured Carnation is pleasing.—C. T.

Lilium auratum.—No wonder that this gorgeous Lily still remains so popular, and that such a large quantity of bulbs are annually imported from its native habitat in Japan. If the bulbs are potted up in good turfy loam during the winter and covered with Cocoa-nut-fibre in a cool house, they will start vigorously into growth in spring, and if kept cool and near the glass, they will produce splendid heads of bloom in July, and they make a fine display in the conservatory just at a time when flowering plants are limited in variety. The perfume is too powerful for room decoration unless there is ample ventilation, but in the conservatory or greenhouse they are quite at home; after the blooms fade, set the pots out-of-doors and gradually reduce the supply of water, until the leaves die, when the pots should be laid on their sides and the bulbs re-d. —J. G. H.

GARDEN WORK.

Conservatory.

Where winter flowers are important attention must be given now to Zonal Pelargoniums which are coming on in a sunny spot, with their buds all picked off as they appear. Do not give large ebullitions. If the pots are not well filled with roots the plants will not get the growth sufficiently matured to flower well, and I may say, without a warm, light house to winter them in, their blooming will not give satisfaction. One of the most useful winter-flowering plants is the old Ivy-leaved Pelargonium, Mme. Crousse; the flowers are semi-double, and are produced very freely. The best place for them is a book shelf or a lean-to house. Plants of several years' growth, the shoots trained down the roof, will produce a good supply of blossoms for outing in winter in the genial temperature. These plants may be carried on year after year, being pruned back, say, in June, and the young shoots which break away trained over. They may be grown in large pots when the plants get old, or boxes will do, though for winter blooming I think I prefer pots—10 inch pots will be large enough to hold plants that will cover a roof 6 feet down. These Ivy-leaved Geraniums will cover larger space planted out against the wall, but the growth is not so short jointed, and does not flower so freely as when grown in pots of moderate size, in proportion to the age and size of the plants. If any hard-wooded plants require potting see to it at once, and get the plants well established before the short days come. Already the days are visibly shortening, and the maturing process of all plants intended for winter blooming is now going on. Winter-blooming Heaths must now be fully exposed, and not standing in a crowd. The same remark applies to the berry-bearing Solanums. Young plants of Bouvardias should go into 5-inch pots, and be brought on quickly to a good size. I do not favour the planting out system for these plants, as there is a difficulty in getting the plants established again after lifting. Azaleas in rather small pots in a pot-bound condition may have weak liquid-manure; clear soft-water will do. Lose oil time over to orderleg in the bulbs for potting. Freesias and Roman Hyacinths should be got to at once, the latter being plunged overhead in Cocoa-fibre. Hyacinthus scandens, five or seven bulbs in a 5-inch or 7-inch pot, come in useful for mixing with Ferns or other plants in the autumn. Till the end of the autumn month still outside, and which are kept back for later blooming, should be neatly staked and be kept in a sheltered place, and must be taken outside before the blooms expand. The conservatory will not require so much shade now the weather has changed, ferrets, if any are present, must be kept down by speaking or syringing with an insecticide. Sow Mignonette in 5-inch pots, and thin out the plants soon last month.

Stove.

One of the matters to be kept in mind now is the ripening of the growth, especially of winter-flowering subjects, hence shade should only be used when the plants would be distressed without it. A little more ventilation may also be given. Sudden changes are not desirable at any time. The good cultivator will so arrange matters that a little change necessitated by the changing seasons will merge into each other almost imperceptibly. Many of the stove-plants have been moved to other quarters to ripen. Winter-flowering Orchids, for instance, are in the vinery, where the dry, yet genial warmth will fill up and mature the pseudo-bulbs, and insure good orriferous blossoms when their season comes round. Gardelias are in a cooler house getting the wood formed, I dare not move them to the vinery, for I am afraid with all our care there is a suspicion of mealy-bug. What a dreadful pest this is among stove-plants! Fir-tree-oll is, perhaps, as good as anything, and better than most things for its destruction. Eucharis lilies will bear cooling down now to have more heat later on to produce flowers for winter. It will soon be necessary to commence fires regularly again. Hitherto we have only used artificial heat on cold nights and wet days, and when the pipes have been warm at ten o'clock at night the fire has been allowed to go out. In the face of a strike among the coal miners this is not a time to use fuel extravagantly.

Ferns under Glass.

There are, or should be, in good condition. Some of the variegated Pterises are very effective among the green-leaved Ferns. Pteris argyrea, P. Mayi, and P. cretica albo-lineata are all very easy to cultivate. The different forms of Nephrolepis may be increased now by division. There are beautiful for basket-work, N. devilloides ferns being especially serviceable to a basket. Ferns are frequently grown under the shade of other plants, but if the shade is very dense the fronds are not of much use for cutting. I am growing Ferns now under Cucumbers, and on the whole they do fairly well, and as by this time the Cucumbers will be removed, and their house given up to the Ferns, the latter will have time to harden a bit before the season when much cut Fern is required for bouquets-making, and other decorative work in here. The Lygodium, or climbing Fern, are graceful and pretty, and may be used for trailing over the handles of ornamental baskets, or to hang down round the edges of out-flowing stands. They are easily grown, and may be rapidly propagated by division.

Mushroom growing

will chiefly be carried on now in the open air. The beds usually do well in a cool, shady spot. Winter mushrooms are useful for plucking over the beds to throw off heavy rains. Mushroom beds are best exposed to rain, and for this season a water-proof cover is very desirable. A general shower will not damage the prospects of the Mushroom-bed, but if it comes heavy it will be an arduous covering of litter, and a wet covering on a Mushroom-bed sometimes entices the spaw to work on the bed, and the bed is thus weakened in its productivity. Of course, Mushroom beds in bearing must have sufficient water. Liquid-manure, in which a little salt—say a table-spoonful in a three-galloon can—has been dissolved will benefit and

stimulate the spaw. Get the Mushroom-house thoroughly cleared out; neglect of this very often leads to the presence of woodlice and other treacherous insects. It will soon be time to look up materials for making up beds for the house for autumn and winter. It is not likely the sun will be so hot again this season as it has been. Other beds may also be made up outside if there are the means of sheltering them.

Window Gardening.

Those who have Myrtles and other plants they may wish to propagate may put in outtings now. Four-inch pots are the best, and about five outtings can be placed round the sides of each pot. Put 2 inches of broken crocks or charcoal in the border, then a little Moss, and fill in with sifted soil of a light, sandy description pressed down firmly. Put a layer of sand on the top, make a mark with the bell-glass, and outside the mark dibble the outtings.

Outdoor Garden.

Those who grow hardy plants from seeds will probably, if the seeds have been shaded and watered during the dry weather, have a lot of pricking off to do now. Well-flowers, Pansies, Canterbury Bells, Carnations, Pinks, &c., must be singled out if they are to get strong. There is yet time to sow Pansies, Actinorhizums, Hollyhocks, Iceland Poppies, and many other things to biennial and perennial may be sown with the certainty now that rain enough has fallen to soak the ground that the seeds will grow. Hardy Annuals, suitable for early blooming, may be sown now. Gather seeds of anything good to either annuals or perennials. A good strain of Canterbury Bells, Sweet Williams, and Sweet Peas are worth looking after. Good seeds of the White Everlasting Pea, if isolated, will come fairly true, and this is very desirable to have a quantity for cutting and to make a sowing over so arch or against a wall, or up the stem of a Labourer, or any other small tree. Now seeds of Intermediate Stock the white variety are the best value. These may, if preferred, be sown in boxes, though they will do very well to the open ground. The best plants should be potted up meantime, and be wintered in a cold frame. They may either be potted out in the spring or shifted into larger pots to bloom in the greenhouse. When well done they are always attractive, and are among the sweetest things for cutting in spring. Roses may still be budded—so far, I expect a good deal of budding remains to be done yet for the present year. It is best to avoid the drought. Carnations also may still be layered. The earlier this work is done the better. Outtings of the flower-stems of Hollyhocks will root now in a frame or under a hand-light in seedy soil. Cut the side shoots into single joints with half an inch of stem above the bud, and about 1 1/2 inches below. Press them into the bed and water to settle.

Fruit Garden.

Fruit thinning the heavy crops of Apples and Pears. Apples will be large enough for use, and the Pears will do for stewing. Dessert Pears are very useful for this purpose. Finish the summer pruning. It is best to make the surplus wood on the trees longer. There may possibly be a little lateral growth till the autumn damp; but what of that? It will do for less harm than leaving all the summer growth to shade the fruit and drive the roots down into the subsoil for moisture. Moreover, when the trees are left unpruned till late in the season all the extraneous wood drawn away from the back buds can their main branches, when they are to form, be a source of winter young trees which are making too much wood should be noted to be lifted, and the roots brought near the surface just as the leaves are on the point of falling. It is a great help to fertility to lift young trees when about three or four years planted. Keep down lateral growth on late Vines. They should be gone over and the young shoots rubbed out once a week. Late Grapes will ripen earlier this year. Evre Gros Colman, which has had on fire since the beginning of June, and colouring. The borders inside must not be allowed to get dry. A mulch of loam litter on the inside border will be an advantage. It will keep down the damp when the Grapes are ripe, and prevent dust arising. The ventilation must be as perfect as possible, and be worked in sympathy with the outside temperature. It may be necessary to cover the ventilators with scrim to keep out wasps, and bottles of beer and sugar should be hung up inside the house to attract flies, &c.

Vegetable Garden.

Things are moving on rapidly since the change in the weather with more rain set in, and the time to make provision for winter vegetables. It is a difficulty of Winter Greens has not been got in, but about it in rural earnestness. It is full late for Brussels Sprouts, as they ought to have been out at least a month ago; but Sutton's Tom Thumb Savoy, Chou de Burghley, Hearting Kale, and Rosette Coleworts will all come in useful—perhaps more useful than Broccoli, which have of late years been so uncertain. Other winter crops to which attention should now be given are, Broccoli, Turnip, and other Greens, Green and Batavia Endives, and Obevil Radishes and Mustard and Cress can be sown according to demand still in shady positions, the soil to be kept moist. Celery may be blanched by tying paper round the plants to exclude the light. Celery blanched in this way looks cleaner and better, and there is no doubt that for exhibition this is the best way to blanch it; but for home use I like blanching with soil or something which excludes the air more effectually than paper does, and, of course, for winter use the danger of injury from frost has to be considered. Paper is not a sufficient protection. For late use strong plants of Red Celery may still be potted, giving a preference to those plants which have been raised outside altogether. Plant in very shallow trenches, or all together on the surface. The plants will not reach a full size, but they will come very useful in the kitchen. If very early Tomatoes are required early spring it will soon be time to start the plants either from seeds or cuttings. The plants now fruiting, planted in light houses, will carry on till Christmas. E. Hoar.

Work in the Town Garden.

Plants will soon be in all their glory, and very beautiful in ways where in even fairly good cultivation. The plants of the few flowers that are over seen to the

Since the rain came the plants have grown amazingly fast, and what they chiefly need now is to be securely staked and tied as they grow, removing any weak and superfluous growths, and to wage constant war against awrigh, which are unusually common this season. When the flowers are grown for show it is usual to protect them from heavy rain by means of metal caps or inverted flower-pots fixed immediately over them; but for ordinary garden decoration, cutting, &c., nothing of the kind is necessary. Much the best traps for awrigh are small pots, half full of dry hay or Moss, inverted on the top of the stakes, the contents being turned out and destroyed every morning. This, with a few lengths of hollow reed or the like placed among the leaves will soon lessen their numbers. The Neracanthus Phloxes, again, are wonderfully showy and altogether delightful plants, particularly charming when seen in large masses of well-blended colours. They do not thrive to any extent in very shady gardens, but in suburban districts, or where there is a fair share of light and fresh air, they grow well and flower profusely, while their culture is of the simplest. Those who desire to have fine masses of the hardy Chrysanthemums and Michaelmas Daisies presently should give the plants a can of liquid-manure now and then, and keep them securely staked and tied, but by no means budded or trussed up too tightly; the former must not be stopped any more now. A few of the most large-flowered kinds, planted at the foot of, and next to a warm wall, afford a cosmopolitan and very pleasing feature; care must be taken, however, to keep the soil well watered, and the foliage frequently syringed in hot, dry weather, or the plants will become smothered with thrips and red-spider, and never do much good. Chloeos Primroses must be shifted on into flowering pots as soon as possible now; keep them moderately close to a frame or pit for a week afterwards, then ventilate as freely as possible. Light shade is better than full shade. Any old plants that have been kept over from last winter should also be partly shaken out and potted into slightly larger sizes, or if the soil and roots are in good condition they may be merely shifted out, and vigorous examples to 7-inch or 8-inch pots will make very fine specimens by Christmas time or before. Sow seeds of Cinerarias and herbaceous Calceolarias at once, and keep the pans or boxes cool, shady, and moist. B. C. K.

THE COMING WEEK'S WORK.

Extracts from a garden diary from August 5th to August 12th.

Thinned and tied Dabbias. A good deal of attention is required now to produce good blooms. The best varieties for cutting are the Cactus and Pomposas. The stigmas do not last long, and the large doubles are too heavy. Put in Hollyhock cuttings. Healthy side shoots cut into single joints make good outtings, and many of them will strike under glass if kept close and shaded. An occasional dewing over should be given to keep the layer black and on the surface moist. Where many Carnations are required for cutting I find the advantage of planting out the tree or perpetual varieties. Seedlings from these throw a lot of bloom, and continue to flower a long time, and, if lifted in autumn, potted and placed in heat, the late buds will all open. Put in outtings of Pansies and Helias. There comes the young shoots coming in the nursery of the plants now, some of which may be pulled up with roots attached. I always make a special bed for these in a frame. The soil is made rather sandy, and lightened with some sifted leaf-mould. Potted Freesias and Roman Hyacinths. The latter are plunged over the top in Cocoa-fibre, but the Freesias are better exposed, as deep covering weakens the growth. Sowed more Mignonette in pots for blooming in winter. It is very important that the soil be made firm in the pots. This makes the growth dwarf and sturdy. The pots have been placed in a cold frame, though they would do very well exposed, except in the possible event of heavy rains falling. Repotted the collection of forced Roses. All did not require shifting, but those not repotted were top-dressed with loam and manure. Some of the old soil was removed from the surface, and the new soil rammed down very firm. After putting the plants in a cold bed. What little pruning was required was done before the potting. Top-dressing took place. I have occasionally used a little bone-meal in the soil, and a layer of half-inch bones on the top of the drainage is a great help where the plants are not repotted annually. Busy among the Chrysanthemums disbudding, tying the buds, &c. Those who are fond of these flowers find the long lines of plants, the stakes tied to wires to prevent the wind blowing them over, very interesting. I saw one growing a thousand, and, I confess, I spend a good deal of time among them without weariness. The trouble with awrighs has been considerable, as no quarter must be given, or many of the bedding-plants will scarcely have a good bloom. Some kinds, usually those which are robust in habit, seem to escape the attacks of these insects. The evening is the best time to search for them, when they are feeding. I take a candle and lantern about nine o'clock and pick them off when feeding. They seem less alert than I expected. I planted six geraniums, many of the forced plants were potted with the view of getting an autumn crop, and many of these are now in bloom. Some of the earliest-planted plants will ripen the fruit in the open air, others will be lifted and taken into a light house. A good many dahs are usually gathered, and the fruit is of good flavour, much better than those forced early in spring.

4206.—Grubs in a garden.—I imagine from your description that the Carrots and Onions were attacked by the grubs of the Daddy Long-legs or Crane-fly, which are commonly known by the name of Leather-jackets. Sand soaked in paraffin-oil might be of some use laid round the plants, or the grubs might be trapped by burying pieces of Turnips, Carrots, or Potatoes, and examining them every morning. A small skewer should be stuck into each to show where they are buried. If pieces of turf, stake, or board, be laid about the grubs will often creep under them.—G. S. S.

* In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equally good results.

INDOOR PLANTS.

BEAUTIFUL LEAVES.

ABOVE all things powerful in the great laboratory of Nature we must give the place of honour to the green leaves of the meadow or forest, or the gardens of the world. Some people prefer flowers, but we may agree most cordially with Scotic's anient matron, who, on being closely questioned as to her maternal preference for one of her two handsome boys, settled the matter iconoclastically by saying "haith's best." And so, were we closely tied to a preference between leaves and flowers, we should agree with the wise woman of Edina; but if still more severely cross-examined, we should then revert to first principles and decide in favour of green or beautiful leaves. Our illustration of stove or hot-house foliage will speak for itself. As a choicest bit of leafy portraiture and of wood engraving you may compare it with "Bewick's Birds," since the principles are the same, white on black, and not black on white, being the true and natural function of the wood engraver's art. In the woodcuts of to-day we look

Aspidium, or can it be Davallia Mooreana? Whatever it is, it is well placed and beautiful in the group to which it belongs. What the flower is below is not so very easy to decide. It may be a Maranto, but one leans towards its being the brilliant Scutellaria Mocciniana, or perhaps an Aphelandra of the Leopoldi type. Whatever it may have been, it no doubt added to the green, grey, and bronzy tints above and around it, and whenever we see a beautiful group of this kind so varied in form and aspect we instinctively long for the day when the exquisite tints and colours as seen reversed in the camera shall be possible of reproduction by the negative. Then, and then only, will the triumph of the great Daguerre and the other inventors of photography be complete. As it is, no one can look upon the exquisite results now obtained by the camera and the graver without much inward satisfaction and content, especially as applied to the illustration of our garden vegetation and its friends and foes. B.

Raising seedlings.—Every amateur is not so successful in growing seedlings of good quality as "W. Cotton" appears to be. I once

pots. Rich, open soil is the most suitable. Pot firmly to obtain compact growth, and to gain colour grow the plants in a light house, near the glass.—E. H.

— These plants invariably flower after growing a certain distance, and especially so in a high temperature and comparatively dry atmosphere. The way to prevent their doing so is to pinch out the points of the shoots beyond the second or third pair of leaves frequently, and then with rich soil, plenty of water, a little liquid-manure once or twice a week, and a nice, moist atmosphere, they will develop fine, large, and handsome leaves. The last stoppings should be given five or six weeks before the plants are required to be at their best. Specimen Coleuses are usually shifted on into 8-inch or 9-inch pots. Larger sizes are sometimes employed, but in many instances the use of larger pots than those of 9 inches across is prohibited. Good sandy or turfy loam, mixed with a third of leaf-mould and plenty of sharp sand forms about the best compost. If the loam is at all heavy a little peat may be added.—B. C. R.

4231.— **Winter flowers.**—Very few plants, Christmas Roses, Camellias, common Primroses, and Violets, perhaps excepted, will flower at all freely during the winter in so low a temperature as 40 degs. Chinese Primulas, single and double, with P. obovata, are about the best plants for a cool-house, but even these would do much better with 5 degs. more warmth. In a temperature of 45 degs. to 55 degs. the above, with Cinerarias, Cyclamens, Zonal Pelargonium, Heliotropes, Abutilons, Bouvardias, and others would do well.—B. C. R.

4245.— **Arum Lilies for Christmas and Easter.**—Toward the end of September pot up the plants in a compost of three parts loam to one of partly-decayed horse manure. Do not employ pots larger than is necessary to get the roots in. Those plants with a single crown should go into 8-inch pots, the largest into those 10 inches in diameter. Do not fill the pots too full with soil. Allow quite an inch of space for the small pots, and 2 inches for the larger for water, as this Lily enjoys copious supplies of moisture at the roots. Stand the plants at the back of a north wall for ten days or so until the roots have taken to the new soil; in this position the necessity of shading the glass is dispensed with as the leaves are certain to flag if the plants are placed in the greenhouse directly they are lifted from the open ground, consequent on the check the roots receive in lifting the plants. If the foliage is syringed twice, or even thrice a day during hot weather the plants will sooner get over the check. Place them in the greenhouse, choosing the lightest position, so that the foliage will not become drawn up weakly, which is often caused by standing the pots too close together. When the pots are full of new roots commence to feed them by the aid of liquid-manure, given every alternate watering, with an occasional handful of soot thrown into the water and well stirred. If liquid-manure can be had, half a teaspoonful of Clay's fertilizer sprinkled on the surface weekly, watering it in, will be of immense service to the plants. The growth is this year being quickly made on the young plants; early blooms may, therefore, be expected, and if the plants are regularly fed, and are given space, they will flower from Christmas to Easter.—S. P.

— You cannot expect these plants to open their blossoms properly at mid-winter in a temperature of 40 degs. only; they require a warmth of 55 degs. to 65 degs. at least to do so either at Christmas or Easter, unless the weather is abnormally fine and warm. The plants now in the ground must be kept regularly moist at the root; lift and pot them at the end of September, and take them into the greenhouse, but if you want early blossoms you must have more heat.—B. C. R.

— It is no use for you to think of it; to attempt to flower Arums so early without forcing is worse than to make bricks without straw.—A. G. BUTLER.

— Forty degrees is rather a low temperature to have Arum Lilies in bloom by Christmas, but you may succeed with the strongest plants if they are potted up early in September. There will be no difficulty about a supply at Easter.—E. H.

4234.— **Plants for a southeast conservatory.**—This is about the best aspect that could be mentioned, at least, for flowering plants—and in such a comparatively pure



Stove foliage. Engraved from a photograph sent by Mr. Tabor, North street, Ashford.

for portraiture, and in this instance we find it readily, and without any difficulty recognise several old friends. Bottom corner to left Anthurium crystallinum, to right of which is Lomaria gibba, one of our handsomest and most distinct of sub-arboreal stove Ferns. It really might be Brazeia insignis or Cycas revoluta in a small state, but as merely judging from the engraving I should at once say it is the Lomaria. Above the Fern, to the right, we have the massive shield-like leafage of Alocasia metallica, one of the most distinct of all the species of a remarkable group. Some of us remember the sensation caused in gardening circles and at the floral exhibitions when its metallic-hued leaves were first seen. Now-a-days it is but too often totally neglected in favour of newer and less worthy things. As well grown in small pots of rich compost, this metallic Alocasia is one of the plants to grow in a tiny stove. The pale Fern above, with its great pinnate fronds, is quite as distinct in its way as is the Areid. It is Polypodium aureum, its leafy surface of a pleasing grey-green or glaucous tint, its specific name being derived from the golden sori which display themselves beneath its ample fronds. In the top left hand corner is a Croton of the C. pictum type, and beneath a few great fronds of an Alsophila or

obtained "Geranium" seed from two large reliable growers. I had about a hundred plants. As they bloomed they were one after another thrown to the manure-heap as worthless; only four did I think worth pot room, and only one an improvement upon kinds I had before. This last is good everywhere, and in winter as well as summer. In a collection of "Geraniums" it looks well and attracts attention. I have also grown plants from seed of my own sowing with a like result, both from Zonale and Ivy-leaved "Geraniums." It is a rare thing to get one that in habit, colour, size, and freeness of flowering is better than its parent. I do not wish to discourage any attempt to improve existing kinds, but unless one has plenty of room, time, and patience, one is sure to get plenty of disappointment as well. The above is my experience with "Geraniums." With several other florists' flowers I have been more successful.—FLORIST.

4226.— **Coleus flowering.**—These plants do not flower much till they get pot-bound, and if the flower-spikes on their first appearance are pinched out there will be no blossom, and the young shoots that break out will fill up and give symmetry to the plants. Nice specimens may be grown in 10-inch pots, and very large plants may be had in 10-inch

atmosphere any of the ordinary run of greenhouse plants, such as Pelargoniums (Geraniums) of all kinds, Petunias, Fuchsias, tuberous-rooted Begonias, etc., ought to flourish and thrive excellently. If they do not, there must be some grave fault in the treatment. You cannot, however, expect to exceed with the above or any greenhouse plants, unless regular care and attention is bestowed upon them—these are absolutely indispensable under any circumstances, and it is chiefly through neglect in some form that so many failures occur. Pot plants must be attended to—as regards watering, shading, etc.—just when and as often as they require it, and not merely when you have the time or inclination to do it. A collection of good named kinds of "Geraniums" (Zonal Pelargoniums) would require comparatively little care, and a selection of the Ivy-leaved varieties, which do not seem to feel the want of water for a day or two, and are now extremely showy—even less. Again, a Vine trained over the roof, with perhaps a few Ferns, Palms, Aspidistras in pots growing beneath, would not call for very close attention. The most accommodating subjects of all, however, are Cacti and other succulents, which will often do without water for weeks together.—B. C. R.

You cannot expect to do much good without care and attention. For the walls the least troublesome creepers would be *Plumbago capensis*, *Fuchsias*, *Ivy*, *Geraniums*, *Habrothamnus elegans*, *Cacti*, *Hex Begonias*, *Pet. Fuchsias*, *Abutilons*, *Pelargoniums*, *Sparmannias*, *Hellebores*, *Gastias*, and many other things will do well with attention to watering on the staging.—A. G. BULLAN.

4232.—Seeds of "Geraniums" and *Fuchsias*.—Gather the seeds of the former as soon as they begin to turn brown, the seeds themselves being situated between the calyx of the flowers, at the base of the long spike or "bill," to which they are attached by means of a feathery appendage, which curls up when the seed is ripe, and is furnished with a row of silvery hairs. It left so long as this on the plant some are, however, liable to be lost, so it is best to gather them, stalks and all, before the seeds begin to part from the "beak," and lay them on paper in a dry and sunny place until fully ripe. The seed of *Fuchsias* is contained in a berry which follows the flower, and when these turn of a deep-purple or blackish colour, and become soft, they should be gathered, and the seed be picked out, or rubbed out gently in fine silver-sand. The early spring is the best time to sow in both cases, placing the seed in well-drained pots or pans of sandy loam or leaf-mould. If started about the middle of February in a genial temperature of 60 degs. to 70 degs., nearly, if not quite all the plants will flower the same year if kept growing on steadily. If there is no forcing-house or hot-bed, sow the seeds in an ordinary greenhouse or sunny window in May or June, and the plants will flower the following summer.—B. C. R.

4102.—Preserving *Ross-savvs*.—The petals should be those of red *Roses*, or pink; white petals are not considered so good for the purpose. These petals, picked before they fall, should be placed in a paper tray in a window (where they will not, however, blow away) until they are rather dry, when they may be laid in a jar or basin, with alternate layers of bay-salt sprinkled over them. The petals of *Orange-flowers*, *Jasmines*, *Tuberose*, and many other sweet-smelling flowers can be added with advantage, and a little *Orris-root* and other spices improve the scent of the whole. The leaves of the *Bay-tree*, *Lemon Verbena*, *Mint*, *Rosemary*, *Thyme*, and *Lavender-herbs* are a nice addition, only requiring to be dried a little before they are added to the pot-pourri. This can be added to any time; bay-salt in proportion (i.e., a light sprinkling to a layer of leaves), being also mixed with the dried petals and leaves. Pot-pourri should be kept covered, except when it is needed to scent the room. A little of it, burned on a hot coal or two, in the fire-chimney, gives a delicious odour.—I. L. R.

4114.—Destroying cockroaches.—There is a powder sold for this purpose which is spread on the floor of the place which is infested with these pests, killing them by hundreds, though it does not affect cats and dogs. Cockroach traps, too, are useful if constantly kept baited and emptied every morning, and by means of these two things it is not difficult to lessen the plague considerably. Unfortunately, as soon as this is accomplished

the traps are apt to be forgotten and the powder no longer strewed, consequently, the cockroaches, which increase very rapidly, soon get ahead again. The only way to thoroughly clear them out is to keep up the fight until none have been caught for at least a week; this is much less trouble, and more economical in the long run than having to go through the same process at intervals continually.—I. L. R.

—Have you tried paraffin-oil? This is a very good destructive thing for ants, and a few other ways may also be adopted, which you apparently have not tried. A good plan is to put an inverted garden-pot over the nest. The ants will find their way into this receptacle, which may be lifted in a few days with a spade. Summer-sun in boiling water will effect the desired end. Dust sulphur about the place afterwards, which is a very good preventive, as they do not seem to care for this material.—C. T.

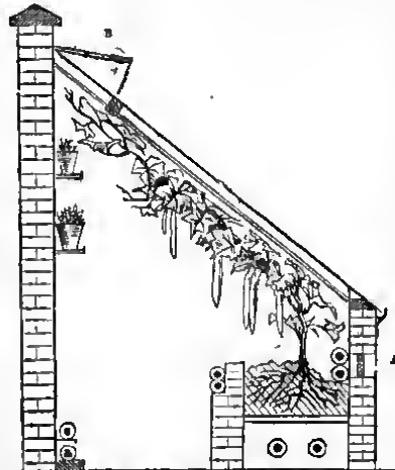
THE KITCHEN GARDEN.

PREPARING CUCUMBERS FOR WINTER.

For the successful growth of winter Cucumbers, for which preparations should be made in August, it is very essential that the structure be efficiently provided with both top and bottom-heat and also be well exposed to the light. Given the above conditions, the production of Cucumbers during the winter months is reduced to a minimum. The above class of structure is in marked contrast to that which is dark through too much timber being in the roof, and also indifferently provided with piping, or where the pits are low down and flat, and which in years gone by were looked upon as the ideal structures for the growth of Cucumbers. During the summer months Cucumbers might be grown under such conditions, but a supply during the winter months could not be maintained. Happily, such structures, in the majority of instances, are being swept away and replaced by those of more modern construction. Maintaining a supply during the early part of the winter can be managed easily enough. The mistake generally is that the plants are made to produce far more fruits than are at all necessary. Overburdening the plants in the earlier stages of their growth seriously cripples them and hinders the production of fruits during the later winter months, or nay from Christmas onwards, the period at which

wards the end of October or early in November to produce fruits from the end of January and through February, the time when winter Cucumbers are at a discount. By this time the early-fruited plants will be giving out if they have been at all closely crepped, when they may be either cleared away or go through a course of renovation, so as to recuperate their energies. The soil for winter Cucumbers must be lighter than is needful for summer growth, as the roots must be kept working freely. Three parts light loam to one each of well pulverised horse-manure and leaf-soil, with the usual correctives of old lime rubbish and pounded charcoal, more or less according to the texture of the loam, form a good mixture. By pulverised manure it must be understood that I refer to manure prepared as if for Mushrooms and rubbed through a sieve.

A GENIAL root-run is what is needed, and which must be provided if the plants are to do well, although suitable soil alone will not secure this if other conditions are not present to enable this to be made available for the roots to work freely. To illustrate my meaning, the soil is often placed direct on to the bricks, which are arranged around and above the pipes, so that the bottom-heat applied may have free access without any obstruction. Such practice must have a tendency to cause the soil which comes in contact with the bricks to become very dry. Now, to counteract this evil, it is much the best system before putting in the soil to spread a layer of prepared stable litter, or what would be better, litter and good leaves in equal parts, directly over the bricks. This will form a genial medium for the roots. The soil should be formed in hillocks at a distance of 3 feet apart, but before placing this direct on to the litter, a layer of turves, if available, should first be placed over the surface, thus forming a good foundation for the roots. Turves certainly are not absolutely necessary, and there are, no doubt, thousands of winter Cucumbers grown without them, but in such a case as this the hillocks of soil must be a deal larger than would be otherwise necessary, where turves are used. Healthy plants which have not been allowed to become pot-bound before planting will soon start freely into growth. A close and stuffy atmosphere will not build up a sturdy growth; consequently, this must be avoided, and the growths must be trained thinly. This, with a judicious admission of fresh air, will impart the desired solidity to ensure an after fruitful condition. The mistake which is generally made is allowing growths to ramble too much before stopping them, but the main laterals being disposed, the side or fruit-bearing ones should be stopped at one joint beyond the fruit, as when two, three, or even more are left the growth soon becomes a crowded mass; consequently a wholesale thinning out of the shoots has to be resorted to, this seriously checking the fruit-bearing capabilities of the plants. The thinning-out should be continually and gradually taking place, removing a few of the larger leaves and diseased growth to enable the light to have free access to the young extending shoots, which must be kept laid in, as it must be remembered that growth must never be at a standstill. The water should not be at a lower temperature than 80 degs.—even 85 degs. would be better. As the roots extend to the outside of the hillocks, a slight top-dressing must be given. Heavy top-dressings are not needed, as the roots do not take so freely as when about half an inch of the material is applied; little and often is the best course to pursue, as then the main feeders are kept in an active condition. As the hillocks become permeated with roots the mistake must not be made of applying strong liquid, but if this is applied in a diluted or clarified form the plants will derive marked benefit. The growth which is taking place is altogether slower, on account of the short and, I might say, almost useless days, so it will be readily understood that to gorge the roots with stronger food than they can assimilate must end in failure, the leaves quickly turning to a sickly yellow. A temperature of 65 degs. or even 70 degs. on mild nights will impart a steady growth, with a rise of 5 degs. by day by artificial heat. A low stagnant atmosphere is a sure source of mildew. It is a very unwise proceeding to allow all fruits to remain whole form. Only sufficient should



Section of winter Cucumber-house. (See page 317.)

they are most in demand. The general rule in gardens is to raise the plants sufficiently early, so as to enable them to be planted during September, the reason given being that it is very essential that they be well established or in a condition for bearing fruit before the short days arrive. Such treatment certainly is very rational, but where there is sufficient space an extra batch should be held over for planting to-

be allowed to form to keep up a regular supply, a glut at any time being avoided. The system of ventilation as usually accorded to Cucumbers is often called in question. If I entered a Cucumber-house on a mild day during the winter and found it close and stuffy, I should apply a little ventilation, but, on the other hand, during a very cold or sunless period I should not put on ventilation just for the sake of so doing, as sufficient air for all practical purposes would be obtained through the laps of the glass. During the earlier stages of growth, ventilation carefully, or rather judiciously, applied would impart to the growth that solidity which is so necessary for an after fruitful growth. A good form of lean-to house for winter Cucumbers is illustrated on page 316. A.

To renovate a worn-out Cucumber-bed.—First remove all the decayed and unhealthy leaves. Next cover the whole surface of the bed and all the Cucumber growth except the healthy leaves, and cover the ends of the shoots 2 inches in depth with rotten manure. If this is not to be had, use garden soil and horse-droppings in equal quantities. Syringe twice a day in bright weather. Keep close on cloudy days. As the season advances, give but little air even when the sun shines, remembering that the two main requisites for success in Cucumber growing are heat and moisture. Never mind about giving air as long as the temperature can be kept up to a high standard. We are often told in GARDENING that air-giving is not essential to successful Cucumber culture. When the nights become cold, put mats over the lights. If the above directions are followed, new life can be put into the bed, and it can be kept into bearing till late in the season.—L. O. K.

4243.—Potato-Onions, &c.—The botanical name of the Potato-Onion is *Allium Cepa* var. *aggregatum*, a very useful sort to grow; the bulbs are ready for use before any other kind, and keep plump a long time after they are stored, when lifted in good condition. This Onion is not raised from seed, but treated like Shallots; the bulbs of last year's growth are planted early in February, about 3 inches deep. When the soil is rich and has been well managed the bulbs produce a quantity of offsets and swell to a large size. When ripe, which is easily ascertained by the tops changing colour, the roots should be lifted and laid in a dry place to ensure the bulbs being thoroughly fit for storing in a cool room free from frost. As to cropping a vegetable garden, much may be done at this time of the year to ensure success throughout the winter and spring. Now is a good time to sow a pinch of seed of Ellam's Early and Flower of Spring Cabbages. The first named is by far the earliest to come to perfection, while the second is a capital sort for giving good heads after Ellam's is past and gone. A small sowing of Nantes' Horn Carrot on a warm border will produce a crop of useful roots. Tripoli Onions should be sown about the middle of August; these are ready for use, either for drawing in a green state in the autumn or for early bulbs in the spring. Spinach is much valued by some persons. Sow at the same time as the autumn Onions a pinch of the round-seeded or perpetual variety. It is not yet too late to put out a batch of late Celery plants, provided the latter can be secured; this crop succeeds as well planted in a double or even triple row if land is scarce. If procurable, late sorts of Broccoli, Winter Kale, or Savoys may still be planted with a fair prospect of success. A pinch of Cauliflower seed should be sown at the end of August with a view to saving the plants in a cold frame over the winter; these would succeed the late Broccoli. Where winter salads are appreciated the middle of August is a seasonable time to sow a pinch of both Lettuce and Endive. Black-seeded Bath and Hammermith are the best kinds of Cos and Cabbage respectively. Of the latter Incomparable Green is the best; of the Moss-curl and Round-leaved Batevian is to be preferred as a Large-leaved Endive.—S. P.

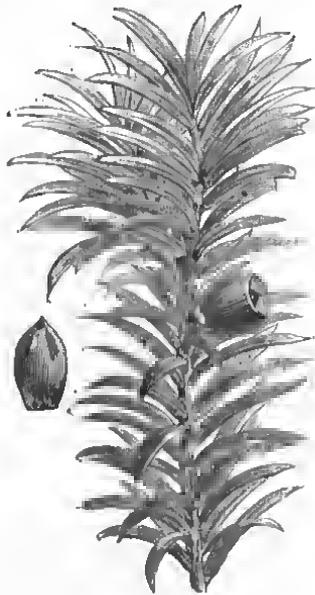
The small tubers or offsets should be planted as early as possible in the opening in the Southern counties, where the soil is light and warm. They are usually planted about Christmas-time, when they will be ripe and fit to harvest by the end of June. At the present time work in the vegetable garden

principally consists of getting in winter Greens of various kinds, such as Savoys, Broccoli, Kale, &c., sowing Turnips and Spinach, also Onions to stand the winter; Cabbages, too, should be sown at once, and Cauliflowers about the third week in August.—B. C. R.

TREES AND SHRUBS.

GOLDEN-LEAVED TREES.

WHATEVER may be said to the contrary, there can be no doubt that when planted with discretion and in well-chosen positions, trees with



Golden Yew (*Taxus baccata aurea*).

golden foliage are capable of producing some of the most pleasing and varied effects in the landscape, that without their use it would be almost impossible to bring about. I am not now referring to the many sickly, parti-coloured trees and shrubs that are now so widely cultivated, but to the more healthy and vigorous growing section, where fine, sturdy specimens on their own roots are to be found. The effect produced by clumps of the golden Elder, jutting out here and there with bigger masses of some of the more pendent-branched Willows in an old-fashioned garden in the South of England will not be easily forgotten, for the thought at once occurred to me what pleasing and charming combinations were capable of bringing about by wise discrimination in the use of golden-leaved trees and shrubs. A well-developed specimen of, say, the variegated-leaved Sycamore when suitably planted is capable of imparting a particular line of beauty to the position in which it is growing. Then there are some of the silvery-leaved Maples that are curiously beautiful if happily placed with regard to their surroundings. But to return to the golden Conifers, which constitute a distinct branch of trees and shrubs with parti-coloured foliage; we have several that are full of interest and of great value for the contrast they afford to the general run of our green-leaved kinds. The golden variety of the Chinese Juniper (*Juniperus chinensis aurea*) has, perhaps, no rival amongst trees of its kind, the depth of tint, which only seems to be augmented by the heat of summer, being pronounced and pleasing. Then *Retinospora plumosa aurea*, *R. obtusa aurea*, and *R. pisifera aurea*, are all worthy of cultivation, the colour of foliage being rich and constant. *Thuja occidentalis aurea* and *Cupressus Lawsoniana lutea* are also well worthy of note, and when well placed they are distinct and effective. Even the golden-leaved form of the Highland Pine (*Pinus sylvestris aurea*) has a charm of its own, and is always a welcome tree when growing in the shrubbery or woodland. Of our common Spruce Fir there is a very pretty and distinct

golden variety in *Abies excelsa aurea*, the bright bronzy-yellow of the young growths rendering it a tree of surpassing beauty. These, with the Golden Yew (*Taxus baccata aurea*)—see note—are the best of the Conifers that come under the about class now being noticed, and when they are judiciously planted and have formed fairly-sized specimens, their beauty is certainly very unusual and not to be despised. A.

The Venetian Sumach (*Rhus Cotinus*).

—An old-fashioned, but none the less handsome shrub is this *Rhus*, which, ornamental at all seasons, is especially so when crowned with its fastery inflorescence towards the latter part of the summer, in which stage it remains for some time, and again in the autumn by reason of the vivid tints assumed by the leaves before they drop. The colour acquired by the decaying foliage will depend to a considerable extent upon the position of the plant, as if in a somewhat dry and exposed spot, the leaves are much more richly coloured than is the case where the plant is in a situation more conducive to rapid growth. Few (if any) shrubs are more suited to plant as an isolated specimen on Grass than this, as it will form a well-balanced bush, totally devoid of any stiffness or formality, and the lowermost branches will extend for some little distance from the parent plant—not far, it is true, but quite sufficient to form a desirable edging to the central mass. I was never so much struck with the beauty of this *Rhus* as on one occasion when I unexpectedly came upon a fine specimen just at its best, whose bright-red, wig-like masses of inflorescence were lit up by the rays of the declining sun and formed a beautiful summer picture.—H.

***Spiraea arisefolia*.**—This is a lovely July-flowering shrub. It should be placed, if possible, by itself, as when crowded amongst other things its distinctive character is lost. In midsummer its graceful branches are bent with the weight of paucules of creamy-white flowers, which are produced in rich profusion. Where the garden is of sufficient size, it should be planted on the outskirts of the lawn, and the effect of its bold, free, and handsome character is enhanced by the green groundwork, so to speak. It is a North American shrub, and grows about 6 feet in height, requiring ordinary garden soil, but well drained, and a fairly open position. The *Spiraeas*, although exceedingly beautiful, are not seen half enough of in either large or medium-sized gardens.—V. C.

4246.—Pruning hedges.—Your gardener is right so far as to cutting the hedges early, they then went to be pruned again. When there is only time enough to clip hedges once a year they are generally left until the early part of the month of August. It is usual, however, to go over hedges that are connected with the garden or pleasure grounds twice a year, which, of course, adds to the labour. I hardly understand what you mean by there being a lot of old wood on your Rose-trees. If this growth was not cut back pretty hard in the winter, of course there would be that. The great heat has nothing to do with it. It appears to me that there is a difference of opinion between you and your gardener as to how Roses should be pruned, one preferring them to be cut back hard, and the other much less severely. If they are grown as dwarf plants I think the latter plan the best, which when skillfully pruned do not show much of the old wood in summer. The information sent is not, however, sufficiently clear to give a more definite answer.—J. C. C.

The gardener is not altogether wrong as regards the hedges. If cut early they will require cutting again; but, on the other hand, if delayed too long the bottom leaves will die and the Privet hedges will be brown instead of green. Have them cut at once, and to keep the hedges in good order they should be cut twice a year. If the Roses had been cut back fairly hard there would not have been any dead wood, dry though the season has been; but some people do not agree with much cutting back. However, they will have to be cut pretty hard in the next season to get the bottoms well furnished. Dead wood should be removed at once.—E. H.

Both Privet and Quick-hedges should be cut at least twice a year—indeed, they are all the better if they are cut even oftener than that. By constant clipping of the shoots more growths are made, the hedge gradually becomes thicker

and, of course, a better fence both in bulk and appearance. I commence to cut these hedges when the shoots are 6 inches long, and as often as they require it after they are out. I know it takes up time, but if good and neat hedges are an object this cannot be avoided. If the Rose-trees were replanted this spring, the hoed end drought would account for the dead wood in them, but if not it was caused by the frost of last winter, and should have been cut out when pruning in March or April of this year.—S. P.

— Your gardener's excuse is a poor one. Cut back at once. The hedge will be all the thicker. As for the roses, heat will not make young wood old. The effect it had on my Roses was to retard the growth of the new wood, and to force a quantity of bloom, which lasted only a few hours.—A. G. BURLER.

4223.—Rhododendrons in a clayey loam.—Yes, all the more vigorous varieties at any rate will succeed excellently in such a soil as you describe, with a little care in preparing the sites. The drainage must be good, and a moderate quantity of either peat or good leaf-mould, with, if possible, some sand also, must be worked in round each plant before it is put in place. Keep the collars high, and with a due supply of moisture all will go well.—B. C. R.

— A good deal depends upon what forms the basis of the clay. If there is any chalk Rhododendrons will not thrive in it, but a heavy loam over the old red sandstone is not bad for Rhododendrons. With the addition of leaf-mould it may be made quite suitable.—E. H.

— If you mix a quantity of peat with the soil you may succeed in growing Rhododendrons, but in clayey loam alone you cannot hope to be successful. Fibrous loam, with an admixture of well-decayed manure, will grow these plants.—A. G. BURLER.

— I should think that the Rhododendrons would succeed. Mr. Anthony Waterer, whose opinion is worth much in respect to this class of plants, mentions that all the American plants may be said to delight in, and to require, what is called peat-soil. It was at one time believed that they would not thrive in any other. Experience, however, proves the contrary, and it is now proved that Rhododendrons, the most important of them all, as well as others of the more vigorous-habited plants, succeed in almost any soil that does not contain lime. In many sandy loams they grow with as much vigour and luxuriance as they do in peat; in fact, almost any loamy soil free from lime or chalk may be rendered suitable for them by a liberal admixture of leaf-mould or any fibrous material, such as the parings of pasture land. When the soil is poor, owing to a thoroughly decayed state, proves one of the best manures for these plants. You cannot have better advice than this.—C. T.

HARDY PERIWINKLES.

THERE are very few gardens where a place cannot be found for some of the Periwinkles, for among their other desirable qualities is that of thriving in situations where few plants of a shrubby nature can be induced to flourish, and from their low-growing character, combined with the fact that the foliage is retained throughout the winter, they are bright and cheerful at all seasons, and are very useful for clothing spots where little else but the Ivy will thrive. For covering sloping banks or positions such as this the different Periwinkles are well suited, and they (the minor kind especially) will carpet the ground with a dense mass of slender twigs, clothed with ovate deep-green leaves, among which the pretty blue, white, or violet-coloured blossoms may be found nodding for months together, as a succession of blooms is kept up for a considerable period. The two variegated varieties with respectively white and yellow marked leaves are also very pretty, and when interspersed to a limited extent among plants of the normal hue the variegated portions stand out markedly by contrast with their surroundings. The larger Periwinkle (major) will cover a given space in much less time than its smaller relative, and is suitable for planting under much the same conditions as that is. Where there is a bank too steep for plants to be grown on the sides thereof, the larger Periwinkle is one of those that may be planted along the top, and allowed to hang over and furnish what otherwise might be a bare and unsightly spot. Of course the shoots of some of the more vigorous climbing plants will depend for a much greater distance than even the strongest Periwinkles, but they list afford a pleasing variety, as well as being suited for shady spots. The variegated form of

this has the leaves irregularly, but clearly marked with white, and taken altogether is one of the very best of low-growing hardy plants with variegated foliage. I once saw a dunken walk through a shady part of the garden flanked on either side by the different Periwinkles, and a very pretty effect was produced thereby, the walk being about a couple of feet below the level of the surrounding ground. T.

ORCHIDS.

CATLEYA REX.

THE first flower of this splendid member of the Labiatae section of this genus which I have ever had the good fortune to see, comes to hand from "R. C. F.," living in the County of Sussex. The flower appears to be somewhat small in size; but this is explained by "R. C. F.," who says it was a very small plant semi-established when he purchased it last May twelvemonth, and the flower sent is one of three produced upon the first bulb made by the plant, and he says he never expected it to flower so soon. Now, I have no knowledge of this Orchid, nor of its qualities, either as a free or a shy bloomer, never having seen it before, and I am proud to think that the first flower comes to me from a reader of GARDENING. This Cattleya is one of the recent introductions of M. Landon, of Brussels, who has kept its native habitat a secret, and which cannot be put down to anything but the exigencies of trade concerns, for it may be that he had spent a lot of money before his man found this plant, and he wants to recoup himself for some of the outlay, and some allowance must be made for this before blaming him for disclosing its habitat. All collectors try to do the same thing, and, as far as I can see, it is a very right thing, because traders have a very different battle to fight to the collector, who naturally enough wants to know where the habitat of every new thing is, because he has no losses and no expenditure in the matter. However, you have succeeded so far as to get it to bloom, and you cannot do better than to keep it under the same conditions as Cattleya labiata and Cattleya Warocqueana, shifting it from time to time should the plant not appear to be doing well; but when you have the plant in a spot which suits it there you should keep it; and if "R. C. F." has the two plants named in his collection, and has space for a few more he should invest in the Labiatae varieties, or the so-called varieties, and with the following kinds he always would have a display: Cattleya labiata, C. Mendeli, C. Mossii, C. Trianae, C. Dowiana, C. Perolvaliana, C. Warneri, C. aurea, C. Gaskelliana, C. speciosissima, C. Eldorado, and C. Warocqueana, and C. gigas. All of these have broken into many varieties, most of them from pure white flowers to flowers of the deepest hue, and of all of them named unflowered plants can be purchased at a low price, and from these you may have the chance to have a very fine variety crop out, which would be worth very much more than you would pay for the whole lot of plants. I shall be pleased another season to hear from you again, and if you have a larger flower to spare I should be obliged to you for it, as I want it for drying, and next season I feel sure you will have larger flowers. MATT. BRAMBLE.

VANDA BATEMANI.

THIS is an Orchid which I must tell "J. Acland" does not appear to me to be a suitable one for him. True, he has not told me the extent of his convenience or of his place, but simply asks if it is a good plant and worth his attention? This Vanda has been known for many years, having been first found by a French explorer between seventy and eighty years ago, and the celebrated Dutchman Blume rediscovered it, but it was not until about fifty years ago that our own countryman, Hugh Cummings, first sent the plant home in a living state, and it was first flowered in Europe by the gentleman whose name it bears, it having been dedicated to him by the famous Dr. Lindley; but it has also been called Stanouperia lissoclioides, Fieldia lissoclioides, and Vanda lissoclioides by various authors. The first generic name does not appear to me to have anything in it to distinguish it from Vanda, and the second one, Fieldia, dedicated to Baron Field, chief judge of

New South Wales, was already occupied by a greenish-white-flowered gesneriaceae plant which I used to grow some years ago, but which I have not seen for about thirty years, and as it is the only species in the genus it stands some chance of becoming extinct in our gardens, so that there does not appear to be much use in disturbing the present plant from Lindley's genus, whilst its original name of Lissocliolus is said not to be appropriate, and so the plant stands with Lindley's own name, by which it was figured in the *Botanical Register* for 1846, t. 59, a name, I think, by which it will be best known by most of my friends in the gardens of this country. It appears to be very widely distributed throughout the Islands of the Indian Ocean, more especially those of the Philippine group, and on one of these it was found by Mr. John Veitch some years ago, growing in great abundance on the seashore quite close to the water. For this reason such plants would, I think, be benefited by being some seaweed put about on the surface of the soil, and so they would be if it were used beneath the stages; indeed, Mr. Sander used to adopt this system in his Orchid-house, and I think too it was attended with good results. Why Mr. Sander abandoned it I cannot say, unless it was that it was attended with too great an expense. However, this Vanda Batemani is quite a giant of its race. It grows from 6 feet to 12 feet or more high, with broad strap-shaped leaves, which are some 18 inches or 2 feet long, making the plant 3 feet or 4 feet across. They are thick and leathery in texture and pale-green, and it is on account of its great size, which takes up so much space, that I do not think, unless you have a large collection and plenty of space, that the plant is one you should take in hand; but if you have both at command this is a plant you ought by no means to be without. The size would add dignity to the collection, whilst its long and many-flowered racemes would add fresh zest to your Orchid growing. The flowers are some 3 inches across. They are produced in one or two dozens together, and they last in beauty for one or two months, or even more. The sepals and petals are plain purplish-crimson on the back side, and yellowish-buff in front, spotted and blotched with purple in front. The lip is three lobed, small, buff. The plant wants just some Sphagnum Moss to keep it firm and moist, good drainage, and plenty of heat and moisture in the air at all seasons. MATT. BRAMBLE.

MORMODES PARDINUM.

IT is strange how fine varieties of Orchids crop up, and how they fall into amateurs' hands who do not know them. Now here is a splendid kind sent me from Leeds by "M. J. H.," asking its name and anything I know of it, saying it is one of a lot he bought in a sale-room about two years ago, for which he paid two shillings and sixpence for a lot of little pieces, and he says he has about twenty kinds of Orchids, some of which he hopes soon to flower. I shall be glad to render him all the assistance I can to get the various kinds named. Well, here we have one of the best varieties of this plant that I have ever seen, the yellow is so rich, and the crimson spotting is so rich also, and so profuse, that it is certainly very showy, and when you get this plant to bloom freely with spikes a foot or more long, and carrying a dense, many-flowered raceme it will be a thing of beauty and a joy for several weeks together in the year. It is now about fifty-five years ago since this plant first flowered in the country, having been discovered in the Province of Oaxaca some two years previously, and I do not think our gardens have ever been without since. This belongs to a curious race of plants which I do not know. It has the appearance of one of the curious frocks that many have, and I only know of one plant that is credited with being a variety or perhaps a sub-variety, for it is only a colour variety, being quite destitute of the profusion of rich crimson spots that make your flowers so very beautiful, it is called peridium unicolor; it is of a clear, bright yellow, quite destitute of spotting of any kind, and, consequently, neither so showy or so interesting as the plant we now have under consideration. This plant comes from a tolerably warm spot in the Province of Oaxaca, and for this reason it will be well to grow it in the warm end of the Cattleya-house,

or even the East Indian-house, or the warmest stove, with a nice moist atmosphere. They should be well drained, and the plants must not be syringed much, because the water lies so frequently in the young growth, and spoils it from want of the activity in the atmosphere; but I like to maintain a heavy moisture in the air. About this time, when the plants are flowering, they also are growing, so that they are nicely furnished with leaves, which will help to set the flowers off to the best advantage. And the plants must be kept in their growing condition until the bulb is finished up. When this is accomplished water must be gradually diminished until the plant is left quite dry. During this time its leaves will have gradually turned yellow and fallen off, when they may be stood upon a shelf in a cool-house, where the thermometer does not fall lower than about 50 degs. Here they may be kept quite dry until about the middle of the month of February, when they will require shaking out of the old soil and repotting, using for them about equal parts of turfy loam and peat, from which the greater portion of the fine soil has been shaken. Drain the pots well and elevate them upon a little cone-like mound to enable the water to run freely away from the young growths.

MATT. BRANBLE.

A note on bedding plants.—One of the most useful of all bedding plants are the Tufted Pansies. The show and fancy classes are not so useful for the garden as this charming race, which is getting more largely grown each year. The word "tufted" is an allusion to their tufted growth, and there is a charming gradation of colours in the flowers. Ordinary soil, but slight shelter and shade are more agreeable to them than full exposure. Nothing suits the plants better than a steady, moist border where they are not exposed to the fierce rays of a summer sun. The cuttings strike readily when taken in August or September and placed in a cold frame. Dibble them in moderately thickly, and leave them there until the following April, when they should be put out in the positions they are to beautify. Any old lights will give adequate protection during the winter, and a few mats thrown on in periods of hard frosts. Water liberally in dry weather, and keep seed-vessels picked off to prolong the display of flowers. If seed is required then, of course, it must be saved. It should be sown in February in shallow pans, placed in gentle heat, and in the month of April prick off the seedlings into other pans, planting them out in May. A good display of flowers may be expected in August, whilst if the seed is sown in July in a cold frame, the plants will, if put out in the following spring, bloom in June. Avoid gaudy or fancy kinds, but select those of self colours, which are always more effective than those flowers marked or spotted with a variety of tints, like mosaic. The fine Double Stocks, the Brompton, and the Ten-week, familiar garden flowers, are delightful to plant in beds. A crimson variety for the centre and a white kind outside make a delightful contrast, and a whiff of fragrance is carried on the wind. To get a quick display, sow the seed in March, treating it exactly as suggested for half-hardy annuals, and another sowing early in May will ensure an acceptable succession. Harden them well before planting out, and on no account risk the plants in the open before May. The rock upon which amateurs split in the culture of the Stock is the watering. Unless great care is taken to keep the soil always moist, never dry, the Stocks receive a check, become stunted in growth, and then bloom prematurely. The bright blue *Salvia patens* is a charming plant to fill the centre of a vase, and is grown in the same way, practically, as the Fuchsia. We may also associate with it the free and graceful *Pentstemon*, *Verbena*, *Verbenas*, not forgetting the old *V. Veronica*, China Asters, Zinnias, and *Lantana* may also be mentioned, but in ordinary gardens a

selection will suffice. Choose such things that create colour, and are not difficult to grow, as the Fuchsia or the Tuberous Begonia.—V. C.

OUTDOOR PLANTS.

LILIUM LEICHTLINI.

This is one of the prettiest of the more uncommon Lilies, but one that is somewhat particular in its cultural requirements. The flowers of *L. Leichtlini* are of a pleasing shade of rather pale yellow, copiously spotted, especially towards the centre, with red, while the exterior of the bloom is prettily flushed with the same hue. The petals reflex after the manner of those of the Tiger Lilies, but no description can do justice to the manner they are poised on slender stems in so delicate a fashion that they are

times noticeable in *L. Leichtlini*, as well as in two or three other Lilies, is that when the flower-stem first starts into growth, it will, instead of growing at once in an upright manner, proceed underground for some little distance before making its appearance. This same curious feature is also very noticeable in the case of the Neigherry Lily (*L. neigherryense*). A Lily possessing many points in common with *L. Leichtlini*, but at the same time differing from it in several particulars, is that known under the names of *L. pseudo-tigrinum*, *L. jeannandum*, and *L. Maximowiczii*, and, in addition, is frequently regarded as a variety of *L. tigrinum*. It is altogether a far more slender-growing plant than any of the Tiger Lilies, while another notable feature is the total absence of bulbils in the axils of the leaves, which form so prominent a feature in the case of *L. tigrinum*. The flowers of *L. Maximowiczii* are vermilion, spotted with black, and in shape a good deal like those of *L. Leichtlini*, but the flower-stalks are not quite so long and slender. H.



OUR READERS' ILLUSTRATIONS: *Liliium Leichtlini*. Engraved for GARDENING ILLUSTRATED from a photograph sent by Mr. A. D. Fort, Stoke Newington.

stirred by every breeze. Another feature, and that a very desirable one, in connection with the blooms is that they remain in perfection longer than those of most Lilies, and at no time do they fade after being open a few days, as some Lilies do. *L. Leichtlini* is one of the Lilies that are sent here from Japan during the winter months, but only in limited numbers, and as it is not a particularly good traveller, the bulbs do not always reach this country in a satisfactory condition. The bulbs are compact, flattened somewhat on the top, and bear a good deal of resemblance to those of *L. Batemanii*; in fact, when thoroughly dormant, some bulbs cannot be distinguished therefrom, while, on the other hand, one may feel confident with regard to some of them. *L. Leichtlini* commences to grow earlier in the season than *L. Batemanii*. It should be set in soil of a somewhat sandy nature, that, though thoroughly drained, is not dried up at all during the summer. A peculiarity some-

Iris Kämpferi.—A very beautiful summer flower is this Japanese Iris, which is seldom seen well grown in English gardens. The truth is that the plants require more moisture than is usually considered necessary, and will even live in water. Failure is the only possible result from plants not grown in a wet, loamy soil, but when in such a position a fine growth is made, set off in July by flowers of great breadth and splendid colour. The majority of the kinds are imported from Japan, and with each consignment also a drawing of the several kinds, so that the purchaser can tell what to expect. The flowers are very handsome when in either double or of bizarre colouring. The best kind are those of deep self hues, not marked, spotted, and flaked blooms, that are far less effectual and pleasing than the self shades. This is an important point. One of the finest forms is the pure white, which has a pleasing aspect by the side of a stream or lake. It is a pity that such flowers are not more grown in English gardens. It cannot be that there is no room, as in the majority of gardens no flower or plant life is to be seen by the margin of pond or lake, as the case may be, and it is exactly these places that need adornment. The Siberian Iris and its several forms, particularly the variety named *alba*, are great lovers of a moist soil, and, in truth, need moisture to keep them in good health.—C. T.

4220.—Flowers in a garden.—As regards the things to plant you cannot do better than get a good selection of bulbs. Read my notes on "Bulbous Plants" in last week's GARDENING, and the reply "A House Border," in July 22nd, page 287. You may plant all the things there mentioned in the autumn. Meanwhile, unless already done, I should advise you to get the ground in thorough order by trenching it, if it is crude and unwholesome—not an unusual state of things when the garden is fresh from the builder's hands. If very poor, it will pay to give the soil a heavy dressing of loam and manure, and if labels are used, they should be small; but in time you will get to know the plants, whether in leaf or flower. A great evil is disturbing the roots for the increase of stock or for the sake of making alterations until they have at least occupied the ground for five or six years. The majority of hardy plants never reach full beauty until about five years old, when division and a fresh site are beneficial to give them renewed strength. The two best seasons for planting are the autumn and spring, preferably early autumn, to give a long season for becoming established before frosts occur. In the spring they come up strongly in preparation for the annual manifestation of flowers; but when autumn has been missed, choose, say, March, growth then commencing.—C. T.

4221.—Fancy Pansies.—Fancy Pansies require just the same treatment as the old English type of Pansy, which may be

briefly stated thus: Prepare the beds early in September for autumn planting. If the soil is light add something of a heavier character, such as road-scrappings and heavy loam, with some two-year-old cow-manure. Work the soil up deeply, and leave it rough for the air to act upon it. Take the cuttings now. There are plenty of young shoots in the centre of the plants, some of which may probably be taken off with roots. Plant in a bed of sandy compost in a frame, or under a hand-light. For early flowering plant out in October. For later blooming take the cuttings in a month's time, or even later, keep under glass, but quite cool, all winter, and plant in March. Mulch and water are necessary in dry weather, and if very hot and dry when the plants are in bloom, if required for exhibition, shade for a few days before the show.—E. H.

— You will not experience great difficulty in growing these Pansies. You may sow seed at once, and propagate the seeds by cuttings. This will be by far the best plan, as then you are certain to get the kind true to name. The cuttings strike readily under a hand-glass, using light soil. Keep moist and slightly shaded. Select short, stobby shoots, which make the better plants. August and September are the best months for striking cuttings. Any good florist's catalogue will give you a list of the best kinds. The flowers must be round, smooth at the edge, velvety, firm, and the colour clear, varied, but the blotches must be large, well-defined, and the bedding regular. These are the rules judges go by. I do not care for this class myself. The Tufted Pansies, formerly known as Violas, are much better garden flowers.—C. T.

4225.—**Double Pyrethrums**—It is difficult to grow double or single Pyrethrums in a garden where slugs are troublesome, as they eat off the young growth just as it is coming through the soil in the spring. For the same reason it is not desirable to move or divide the plants when they are dormant. It is much safer to move them in the month of April or May, when they are in active growth, as they then quickly grow out of the way of the slugs. If you get seed from a good source you may raise some useful double varieties from it. There are, however, many very beautiful named ones to be had.—J. C. C.

— The cultivation of these charming plants is of the simplest. Once planted in any good garden soil, preferably of a light, loamy character, with free drainage, and they will flourish and bloom profusely for many years, only requiring to be divided and replanted when the clumps become too large. Spring is the best time to plant, whether young stock is purchased or home-grown plants are simply divided, towards the end of March or some time during April, according to the season, being the most suitable period. The ground should be made moderately rich with well decayed manure or leaf-soil, and a light dressing spread among the plants, and lightly forked in every autumn is very beneficial.—B. C. R.

— There is a long list of varieties and few bad kinds. Select those of decided colour, and the double white and double rose are very charming. This class is very hardy, and make a bright display in the garden, whilst the flowers produced very freely last a long time when gathered for the house. June is the month when they are in full perfection, but they continue to bloom more or less over a long season. As regards their culture they require very little. The time to propagate is in the spring, when they are commencing to grow, and a large, well-established mass will make several healthy plants. Ordinary soil will suffice, but it is better to get it rich, deep, and not too light. If too light the growth is weak and spindling, nor must the plants be in a shady position, as under these conditions the flower-stems are few and far between, and lanky. Plenty of sunshine, a deep soil, and a little attention to the plants when they are coming into bloom to prevent heavy winds and rains breaking down the masses of flowers, are the principal points for consideration.—C. T.

— These hardy perennials require no special treatment. Any good garden soil will grow them well. Put the young plants in the rows, plant in firm and watering well in. After they will take care of themselves until large enough to be taken up and pulled to pieces for multiplication.—A. G. BUTLER.

MAIZE OR INDIAN CORN (ZEA MAYS). This is one of the noblest of the Grasses that thrive in our climate, and it is an almost indispensable adornment to our gardens, where it has a fine appearance either in isolated masses or associated with other fine-leaved plants. Cuzco and Caragua (here figured) are the largest



Maize or Indian Corn (Zea Mays var. Caragua).

and finest of the green varieties, and gracillima the smallest and most useful. The variegated or Japanese Maize is a very handsome variety. Its beautiful variegation is reproduced true from seed. It is particularly useful for the outer margins of beds of sub-tropical plants and like positions, where its variegation may be well seen, and where its graceful leaves will prove effective. It should, in all cases, have light, rich, warm soil. It has a habit of breaking into shoots rather freely near the base of the central stem, and where it grows very freely this should recommend it for planting in an isolated manner, or in groups of three or five on the turf. The seeds of the Maize should be sown in a gentle hot-bed in April, although occasionally it will succeed if sown out-of-doors. Gradually harden off the plants before they have made more than three or four leaves, moving them to a cool frame very near the glass, so as to keep them stordy, finally exposing them in the same position by taking the lights quite off. This course is, perhaps, the more desirable in the case of the Variegated Maize, which does not grow so vigorously as the green kinds. In neither case should the plants be kept long in heat, for if thus treated they will not thrive so well. The first few leaves that the variegated kind makes are green, but they soon begin to manifest the variegation. The plants should be placed out-of-doors about the middle of May. G.

4250.—**Erigeron aurantiacus**.—I cannot understand how it is that this plant dies away so quickly with you. With me it grows vigorously in a rather rough but well drained soil. I think some insect must injure the roots, as I have seen it doing equally as well in other gardens as it does in mine. I have some plants just showing flower which I obtained from seed sown last September, and the plants wintered in the greenhouse. Try a layer of coal ashes, mixed with a little soot, round the collar of the plants.—J. C. C.

— Take up the old roots the first week in October, pull them in pieces, and plant in sandy soil in a cold frame. Do not make them too small, rather give them too much water during the winter. To prevent the roots rotting, give a draught of air on all favourable occasions. If the weather be tolerably mild about the

middle of March plant out where they are to flower. Should the weather be hot and dry keep the soil about them moist. No difficulty should be experienced in getting this herbaceous plant to flourish in a border facing either south or inclined to the east.—S. P.

4240.—**Planting Christmas Roses**.—Moderate sized plants will move safely in October (not earlier), but when lifted for division the best time is just as they are on the point of starting into growth in spring. Work plenty of old leaf-mould or manure into the ground.—E. H.

ROSES.

4220.—**Roses in borders**.—China Roses are, perhaps, the hardiest and most continuous bloomers that are suitable for your purpose, but, unfortunately, they are rather of small growth. They are, however, very beautiful, and, for the most part, fragrant. Archduke Charles, Ducber, Cramoisis, Supérieure, Fabvier, and the common pink variety are the best and most vigorous growers. You should be able to grow some of the hardiest Tea Roses in open borders in Sussex, especially such varieties as Marie Van Houtte, Mme. Lambert, Perle des Jardins, Mme. Eugène Verdier, Countess of Folkestone, Grace Darling, Hon. Edith Cliford, Princess of Wales, Mme. Falcoot, President, The Bride, and Lucile. You are no doubt aware that some of the Hybrid Perpetuals bloom in early summer and again in the autumn, and amongst these are flowers of the brightest colours. Some other good ones are Mrs. J. Laing, Boule de Neige, Jules Margottin, John Hopper, Charles Lefebvre, Magna Charta, Duke of Edinburgh, Mme. Cambacères, Lord Bacon, Mme. Bertrand, La France, Crisman Bedder, and Ella Gordon.—J. C. C.

4237.—**Rose not thriving**.—I cannot tell you why it is that your plant of this Rose has not grown properly. The general fault is that it grows too much the first year and does not flower. Seeing that it is planted against a wall it is more than probable that the want of root moisture is the cause. In such a position the roots ought to have been well watered three times a week during the late dry weather. If that is not the cause you may safely conclude that the roots are weak, and only time and patience will restore them to an active state.—J. C. C.

— You must remember that during the whole of the spring of this year the weather was extraordinarily dry, and either very cold or extremely hot, and, therefore, on the whole, most prejudicial to growth, especially in the case of newly-planted shrubs, &c. Under such circumstances watering goes a long way; but at the best this is far inferior in effect to the natural moisture that falls from the clouds. Again, in my experience this is a Rose that does not always grow away at once, but requires time. Have patience. Keep the foliage clean and the roots moist; it will be all right in time.—B. C. R.

— It has often puzzled me why some plants of W. A. Richardson do not thrive. I failed with the first three which I put in, but now I have one growing vigorously. I put the first plants in during the autumn and the last in the spring, and it has struck me that possibly this Rose requires warmth to enable it to get well rooted and established, after which it grows freely and becomes vigorous. Perhaps I am wrong, but I offer the suggestion for what it is worth.—A. G. BUTLER.

4249.—**Treatment of Pot Roses**.—It is rather late to deal with, as they require cutting hard back, and although they may start into growth again I am afraid it will be too late to do much good this season. The better plan appears to me to be to cut them hard back at the end of November. Even then it will depend on the age of the plants whether they break into growth again satisfactorily or not. If the wood is four or five years old they will start irregularly, but the earlier they are pruned in the winter the more likely they are to break well afterwards.—J. C. C.

4237.—**Rose La France**.—I do not know that the situation influences the behaviour of this Rose. At any rate, not such a favourable one as yours is not at all likely to do so in the direction you mention. You must adopt some means of keeping the caterpillars away. Why not watch the growth of the Rose early in the spring, and when you see a curled-up leaf examine it, and remove the insect? You are not likely to lose your trouble by removing the Rose to another position.—J. C. C.

CALLAS.

There are few, if any, plants that are so generally useful for decoration as the Calla, which by a little management may be had in bloom for a very long season, as by forcing some and retarding others flowers may be easily produced at Christmas, and a succession continued till Easter and after. Beautiful as is the new one, *C. Elliottiana*, and valuable as it will be for general purposes, it will never be anything like so extensively cultivated as the old favourite. For many, however, *C. ethiopica* gets too large, but now that we have the miniature form of it in *C. Little Gem*, it can be substituted, and will be found, though corresponding with the other in all but size, to be about one quarter the height, with flowers in similar proportion. *C. Little Gem* grows and increases very freely, as small plants when pulled apart in the spring, or after having made their growth in the autumn, will be found to have numerous little tubers or plantlets about their base, all of which should be taken care of and potted, as in a year if grown on in the ordinary way they will flower. The plan I pursue is to plant them out in wide trenches, prepared after the manner of those for Celery, only not so deep, but quite as heavily manured. During summer they are mulched and kept well watered, when they begin to form fresh leaves and can take it up and have active roots. Early in autumn they are lifted carefully and potted. In doing this I give them light rich soil after slightly reducing the balls, and when the potting is finished I stand the plants in a deep pit or under a wall where they are out of reach of the sun, and keep them sprinkled overhead frequently during the day, so as to prevent flagging. Any that may be wanted in early are differently treated; as soon after they get established they are subjected to gentle heat by being kept in a warm-house. Forcing has to be slow, and the plants should have all the light possible, or they become drawn and weak in the leaf-stems. If Callas are not planted out the pots should be plunged in the ground or have loose litter around them to keep the roots cool and uniformly moist and be well fed with liquid-manure. It is also a good plan to top-dress with solid manure, using cow or sheep droppings, as plants will not flower freely unless they make strong crowns by the autumn. The flowers of Callas sometimes come with double and treble spathe, as in the illustration. S. D.

FRUIT.

4241. — Strawberry growing for market.—I have not the least doubt that Strawberry growing for market can be made to pay in Somerset in a good season, but the one just past has been nearly a failure. With regard to sorts, James Veitch succeeds admirably in some places, and so do Sir Joseph Paxton, President, and Noble. You must give the plants plenty of room or the fruit will be small. James Veitch requires to be 30 inches apart each way, and the other sorts 2 feet. Fresh plantations of Noble should be made every year, when the plants may be set out 18 inches apart each way.—J. O. C.

4224. — Beet Gooseberries.—The large Gooseberries are much more planted now than they were formerly. The three best Gooseberries for cooking are Crown Bob, Industry, and Whitesmith. Perhaps the best Gooseberries for preserving are the Red Champagne and the Red Warrington, and the last-named is a very useful late dessert kind. The following are also good, but it should be understood that large Gooseberries require to be well ripened. The bushes require a good deal of thinning, and must be grown in any open, sunny position. Red: Companion, London, Wonderful, Roaring Lion, Clayton, and Bobby Yellow, Yellow Boy, Leveller, Glory, High Sheriff, Leader, and Brown Girl. Green: Ornate Green, Bumpor, Matchless, Keepeako, Lucy Brown, and British Oak. White: Antagonist, White Eagle, White Swan, Hero of the Nile, Freedom, and Overseer.—E. H.

4242.—Peaches in pots.—Yes, Peaches can be successfully grown in a cool greenhouse facing south; but you must understand that the pots must stand on the floor, and that the trees will require a good deal of room. The only

objection that can be raised against their being grown in pots is the possibility of the trees not getting water enough during the summer. If you are prepared to water them twice a day in hot weather I see no objection to your proposed plan. Pots 16 inches in diameter after the first year are the smallest sizes that should be used, and 3 inches more would be better. You had better begin with plants already established, and after getting them in the autumn shift them into larger pots. The best soil for them is turfy loam, which should be moderately dry when used, and be well rammed in about the roots. A quart of half-inch bones to each pot will be beneficial if mixed with the soil. Four good Peaches are *Ameden June*, *Early Grosse Mignonne*, *Dymond*, and *Sea Eagle*. Two good Nectarines will be found in *Lord Napier* and *Victoria*. Prune the trees into shape as soon as all the leaves have fallen, and keep the soil about the roots moist in winter as well as summer. The trees are not difficult to manage; at the same time, they want a good deal of attention from the time they come into flower until the fruit is gathered, as they are liable to be attacked with green-fly, and the leaves require to be syringed every evening.—J. C. C.

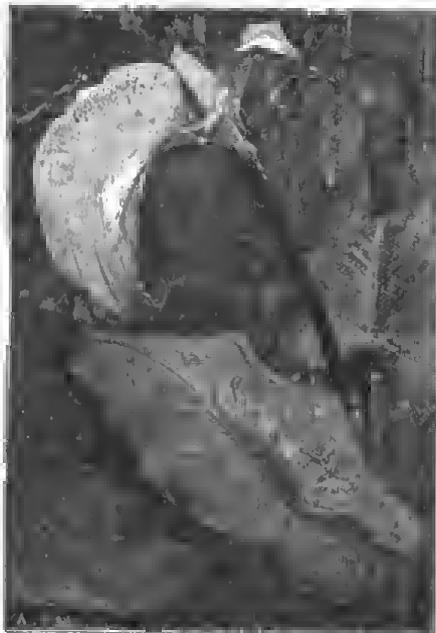
— There should be no difficulty in growing Peaches in pots in a cool greenhouse, providing the pots can be plunged in the earth inside the house during the summer months, which prevents the roots getting dry so quickly as they do when the pots are standing on an open stage. The trees must not be crowded by the regular occupants of the greenhouse, neither must the light be excluded from the trees by any overhanging climbing plants, like *Rosee*, *Tacsonia Van Volxemi*, or such like greenhouse plants. The month of November is the time to procure trees, those having been expressly prepared for this method of cultivating Peaches are the best and cheapest in the end. They are a free kind of pyramid in shape, with the branches closely pinched and pruned to four spurs. Pots 12 inches in diameter will be large enough for a

the shoots do not crowd each other. If the current year's shoots are more than 6 inches long, and well set with buds, they should be pruned back to that length. The trees will be all the better if left out-of-doors until the following February, protecting the pots from frost with long manure. Be careful to stand the pots on a hard base to prevent worms from making ingress to the soil, and interfering with the roots and drainage. When the trees are placed in the house the temperature should be kept low; not more than 45 degs. by night, with a rise of 5 degs. during the day. Syringe the trees about twelve o'clock daily with tepid water to induce them to break freely and maintain the roots in a moist state, but not too wet. When the new growth has reached 4 inches long pinch out the points to induce the base eyes to plump up and form fruit-buds. When the buds burst into bloom cease syringing and tap the branches daily to disperse the pollen and create a free "set" of fruit. When the fruit has fairly started swelling, syringe the trees twice daily with tepid water; the first time about eight a.m. and again at four o'clock, p.m. with a view to check the spread of any insect pest. Directly the fruit has passed the stoning stage supply the roots liberally with liquid-manure in a weak state, say every alternate time the trees require watering. Although Peaches enjoy abundance of air, it is not wiser to expose them to direct draughts by opening both top and bottom ventilators at the same time when a cold east or northerly wind is blowing. As the fruit shows signs of ripening cease syringing the trees, and when it is all gathered, remove the trees outside, plunging the pots in the open where abundance of sun and air can penetrate amongst the branches.—S. P.

— Peaches can be successfully grown in pots. Anyone who doubts this should pay a visit to the Sawbridgworth Nurseries, where thousands of thriving trees may be seen fruiting in pots, some of very large size, and from twenty years to thirty years old, but still healthy and fertile.

If I were asked does pot-culture pay it would be difficult to answer that question without a number of ifs and buts, and going further into it than present space permits. To be successful the cultivator must take an interest in his work, as a good deal of attention is required during the growing season in watering, regulating growth, &c. Most of the good fruiting sorts may be grown in pots, but I should not recommend the shy setting kinds, such as *Alexander*, *Waterloo*, *Noblesse*, or *Walburton's Admirable*. All the Nectarines do well. Established trees may be purchased any time in autumn, winter, or spring. The earlier the better. If maiden trees are purchased for potting, have them home and potted as early in the autumn as possible. Prune rather hard the first season. Afterwards the chief pruning will be done in June. Do not stop the young shoots too soon, let them make at least 8 inches of growth before nipping out the central bud. The trees may be wintered outside, the pots plunged in litter, and the house filled with *Chrysanthema*. To my mind this is where the principal advantage of pot-culture comes in; the tree can rest outside and the house made useful. Take the trees back to the house in January and do what little pruning required, and wash the stems and branches with an insecticide. The re-potting when required should be done in autumn, as Peach-trees will be making roots all winter.—E. H.

4251.—Gathering and storing fruit.—Your enquiry as applied to the present season is an interesting one, as, if I am not much mistaken, we shall find that the time stated in the catalogues when Peaches should be ripe will not prove to be very reliable—indeed, if never is, for Peaches have so many vagaries with regard to ripening that no one can give more than an approximation of it, and this season it is likely to take a wider range than usual. Peaches and Apricots have already ripened in the open air a month in advance of the usual time. Windsor Peaches are nearly over, when, as a rule, they are not ripe before the middle of August. We may therefore expect a corresponding advance in all



Treble-spathed Calla ethiopica.

good-sized tree, which should produce three dozen full-sized fruits. Turfy loam, partly decayed, should form the staple of the compost. Old lime rubble is an ingredient which tends to keep the whole porous, an essential point where the soil is naturally heavy and retentive. A slight sprinkling of finely ground bones will be an improvement if added to the soil at the time of potting. If the pots are not too much crowded with roots, they need not be changed for the first year. A top-dressing will suffice. Any pruning required should be done at potting time. The main point to observe is to see that

URBANA-CHAMPAIGN

other fruit. Referring to your list of Pears, the Jargonelle is the only one that is sometimes eaten from the tree. Louise Bonne de Jersey should be kept under notice after the middle of September. The others you mention will probably be ready for gathering a fortnight later. You are right in supposing that it is desirable to gather the late sorts in batches, and, notwithstanding what I have said, allow them to hang on the trees as long as it is safe for them to do so, only bear in mind that there are indications that they will come from the tree freely earlier than in ordinary seasons. Keep all the late sorts in a fairly dark room, which is ventilated for two or three hours each day, and the temperature from 40 degs. to 45 degs. I see I have omitted the name of Williams' Bon Chrétien. This sort only keeps for a few days after it is ripe, which is about the middle of September. The only way to prevent the birds from pecking the fruit is to cover the trees with $\frac{1}{2}$ -inch netting.—J. C. C.

4248.—**Fruit-trees for garden walls.**—Although Apple-trees grow well against walls, it seems a pity to take wall space with this fruit when such fine crops can be gathered from trees growing in the open. Walls are generally reserved for such fruit-trees as are not a success when planted in the open. For instance, the choice kinds of Pears, Cherries, Apricots, and Peaches, in addition to Plums. I will give the names of some of the best varieties of the fruit mentioned, "Mr. Piercy" can then use his own discretion as to how he will proceed in the planting of them. Plums are best grown as fan-shaped trees. No less a space than 12 feet should be given for this class of trees. As to varieties, Green Gage, Kirke's, and Jefferson are good for dessert, Victoria and Orleans for kitchen use. All are excellent cropping kinds. As to site, an eastern aspect answers well for Plums. Cherries need the same space as the former fruit, a wall with a western exposure suits this crop. Morello grows admirably against a north wall; Governor Wood, Bigarreau Napoleon, Elton, and May Duke are good free-bearing dessert kinds. Pears succeed as cordons, planted 18 inches or 2 feet apart. Under this system so many more varieties can be included. If this is not an object, horizontally-trained trees answer well and give heavy crops of fruit. Jargonelle, Louise Bonne de Jersey, Marie Louise, Pittmaston Duchess, Williams' Bon Chrétien, Glou Moresau, and Winter Nelis are good sorts to grow in every respect. Of Peaches, Alexander is much the earliest of any. Gros Mignonne and Bellegarde are good successional kinds; in fan shape is the way they are invariably trained. Moorpark is by far the most reliable Apricot. With regard to Apples, both kitchen and dessert, trees grown as bushes are much to be preferred. These should be grafted on the seedling Apple or Paradise-stock, as they commence bearing the second season following planting; indeed, many would bear, and do so sometimes, the first year, but it is not wise to allow them to do so, as the growth of the tree is weakened by the extra strain placed upon it in its weakened state through interference with the roots in planting. The following is a good selection of sorts: Kitchen: Lord Grosvenor, Warner's King, Echlinville, Lano's Prince Albert, Golden Spire, Bramley's Seedling, and Newton Wonder, the last two being late keeping varieties. Dessert: Devonshire Quarrendon, Red Atrachan, Lady Sudeley, Irish Peach, Worcester Pearmain, Cox's Orange Pippin, King of Pippins, Blenheim Grange, and Sturmer Pippin. In all cases I do not advise that cheap trees be bought; they are very often the dearest in the end. Procure those well rooted, and not more than four years old. The first week in November is the best time to plant fruit-trees of all kinds. A mchling of half-decayed stable-manne, laid on the surface-soil 2 inches thick will preserve the roots from frost, and act as a conservator of moisture to the soil during the summer if the weather is at any time of a protracted drooghty character. Previous to planting the trees the soil for 2 feet deep should be well broken up, not only to enable the roots to run freely into it, but as a means of drawing off the surplus water after heavy rains, which chills the soil near the surface.—S. P.

2939.—**Treatment of a Hydrangea.**—If the young growths of this season are well ripened flowers will form on the ends of the

shoots next spring. If the plant is set out in the garden it should be lifted and put in a pot in September, unless the position is very warm and sheltered. They flower outside on the south coast, but north of London it is rare to see it flowering outside.—E. H.

HOUSE & WINDOW GARDENING.

4227.—**Plants in a bedroom.**—Strong-scented plants are not suitable for a bedroom. In the early spring months, Snowdrops, Blue Scillas (Squill) and Tulips, and Lily of the Valley would be suitable, but not Hyacinths. Plants which require much water, such as Spiraeas should, I think, be avoided, but a nice White Azalea would last a long time with careful watering. Primulas and Cyclamens also, and later on Gloxinias, would be easily managed. Then in summer there are "Geraniums," Fuchsias, and Tuberosa Begonias. At the present time Campanula isophylla and its white variety are charming table ornaments, or on brackets near the window. In the autumn Saarberough Lilies, with a Pompon Chrysanthemum or two, with a Palm or a Fern or two, will be very attractive. The best Palms for rooms are the Kentias. They are graceful in habit, are not difficult to manage if watered carefully and the foliage kept clean, and they do not require large pots so soon as the Latonias and Scaforthias.—E. H.

—We do not think it is advisable to have many plants in a bedroom, but plants that thrive in rooms generally will also succeed in a bedroom, if given a fair share of light, air, and carefully watered. You would have in the window the pretty Campanula murelis (a mass of bloom) in the summer, *O. carpatice*, *C. isophylla*, and the variety *alba*, besides, of course, Pelargoniums, but they will need to be replenished, as all flowering plants. Things in bloom do not keep very long under such conditions. The *Aspidistra* (green and variegated forms), *Aralia Sieboldii*, such good hardy Palms as *Corypha australis*, and *Enlalia japonica*, will thrive—the latter to have plenty of water. Always keep the leaves carefully sponged with tepid water to remove accumulations of dust, and stand them out in gentle rain occasionally. This refreshes them greatly.—O. T.

4198.—**Plants for windows.**—It may be feared that the Roses, hardy though they may be, will not do much after the first year if the "tawn" be London, as Roses will not stand a smoky atmosphere, even under the best cultivation. For the north windows either Ferns or foliage plants must be selected, as flowering plants would not do well there. The best room Ferns are those of the *Pteris* family—*Pteris serrulata* and *Pteris cretica* being easily procured, and standing well in a room. There is a pretty variety of the first, *P. serrulata cristatum*, with crested tips, which is especially handsome as a room plant. English Ferns, too (Crested Hart's-tongue—*Scolopendrium vulgare cristatum*—being the best as evergreen), are well worth growing now that they have been so much improved by special cultivation, and these give no anxiety in the coldest weather, being quite hardy, of course. Palms, too, would grow in the north windows, and these are capital room plants, for they do not need potting often, and do not care for sunshine. They must, however, have their broad leaves kept thoroughly clean by sponging off the dust occasionally, and should never be allowed to become dust dry, although water should not be given to them until the surface-soil is dry, when enough to run through the pot (soft water, with the chill off in winter, in preference) should be given them, their canner being emptied half an hour afterwards. *Phoenix dactylifera* (the Date Palm), *Corypha australis* (the Cabbage Palm), *Scaforthia elegans* (the Bungalow Palm), *Chamaerops elata* (the Fan Palm), and *Chamaerops humilis* (the Dwarf Fan Palm) are amongst the best Palms for a room, for they will even stand a little gas occasionally if the leaves are kept sponged, although gas usually kills plants, and no flowering plant will stand it. *Aspidistra lurida*, too (called the Parlor Palm, though not really of the Palm family), is a first-rate gas-resisting plant, which only needs the same conditions as the Palms; and *Ficus elastica* (the India-rubber-plant) may be placed in the same

category, its broad, shining leaves being very handsome. One or two of the *Dracaenas*, *D. indivisa* and *D. congesta*, stand well in a north window, and *Grevillea robusta* (the Australian Silken Gask) is a beautiful Fern-like little tree well worth attention, as it does well in a room for a long time. For a west window flowering plants may be tried, though the aspect is not so good as that which gives the morning sunshine. Fuchsias, Zonal Polargoniums ("Geraniums"), Perpetual-flowering Begonias, and a host of other plants would do here for a time, but it would not be possible to give the special cultivation of each in the answer. "Joseph Martin" will find an article on these Begonias in the last issue of GARDENING, and every week there are some particulars of the cultivation of room plants, giving the details necessary. Bulbs of many kinds may be put in during the autumn, and these will flower in early spring, but if "Joseph Martin" will dole which he wishes to grow, and give more particulars as to whether any garden, frame, or yard is available for plants not in flower, the special cultivation of each kind of bulb or flowering plant will be given with pleasure. There is yet another large group of plants which might be made available for these windows—i.e., hardy plants, which can be grown in pots out-of-doors until they begin to bloom, and then lifted into the window. In this way Carnations, Gladioli, Lilies, Pentstemons, Foxgloves, Wallflowers, and many other blossoms may be had at a slight expense, and without much difficulty, the pots being sunk to the rim in a bed of fine ashes, in a back yard or garden, or placed in boxes of ashes on the leads. Good soil, regular watering, and slight protection during winter, when these plants should have 2 inches of ashes placed round their stems, and a bit of carpet over them during very severe weather, will keep up a good supply of hardy plants in this way.—I. L. K.

4193.—**Roses in a window.**—The Roses in question are not so delicate as the Tea-scented varieties, and will not need much protection during the winter. The more they can be out-of-doors the better for them, as Roses do not do well for long together in a room, soon becoming too weak to flower. When they have done blooming they should be placed in the open air, the pots sunk in a bed of ashes to the rim, or else, if no garden be available, a box of ashes will do as well in a sunny yard or outside a window, or on the leads. Here they can remain till October, when they should be pruned a little and repotted, giving them a shift into the next sized pot, with good light compost (turfy loam, leaf-mould, and a sprinkling of soft and sand, but no new manure) and excellent drainage. As amateurs do not always understand how to repot, a few words of explanation may be useful. Cover the hole with a piece of broken pot (the concave side being downwards), and place round this smaller pieces of crook, so arranged as to allow of escape of water through the interstices. Cover the crooks with a bit of Moss (which lasts a long time without rotting, and keeps the soil from clogging the drainage), and sprinkle this with a teaspoonful of soot, which is a strong manure, and not only helps to nourish the plant, but keeps out worms and insects. Then place a little soil over this, and turn the plant out of the pot into the left hand. Remove the drainage, and spread out the lower roots slightly, also pare away the upper soil, so far as it does not interfere with the roots. Then place the ball of the roots in the new pot (which must be thoroughly clean and dry inside and out to start with), and pack the fresh compost firmly round it, using a blunt potting-stick to prevent any empty spaces between the pot and the ball of roots. Finish off tidily at the top, leaving at least an inch for a thorough supply of water, and in most cases more than this, so that a top-dressing can be applied. In pruning the Roses cut out first the weak twiggy wood, which is often half dead; then shorten the stout new shoots to a good dormant eye, about 4 inches from the surface-soil, or more if quantity and not quality of bloom is desired, the piece thus cut off (of this year's growth) can be put into the open ground as cuttings, placing them in firmly, with one eye only above ground, in sandy soil. The Roses will do best out-of-doors, the pots being protected with ashes, until severe weather sets in, when they may be placed in the window of a room without a fire, as close as possible to the

glass, and will begin to bloom early in the spring if given regular watering when necessary, with an abundance of air. In mild weather they should stand outside as much as possible. Rain will help to cleanse the foliage, but a bit of soft old sponge and soapy water should be always at hand to destroy the first symptoms of green-fly, their special enemy.—I. L. R.

FERNS.

THE BRITISH POLYPODIES.

A "LADY READER" has been collecting some of these in Yorkshire and Cumberland; and now wants to know what she is to do with the roots to get them to grow? Now, according to my belief, there is but one species of Polypodium native of Britain, and the Beech Fern and the Oak Fern I do not recognise as true Polypodiums at all, but these belong to the genus Phegopteris, which by some is made a sectional name only. There, however, appears to be good reasons for these authors who give it generic distinction, with which I quite concur; but in the present case I will just say a few words on the British Polypodies and include these, for argument's sake. The Oak Fern (P. Dryopteris) is one of the most charming of our native Ferns, its beautiful bright-green fronds rendering it conspicuous and noteworthy to all beholders, and its young fronds are peculiar in having the terete divisions rolled up like little hails upon wires. This Fern is widely distributed all over Europe, beside other places, and, amongst other places in Europe, England appears to be one over which it is widely distributed, for I have gathered its bright light-green fronds when walking about in the Derbyshire Peak country, all about in Yorkshire and Lancashire, where it grows in great abundance in the stone walls which divide the fields, and which appear well suited for the requirements of its creeping rhizomes, so much so that I was tempted to build a similar one in my rockery to establish this species, and which I plan to recommend to the attention of my enquiring friend, and she will find that, although these plants, will not make much visible progress this season, their fronds will peep out early in April of next year. I have found this plant in so many places in going North and in Wales that I cannot name them, but I have never found it in Ireland, but I believe that it is to be found in that country, but that it is very rare. The Limestone Polypody (P. Robertianum) is another deciduous species of quite a different shade of green. It is larger, too, in its fronds, which have a coating of slender, fine hairs. Altogether, I am of opinion that this plant should rank as a species. I do not agree with those who make it rank as a sub-species. It is a Fern that appears to delight in the sunshine, and it only grows in calcareous soil. This Fern would seem to be spread through many counties, appearing plentiful in the North of England, but I have never heard of its being found either in Scotland or Ireland.

THE BEECH FERN (P. vulgaris) is a well marked and very distinct kind. When growing strongly the fronds attain to a foot in height, the lowest pair of pinnae being deflexed, whilst the others incline upwards, and the whole frond has a pubescent appearance. It seems to be fairly distributed through the three kingdoms. All these plants appear to be pretty constant. Some few differences I have observed, but when the fronds die down the variety dies out, and one seldom sees it again, and they will all grow together, so I advise my enquirer to plant them in what in Yorkshire they call a toad-holing wall, when, as I have before remarked, they will make good progress, and be able to show their beauties to the eye next spring. The alpine Polypody (P. alpestre) and its very delicate variety P. alpestre flexilis have a general resemblance to the Lady Fern. Some authors, indeed, class it with that species, but I think in this they are much to blame for so doing. It is a plant of much interest, as it is within about fifty years being discovered to be new, and it was until then looked upon as belonging to the Lady Ferns, with which it grows in Scotland. This plant and its varieties grows well in well drained loam and peat, and it likes a shady situation; and now we come to the common Polypody (Polypodium vulgare). This is a [throughout] at least, when it can get moisture to its roots—but

I have some roots which lost their old leaves through drought, and which have also been subjected to the very dry season we have had, and these did not show any sign of growing until the month of July, when they began to push up fresh fronds. It is a plant widely distributed throughout the temperate regions of the Globe. The fronds of the typical plant are dull-green in colour, which is relieved on the under side by the orange-coloured apices. Of this plant there are many varieties, and amongst them all, perhaps the most beautiful is trichomanoides, which has finely divided fronds of a most exquisite character. The Welsh Polypody (P. cambrium) is another grand form, which has the pinnae again divided which overlap. This form has never been found in a fertile state. Cristatum is another form of which there are several varieties all bearing the same name. But amongst the other named varieties I would particularly call attention to the forms called grandiceps, and the beautiful plant called omnilaceum. There are many others, and doubtless there remain many good forms, especially in the Ardennes Mountains, where this species abounds. To grow this plant well



Oak Fern (Polypodium Dryopteris).

it should have a good depth of leaf-mould beneath it, and this should be kept always wet, and its rhizomes should not be buried. J. J.

4233.—Weeds on a lawn.—There is no more satisfactory way of getting rid of big weeds on lawns than to dig them out, and no better time could be had for doing so than the present, as the Grass is growing rapidly and will soon cover over the vacant spaces. With regard to the Yellow Hawkweed, of which you complain of having so much, I hardly know what to recommend you to do. I know, in one sense, it is a tiresome subject, as the flowers remain closed until the sun comes out, and then they burst into a sheet of yellow, which is objectionable; on the other hand, it is a case of the survival of the fittest, as it grows where Grass does not thrive in dry weather, so that if you get rid of the weed it is possible that your lawn may be bare of Grass in a dry summer. For that reason I have had to let this weed remain, and when it has not been necessary to use the lawnmower I have waited until the flowers were out, and then sent a man with a sharp scythe and cut them off, as it is almost impos-

sible to toll where the little flower-heads are until they are expanded. This weed only grows in quantities where the soil is thin and poor.—J. C. C.

—You cannot do better than set upon the advice often given, and that is to root them out with an old knife, or cutting off the plant close to the ground. This is the best and old plan. Bare spots may be made good by pieces of turf, so as not to make unsightly patches.—C. T.

4203.—Destroying ants.—The best thing you can do is to dig down by the wall and try and find where the nest really is; you might then be able to reach it with boiling water or diluted carbolic acid. If the nest is in the foundations you might osment the part over. Are the ants doing any harm?—G. S. S.

4213.—Extirpating Horse-radish.—You cannot do better than continue the course you are adopting. Got up as many of the old roots as you can. Your efforts will be crowned with success at last in spite of this opinion of your gardener. Ever cutting off the leaves persistently will kill the roots.—G. S. S.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editors of GARDENING, 37, Southampton Street, Covent Garden, London. Letters on business should be sent to the PUBLISHERS. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by adding, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appeared.

4209.—An old Apple-tree.—What should I do with so old an Apple-tree that does not bear well?—HUGH DESPRAE.

4270.—Basket-plants.—What hanging or basket-plants can I have in winter for a greenhouse which has no means of heating?—A. J. GIBB.

4271.—Manure for Vines.—Will someone please to let me know if there is a good manure for Vines in a boiler under glass?—B. D. FERRIS.

4272.—Roses for an outdoor border.—Will someone please give me a list of Roses with best foliage for out-of-doors border?—B. D. FERRIS.

4273.—Sorel and French Beans for winter.—Will anyone kindly tell me how to preserve Sorel for winter use? Also French Beans?—S. LINDEAY.

4274.—Breaking stones.—I want to break up some stones, flints, &c., very small to mix with my garden mould. What is a cheap and easy way to do so?—M. M. OWEN.

4275.—Treatment of Cactuses.—What soil do Cactuses require, and how are they propagated? I have one or two White Cactuses. Are they rare?—HUGH DESPRAE.

4276.—Everlasting Peas.—How are Everlasting Peas propagated? By seeds or by cuttings? I have a White Everlasting Pea; I am told it is rare; is that so?—HUGH DESPRAE.

4277.—Winter flowers.—Will anyone kindly give the names of some flowers which will blossom in winter in a moderately warm greenhouse? Locality, Ramsgate.—G. WILLIAMS.

4278.—Begonias in pots.—I have a considerable quantity of Begonias in pots, and will be glad if someone will tell me how to keep them through the winter, as I lost a lot last year?—F. T.

4279.—Single Begonias as cut flowers.—I am anxious to exhibit some single Begonia blooms, but find when cut they soon wither. Will anyone kindly give me a remedy for this?—F. G. I.

4280.—Fig-trees under glass.—I have some Fig-trees under glass. They do not bear well. Will anyone kindly tell me how to treat them? Do they require much manure and water?—JANA SPASOW.

4281.—Freesias in a cold house.—Can I grow Freesias in a house without heat? If so, how? I have never flowered this season, but made a great quantity of small corns. Locality, Aldershot.—H.

4282.—Destroying wireworms.—I have about 20 peels of newly broken-up ground, and it is infested with wireworms. What is the best thing to use to destroy them? Locality, High Barrow.—W. WILLIAMS.

4283.—Roses on a low wall.—I have a low brick wall, facing north by east. Will Tea Roses do on it? I have been told they will. If so, will someone please to recommend the best sorts?—LAWRENCE EVANS.

4284.—Carnations, &c.—I am puzzled to know the difference between Carnations, Pinks, and Pinks, also the faded varieties and selfs. Perhaps someone will kindly help to enlighten me on these points?—C. R.

4285.—Pachala in a cold house.—I lost my Pachala under the roof of my cold-house last winter, and have not flowered about a foot high. How can I keep them alive so as to grow on again next spring without cutting down? Locality, Aldershot.—H. A.

4286.—Plants for a rookery.—I have a large extent of rookery to furnish. The greater part of it is exposed to strong and midday sunbath. Could I make it profitable at this time of year? Of course, I shall stock it with *Ferax* to autumn.—O. L.

4287.—Plants under stages.—Will someone kindly give me an idea and names of plants to grow under two stages of 12 feet by 1 1/2 feet, in a Fern-house? I have Moss now growing, but it does not look well, it being so fat. Any idea I shall be glad of.—Nemo.

4288.—Plants in a Rhododendron-bed.—Hints would be gratefully received as to what plants would flourish in a Rhododendron-bed, so as to make it less dull both before and after the flowering of the Rhododendrons? Aspect, west; situation, sheltered.—TOAGWAY.

4289.—Treatment of *Diosma*.—I wish to know the right treatment for old sweet-scented *Diosma* that have become very unightly from long neglect? Is it too late for them to make fresh growth if pruned now and either placed in the open air or in a cool greenhouse?—O. L.

4290.—*Asclepias mollis* on a bank.—Would "O. T." or anyone kindly inform me if *Asclepias mollis* (and others) would do on a bank on the north side of a Laurel-hedge, about 8 feet high? They would lose N.W.W. Would the roots of the Laurels interfere much with their growth?—A. C.

4291.—Coloured bones and leather.—Would someone kindly say if coloured bones and leather (of which I have a quantity) would be suitable for drainage or mixing with the compost for potting Roses, *Fuchsias*, &c.? Any other information on this matter would be greatly obliged.—CONSTANT READER.

4292.—Black Currant bushes.—I have a row of Black Currant bushes which this year has been infested with green-fly, and the fruit completely destroyed. Will anyone kindly tell me if this could be prevented next year and how? Also when is the proper time to prune Black Currant bushes and how?—SHILOON.

4293.—Pimper plants.—I have a dozen which I raised from seed. They are now in thumb-pots, and about 6 inches to 8 inches high. How shall I proceed with them? They want a white bed. Should they be planted in the open garden? District, Shanklin, Isle of Wight. Any information will be greatly obliged.—A. Z.

4294.—A tenant's fixture greenhouse.—I am about to erect a tenant's fixture greenhouse, 15 feet by 9 feet. Would some correspondent please inform me if I may relyably put a single row of blue bricks (no mortar) all round for the above to stand upon, with the idea of keeping down the damp from the woodwork?—G. WILKES.

4295.—Making a lawn.—Will anyone kindly inform me how to make a large lawn (1 acre) on land that was, until three years ago, Heath land, and which is now covered with rough Grass and Moss, but has never been cultivated? The subsoil is sand, and the ground has a natural slope of 1 inch in 12 inches away from the house?—ALINE.

4296.—Plants going to leaf.—Will someone please tell me why it is the plants in my garden are so long a leaf and so few flowers? The plants in question are about, more deeply, more heavily set year, none this year, thinking it might be due to cause of this vigorous fruit growth of "Geraniums" in particular. Would the roots of trees near cause it?—SUSANNA.

4297.—Improving a tennis-lawn.—I shall be greatly obliged to anyone who will answer the following questions: 1. What is the best stimulant to be put on a tennis-lawn to strengthen the Grass, and the best to produce a luxuriant crop of Grass in a small meadow in which a cow is kept? 2. What is the proper season for giving such a stimulant in each case?—W. E. M.

4298.—Roses not flowering.—I have about ten H. F. Roses which were rooted in 9-inch pots about two years ago, and first flowered in 1891 and 1892, but this year, though they have grown very vigorously since they were pruned in February, there is not even a single flower-bud on them. Would someone kindly say what should be done with them? They are in a greenhouse close to the roof.—Wm. BROWN.

4299.—Double and Single *Begonia*.—I put in cuttings of *Begonia*, both double and single, about the middle of March. They are now about 3 feet high and 2 1/2 feet through, covered with bloom. Would someone tell me how long these plants should bloom, and if they consider them good plants for the time. I am told they are nothing to what can be grown in England. Is this so? An answer to this will oblige.—SCOTLAND.

4300.—Treatment of *Abutilons*.—I shall be very much obliged if anyone will tell me what to do to make my *Abutilons* grow strong and have large flowers? The only flowers they have had at present have been very small, and the plants look very weakly. I admire *Abutilons* very much, and would like to grow them well. I can see the roots both top and bottom of the pot, but am afraid of killing them if I move them now.—M. F. B.

4301.—Treatment of an Apple and Pear tree.—I have an Apple and a Pear-tree which have been planted ten years in a poor gravelly soil on a lawn. Both trees make plenty of growth, and are almost overworked with foliage. They only bear a very small quantity of fruit on the lower branches; they have had liberal supplies of liquid-manure. Will someone tell me how and when is the best to treat them? Town, Southampton.—DARTON.

4302.—*Palargonium* cuttings.—I have tried often to strike cuttings of these singly in 3-inch pots of light sandy soil, but they always turn black in the stem and fall. Should the soil be watered after the cuttings are put in, or only made damp beforehand? Should the soil be kept always damp, or allowed to get dry before being watered again? Should the pots be put in a box and covered with glass, or kept in a shell in the greenhouse? Any hints will oblige.—Wm. BROWN.

4303.—Treatment of an *Aracaria*.—Will someone kindly tell me what to do with an *Aracaria* tree which is losing its lower branches, and becoming of a greyish reticulated brown? There is a kind of stuff coming out of the stem in several places. It has been in its present position for twenty years, and was very

healthy and very well forsohad till quite lately. An early answer will oblige as I am afraid to lose it. It is a handsome tree, and I do not know what to do with it.—FRAN.

4304.—Treatment of *Vines*.—I have sixteen *Vines* that I planted last autumn, struck from eyes in the spring of last year. The first season in pots they made about 10 feet of rod each. I cut them back to about half a yard since, and this season, made on an average 2 1/2 feet rods, and measure in circumference at the base 3 inches by 3 1/2 inches. They will average about 3 inches. How many bunches would it be advisable for me to leave on a *Vine* now, and how far ought I to cut them back this winter?—J. C.

4305.—Plants for a hot greenhouse.—I have just built a lean-to greenhouse outside my drawing-room window on the leads forming a corridor on the second floor, facing the east. I find it gets very hot and always very dry, no matter how much water is put down. Will someone name about a dozen plants that would be likely to do well in such a position? I am very fond of cresspears, foliage plants, and Ferns, but cannot get the latter to grow well. Size of greenhouse, 11 feet by 5 feet, and 10 feet high; town, Southampton.—DAYTON.

4306.—Pot-Vines.—I have six pot-Vines that have been bearing three years, I think. They are very much pot-bound, have not been potted in the time I should say. I have had much trouble to keep them alive, so the pots are so full of roots. Would "J. C. O." or someone advise me what I can do with them, or if they are useless after the treatment they have had? I found them bearing a great many bunches when I took them to May last, which did not all fill out. They have been hard frosted, I think, as I have cuttings in the middle of June and have just finished.—W. W. C.

4307.—Smilax asparagus.—Will someone kindly tell me how to grow *Smilax asparagus* from seed? I have a plant of the above in a greenhouse. Early this year it bloomed and ripened a nice lot of seed. When black these seeds fell off, and the plant died down. Soon afterwards one young shoot, followed by a second growth, came up, and both are growing vigorously. I want to increase my stock of this kind. I once obtained seed from a large and good seed-house, but though seeds were sown, some in heat and others without, every seed failed to grow.—O. T. W.

4308.—"Poroling" bed in a stove.—I shall be glad if anyone will be so kind as to tell me whether it would be better to have a hot-air or hot-water chamber for working a forcing bed in a stove-house? Would it be advisable to put a shallow tank about a foot deep to provide the requisite bottom-heat, say 30 degs. above the temperature of the house—viz, 90 degs. to 100 degs.). I have three rows of 4-inch pipes available. How many of these rows should he taken up for this purpose? The rows are one above the other, so will the top one be sufficient? Any information as to the construction of the bed will also much oblige? The bed would be 2 feet 6 inches in width.—BINGO.

4309.—*Palargonium* "Mester Christine".—Will someone kindly give me a full description as to the appearance of *Palargonium Mester Christine*? Many years ago I was told to get a plant of this name, and I have since multiplied it, and used it for bedding, always considering it to be a *Mester Christine*. To my astonishment this summer a friend flatly contradicted my assertion that it was so named, and has sent me a widely different *Geranium* as his *Mester Christine*. Mine is very like the parent plant "Christine," only with darker some on leaf and richer coloured petals of a salmon-tint. My friend's is a bright yellow-green leaf with no zone, and a bluish-pink blossom just like the very old Pink *Geranium* of forty years ago.—EUCALYPTUS.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

4310.—*Adiantum* turning yellow (*Nemo*).—These fronds have the appearance of being overwatered, and of being exposed to the sun when wet. Keep the air moist, and the plants too, but shade from the sun, and, by the bye, be sure that the drainage is right.—J. J.

4311.—*Polysetichum Lonchitis* (*F. R. Jones*).—The root seed appears to be this species. I have never seen the varieties of *P. lobatum* so much like this species, and some of them are imposed upon the unwary lot; but I do not think anyone has imposed upon you.—J. J.

4312.—*Anglica uniflora*.—B. B. sends a very pretty form of this species for a name, the ground colour being of a soft, creamy white, profusely spotted with pink. This is a very handsome form which deserves far more cultivation than it appears to meet with, more especially as it grows well with the quiet cool *Odonoglossum*.—M. B.

4313.—*Vanda tricolor formosa* (*J. Johnston*).—This is the variety you send for a name, and it has a very nice aromatic perfume, and the plant, as you say, has a very stout and massive growth. The flowers are large. Sepals and petals have a ground colour of yellow, with rows of spots of reddish-brown, which sometimes become confluent.—M. B.

4314.—*Didymochloa innotata* (*H. Thompson*).—The pieces of the fronds sent clearly tell their own tale, the plant having got dry from time to time, and the base of the pinnae being articulated with the rachis, they shrink and fall out when they become dry. Nothing will save them. They will fall out, and therefore you must cut the plant suffer for want of water say more.—J. J.

4315.—*Disa grandiflora* (*C. A. M.*).—The *Pride of Table Mountain*, this is the name of the flower you send, and a lovely one it is. I have seen upwards of five hundred blooms open in one group. Yes, there is some probability of its not wanting much heat, and after flowering it should be in a partial rest. It commences to grow in winter, and a little time it may be accommodated to the *Camellia* house.—M. B.

4610.—Time for potting *Ochrids* (*Thos. Darbrook*).—It matters not what the time of year. If the plants are only half so bad as you say you should have them out of the old soil at once, and start the pots well and repot them, for plants that are in such a state should not stay a single day. Even if it be in the middle of winter I would certainly have them out.—M. B.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

Enquirer.—Apply to Mr. J. Douglas, Great George, Hill, Essex.—*De Begonia* are affected with strips, and are possibly suffering also from the effects of overwatering with Tobacco. Please give more particulars.

NAMES OF PLANTS AND FRUITS.

Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C.

Names of plants.—*J. Macarthy*.—1, *Orobosche* (major (the Broom Hippo); 2, *Polemonium coleroseum*; 3, *Rosera*;—4, *Oenothera biennis*; 5, *Malva moschata*; 6, *Scabiosa succisa*; 4, the same species, white variety;—H. Thompson.—1, *Asplenium pulchrum*; 2, *Microlepis pinnae*; 3, *Diplazium divaricatum*; 4, *Litobrochia maculata*; 5, *Nephrolepis hirsutis*; 6, *Diplazium Franconia*.—G. H. B. (Luton).—It is probably *Oxleya Browningiana*, but on account of being so deformed we cannot say with certainty. C. H.—1, *Cedrela guttata* (Lepidyl); 2, *Urtica crispata*, good form. —*Vento*.—Cannot name from a single leaf. If the plant flowers send blossom and leaves together.—T. A. Rowley.—*Enallia japonica variegata*.—W. Dasher.—*Galleria Lorenzana*. A good plant. —*Arbor*.—Letter received, but no leaf was enclosed. —*Aer*.—Cannot name from such specimens. —*Dr. F. Hawthorn*.—*Epidendrum alatum*.

Naming fruit.—Readers who desire our help in naming fruit must bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its determination. We can only undertake to name four varieties at a time, and these only when the above directions are observed. Unpaid parcels will be refused. Any communication respecting plants or fruits should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C.

Names of Fruit.—Subscriber, *Baltimore*.—Good-sized fruits of a Gooseberry, probably *Whitesmith*, but we cannot name accurately, as the berries were much crushed.

POULTRY & RABBITS.

4317.—Powl with a red skin.—Will anyone kindly tell me why my Plymouth Rock cock, a fine bird now moulting, has a bright red skin all over the body? Even the legs are reddish. What should I do? He has a large run.—E. L. T.

4318.—Chickens losing their feathers.—Will anyone kindly inform me what is the best treatment for chickens to get their feathers come out when they are not moulting? My chickens have been losing their feathers on one foot for the last year. I have tried rubbing them with soap and butter, which made their feathers grow for a time again. They are kept in a good-sized run at the bottom of my garden, which is in a town. They have soft food in the morning, and hard in the afternoon, also green food.—E. B. B. (Luton).

4319.—Poultry.—I should, first of all, give the owners of the fowls formal notice to keep them at home, and if they failed to do so I should send in a claim for damages, and take legal proceedings to obtain payment of the same.—B. O. R.

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GARDENING ILLUSTRATED.

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Founded by W. Robinson, Author of "The English Flower Garden."

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SELF-COLOURED FLOWERS.

The boldest effects we have in our gardens are produced by self-coloured flowers, and it is a pleasing sign of the times that these are in general request. In vari-coloured flowers one must make a broad distinction between those whose tints are harmoniously blended and those of an opposite character. Some of our garden flowers are naturally harmonious in their varied forms, such as the *Alstromeria* and the *Tea Rose*; but, on the other hand, the zeal of the florists in improving other flowers has been carried to excess, and we have crude mixtures of colour that are not pleasing to the eye nor productive of the best results. Those who during the last few years have urged the claims of

CARNATIONS, and advised their extensive cultivation in gardens, have pointed out the necessity of mainly growing the kinds that possessed a clear self colour. There are a general similarity and monotony of tone and tint about the flaked and bizarre forms of the florist, and some of them present combinations of colour that are harsh and offensive. Even in self colours there is variety of tint sufficient for any purpose, and when we deal with flowers of this kind we may arrange them to produce results much more pleasing and simple than are ever obtained from the violent contrasts that abound in a great deal of present-day flower gardening. *Antirrhinums* are capable of producing a lovely effect if grouped in self colours. This is quite true, and not of *Antirrhinums* alone, but of many pretty garden flowers. We have got so accustomed to the very much mixed strains now in commerce that we think of nothing further and content ourselves with them. Now, *Antirrhinums* are very useful garden flowers, so persistently do they bloom if relieved of the burden of ripening seed. Several years ago I saw a group flowering in a garden, and of all the plants one only impressed me with its beauty; it was a rich crimson self. Later on the plant was sent to me, and I struck all I could from it. The following year a group was made in the garden, and the effect was so lasting and brilliant that I was at once convinced the right thing to do was to have a few good selfs. I raised a batch from seed, and was fortunate in obtaining a creamy-white and a century-yellow kind, also a very rich dark velvet-crimson, which is very beautiful upon close inspection, but does not produce a brilliant effect equal to that of the first kind. All four, however, have been grown in groups this season, and they have been a mass of bloom since Jane till recently, when all the first spikes were cut away, and from now on into the autumn the plants will keep blooming from smaller lateral spikes. There is no necessity to name them, for, as "A. D." says, six decided self-coloured kinds would be ample for any place. It is a simple and easy matter to strike a batch of each from cuttings in autumn and keep the plants under cover for the winter. They can be put out quite early in the spring and are in

flower by the time that tender, but not more showy nor more profuse blooming plants are safe outside.

PENTSTEMONS of the present day are very disappointing, and if there are any good bright selfs in existence they are very scarce. I have a kind that I use largely with summer bedding plants. I found it on the place, and it blooms from June to November. A batch of cuttings is put in in a cold frame during October, protection is given when frost is very severe, and the plants are planted out in April. Nothing in this way and for this particular purpose could give a better return for so small an outlay. Up to the present my endeavours to obtain kinds as good in different hues have not been rewarded. A large lot of seedlings is now blooming, but from my point of view they are worthless. Many are positively ugly, and dingy in hue, and those that have pretensions towards pretiness are not selfs. There is not enough body of colour. The type that predominates is characterised by a narrow belt or band of colour running round the edges of the petals, but the tube of the flower is of an entirely different hue. It would serve the interests and meet the desires of many if those who make a speciality of this flower would endeavour to produce and supply good selfs. Last season I saw a lot of new kinds at the Drill Hall. The spikes were fine, the flowers large, but the colours all partook of the orthodox type, and not one of the kinds commended itself to me for bold use in the flower garden. But whilst we deplore the want of good self-coloured kinds of particular families of garden flowers it is most in justice to say that recent years have witnessed a great improvement among many things in the direction desired, and we may reasonably assume that the good work will be pursued. Before dismissing this first part of the subject, however,

SWEET WILLIAMS might be mentioned as flowers that would be ten times more popular if the many shades that characterise the flower could be had in pure fine self forms. A rich crimson, pure white, or delicate pink without the inevitable lacing or staring eye would be valuable. Stocks afford the best example of what can be done in a few years. They are all, or nearly all, selfs, and embrace the richest and deepest, or lightest and palest hues. H.

A note on *Tropaeolums*.—One usually finds that the *Tropaeolum* is not grown in many places for the reason that the plants run to leaf. This is scarcely the case, as they do not run to leaf, this feature being characteristic of the variety. I lately noticed, however, two kinds that produce few leaves and bear their flowers above them, so that they are well seen. This is the type of *Tropaeolum* so desirable. *Vesovius* is the name of one. It has dark-coloured foliage, quite of a bluish-green, and brilliant scarlet flowers, which are in rich association. This kind will assuredly get popular. It is better, so far as I can see, than *Empress of India*. Then I must give a good word for another variety of similar habit, named *Clibran's Yellow*. The leaves are of an ordinary green colour, and the flowers

bright yellow—not, however, a staring shade—and literally hide the foliage. Both, I believe, are new and therefore not yet well known.—C. T.

BEDDING "GERANIUMS."

THESE have made but very little growth this season, and the chances of getting anything like a full supply of cuttings are remote—at least, until too late in the year to be of much use, for if dull, wet weather should prevail, the growth made during the latter part of summer will be of the softest nature, and not likely to make good plants without a large percentage of losses. Under present aspects the best course to follow will be to start the work of propagation at once, getting off all the cuttings that can be spared as soon as possible, and inserting them either singly in thumb-pots or five in a 3-inch pot. At this early period they will strike well in any position, but to shelter them from heavy rains I like to have them in cold frames, where the lights can be drawn off in fine weather, and replaced if heavy thunderstorms occur; just enough water to keep the shoots from shrivelling is all they require until they have made roots, when they may have a little more liberal supply. Later batches of cuttings will need more care, or the losses from damping will be great. Any plants that have been kept in small pots through the summer should be headed down, and the tops used as cuttings, and the stumps, if kept rather dry, will break out into growth, and make very nice dwarf bushy plants for next season. Gild plants, if lifted before they get frost-bitten and have most of the old leaves picked off, may then be stored thickly in pots or boxes, and placed in gentle heat for a little while to get rooted, give an excellent supply of cuttings very early in the spring, which, under careful management, will make good plants by May.

J. G., *Hants.*

4274.—**Breaking stones.**—Except in very small quantities you will find this a difficult and expensive job without the aid of machinery. With a "devil" disintegrator and a steam-engine you may grind up stones of any kind by the ton; but short of this it will be far cheaper and better to buy or obtain a load or two of pit, river, or sea-sand, road-grit, or the like. Finely-sifted coal-ashes would answer the same purpose, and afford some amount of actual outfitment as well; or if your soil is heavy, some of it might be burnt in heaps with small coal, and the products mixed with the soil will greatly aid in rendering it lighter and richer as well.—B. C. R.

4291.—**Calcined bones and leather.**—All animal matter is useful as a fertilizer, and I have found the above a very good manure upon etiff ground, and also for pot roses. Some years ago a friend of mine was so unfortunate as to have a valuable stock of leather and bones burnt. I used some of the ashes, and found them one of the best and most lasting fertilizers, but it would, of course, not pay to burn them for this purpose. "Coastal Residue" may be used in any connection with plant life.—P. U.

Top-dressings of rich compost are still valuable, though the roots are less active on the surface than they were a couple of months ago. Woodlice have always been all this year a source of trouble, but by care in the selection of soil and manure, and thoroughly cleaning the house when the crop is changed, I have no trouble with woodlice this season, and hope the same care will in future keep us entirely free from this troublesome pest. One of our greatest troubles as regards insects have been the earwigs on the *Chrysanthemums*. Black and green-fly we can deal with effectively, but the earwigs in some seasons are a terrible worry. I have placed traps everywhere, and this has resulted in some benefit, but the greatest benefit has been obtained from looking over the plants at night when the insects are feeding and picking them off the plants, giving them a pinch, and casting them down.

FERNS.

ARRANGEMENT OF FERNS.

FERNS not only must be grown well, but also arranged artistically, as shown in the accompanying illustration. Owing to the variety that exists amongst them, they afford a vast field for effective grouping. Although most Ferns are individually graceful in growth, yet the aspect of a fernery is greatly beautified when the plants are arranged with taste. Amongst the many different ways of arranging Ferns so as to produce a satisfactory result, and at the same time show each plant off to the best advantage, there are two which may be especially mentioned. The first relates to ferneries in

growth, such as *Blechnums*, *Lomarias*, &c., but all should be so arranged as to make a pleasing group. It may also be stated in favour of this last mode of growing Ferns that it is the more useful, as it allows the same plants to be used in different ways for decoration in rooms, and for mixing with flowering plants in the conservatory, &c. In all cases avoid symmetry in grouping Ferns. They certainly do not gain anything by being set in a formal manner, and overcrowding is also another evil. If placed too close together individuality is lost, and wherever there is convenience they should stand either on a solid bed of earth or on a layer of ashes, kept constantly moist. Very few insects will make their appearance then, and this way of placing them will be found much superior to that of setting them on wooden staging, where the air between the plants is constantly in motion, and insufficiently moist. A. R.

MAIDEN-HAIR FERNS.

No matter how many substitutes for Maiden-hair Ferns are introduced, the old *Adiantum cuneatum* still retains the lead, and is ever increasing in popularity. But, unfortunately, many amateurs fail to grow it well, and certainly as a room plant it is but short-lived, if compared by the endurance of Ribbon Ferns.



Indoor fernery artistically arranged.

which all specimens, large or small, are planted out without reference to regularity or symmetry—allowing them, in fact, to grow comparatively wild, so as to imitate as much as possible natural growth. Under such conditions, plants with broad and bold foliage intermix with others of a different character, and form masses of vegetation, remarkable for picturesque beauty. A fernery of this kind is not, however, within the reach of everyone. Many cannot afford space for grouping of this kind, and, on the contrary, they have to content themselves with a few specimens in pots, and with arranging them at intervals, so as to form various combinations. In all arrangements of this kind striking contrasts should be always kept in view, which can be readily effected by selecting species of quite different habits, and grouping them not only according to size and form, but also colour. Even a few plants judiciously put together in a comparatively small space may be made to look well, provided the best mode of grouping is adopted, spreading species being so disposed as not to interfere with the growth of such as are more upright. For example, broad-foliated kinds, such as most of the *Polypods*, *Davallias*, &c., should not be brought into too close contact with kinds having more finely divided fronds, such as *Lastræas*, *Pteris*, or *Davallias*, of the finely-out section, nor with plants of upright

I lately saw a beautiful lot of specimen and also smaller plants, grown by an amateur, that would have done credit to any exhibition tent, yet the owner did not pretend to have any special knowledge of their culture. The following appeared to be as nearly as I could gather the routine of culture pursued: Repotting was done as soon as the plants were seen to be pushing up young fronds vigorously from the base, and, contrary to what market growers aim at, which is a large plant as they can get in the smallest pot, the owner gives liberal shifts, and grows his plants on from small 3 inch pots right up to the largest pots he can get. The soil employed is turfy loam, broken up fine, a little peat and leaf-mould, and sharp sand. This is rammed into the pots quite firmly, and the plants only receive a moderate supply of water until the roots have taken full possession of the new soil, when during the hottest months of the year they receive copious supplies of rain-water, and the growth is pushed on rapidly by means of weak liquid-manure, of which the main elements are soot and cow-manure. Under this treatment they push up a perfect forest of tall fronds, which spread out in all directions, and soon become of a deep-green colour, and as the days get shorter, less liquid manure is given, and the plants poured to plenty of air. They will last for months in good condition. J. Groom, Gosport.

ORCHIDS.

CATTLEYA AUREA.

C. AUREA is said to come from the State of Antioquia, in Colombia, and as various other plants from the same district appear to enjoy a medium temperature, then this Orchid, I think, should be subjected to the same treatment. After the flowers have faded, therefore, and as soon as the growths are fully made up, the plant should be removed to cooler quarters. I would not put it into such a low temperature as that of the ordinary *Odontoglossum*-house, but rather into a house a few degrees warmer—such a one in which the *O. grande* is reared in would suit it admirably, and in which the atmosphere is dry, the object being to prevent plants starting into fresh growth before the spring. At that season the plants should be removed to the growing-house, and after being re-surfaced with good peat-fibre and a little chopped Sphagnum Moss, they may be watered moderately, and the air kept moist, so that the growths then will soon begin to make a move. Here they should be encouraged to grow vigorously, and this growth should be surrounded by a flower-sheath. Too many people there are who neglect their plants, and do not remove them to a drier atmosphere soon enough, and the consequence is that the young eyes begin to push up in the autumn. Now these growths made in the winter can never "come away" with the requisite strength to produce a flower-sheath, and if this time of starting the growths is once adopted it is a very difficult thing to get them right again, and the consequence is one never gets any flowers. One may, however, err rather in removing them too soon, but do not let the growths start, at any rate, before the turn of the New Year, and if they can be retarded for a month or two later so much the better. In the case of plants that have been neglected and allowed to start into fresh growth in the autumn, they should be kept warm and encouraged to grow vigorously and quickly, so that the bulb may be finished before spring, so that after a short rest the plant may be set to work again to make another in the summer months, which may flower. At any rate, the plant after the next autumn could be reared comfortably through the following winter. I look upon the enforcing, as it were, of a right season of growth as being the great secret in obtaining flowers, and this variety, *C. aurea*, I consider to be freer blooming than the typical *C. Dowiana*. MATT. BRAMBLE.

LÆLIA PUMILA.

This plant is said to be a native of Mont Santa Catherine, where it is said to grow upon the stems and branches of trees on the mountain sides, up to 2,500 feet elevation. In this position the plant gets an abundance of air and a fair amount of warmth. I have always found it to grow well in the Cattleya-house, and I like to use for it best some small earthenware pans or pots—which should be hung up near the roof glass—potting in some little peat-fibre and Sphagnum Moss, not using too much, as it does not like a great amount of soil about its roots. Some thirty years ago it was thought difficult to manage, too much material being used about its roots. At that time, then, a greater amount of heat was maintained in the Cattleya-house than is found to be necessary now, and far less air was given. During the summer season this plant should be kept fairly moist about its roots, and a liberal quantity of moisture should be maintained in the air, and during the winter just sufficient water should be used to keep it moist. I have found this to suit its requirements far better than keeping it dry, and in the winter season it should be kept at the cool end of the Cattleya-house. I say the cool end of the house, because in some houses a great deal of difference exists in the warmth of the part nearest to the boiler and the part farthest removed from it. M. B.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of plants, flowers and good fruits and vegetables for drawings. The drawings so made will be engraved in the best manner, and will appear in due course in GARDENING ILLUSTRATED.

THE KITCHEN GARDEN.

THE TRUE AUVERGNE PEA.

This is a French Pea, and is a good secondary variety. It crops freely, and is especially good in dry weather. Thus it is of value in such a year as the present, when Peas have suffered severely from the dry character of the season. The pods, as shown by the illustration, are of curved form, and well filled with Peas. It is quite distinct from the Auvergne Pea of many English lists.

SOWING CAULIFLOWERS IN AUTUMN.

Most cultivators are aware that Cauliflowers can be sown in spring and got in quite as early as that which has been sown in autumn. Spring sowing may answer very well where pits and frame accommodation are unlimited. But this is not the case in many gardens. I will remember seeing at The Deepden, near Dorking, when Mr. Burnett had charge of these gardens, early in May a fine lot of spring-sown Cauliflower. This was grown in some sunk wooden frames. The plants were put in much the same way as when planted out in the open ground. At that date they were well advanced, and no doubt would be ready to cut as early as my autumn-sown. After trying to obtain Cauliflowers as early as possible in several different gardens and localities, growing them in diverse ways, I have come to the conclusion that no way is so reliable as growing them in hand-lights for the first supply. During the last four years I have made a point of growing these in three different ways, namely, in hand-lights, potting up a batch of plants and growing on a third lot in boxes. These two last lots are grown in cold frames during the winter. Every year I have cut those from the hand-lights from ten days to a fortnight earlier than from those grown in pots, although these latter were well attended to, planted out of 3-inch pots, one plant in each, and well sheltered with Fir branches for a time after. Both batches—namely, those grown in hand-lights and those from pots—were grown side by side on a south border. For the last three years I have cut the first Cauliflowers from the hand-lights the first few days in June. One season I was not without Broccoli or Cauliflowers the whole year round, and this without growing them either in pots or frames, duly protecting the Broccoli in winter by placing them in frames. I have tried sowing early in January on a hot-bed, afterwards pricking out the plants into cold pits or boxes, and then removing to the open border. I now rely on autumn-sown plants to keep up the supply till I can get those in from seed sown in cold pits or under hand-lights in March. I plant a part of those that I winter in boxes in the open garden and a portion on a north border. By so doing a succession is kept up with but little trouble. Some cultivators recommend a certain time for sowing. This should be done according to locality and situation. From the second week in August to the end of the first week in September is a good time. I rely on such kinds as Extra Early Forcing, Weischen, Early London, and Autumn Giant. I.

KITCHEN GARDEN NOTES.

The present is a very busy season in kitchen gardens, for what may be termed the second seed-time is now upon us, and every day is of the utmost value—in fact, a day now, in the matter of growth, is equal to three later on in the season, and owing to the peculiar nature of the summer, the first sown crops of many kinds of vegetables are of little value, and secondary, or late sowing or planting, is all the more important to fill the gap. The following crops need early attention, viz—

CAULIFLOWERS, for the latest crop, should be put out at once; they succeed best on firm soil; the Early London and Autumn Giant, if planted at the same time, make a good succession to each other.

CABBAGE—The main crop for spring should now be sown, so as to get good plants for putting out at the end of September.

CELERY requires frequent attention in the early stages of its growth, clearing away all suckers and useless growths from the base, and pushing on the growth of the main stem with frequent applications of liquid manure.

HERBS should be cut and dried, so as to give the plants time to make a good lot of fresh growth before winter.

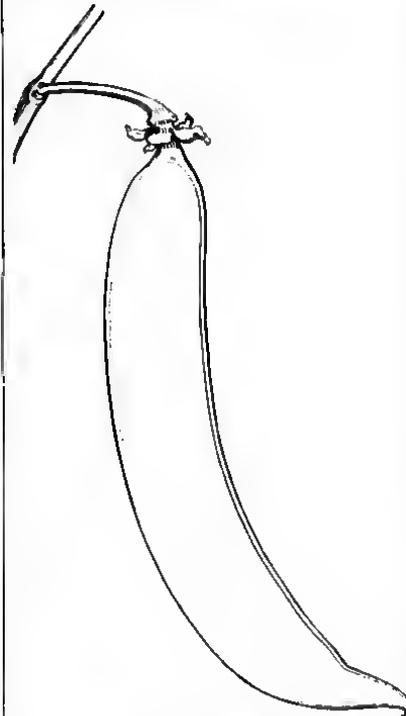
LETTUCE AND ENDIVE.—Planting out for winter use and sowing for spring crops now needs frequent attention, as the supply for several months hinges on the use made of the next few weeks.

LEEKs should be got out without delay, as the crop of spring-sown Onions is sure to be light, and good Leeks will be in demand in spring. Trenches prepared as for Celery answer well for Leeks.

ONIONS.—This crop sown in autumn is in many places much less liable to the attacks of the Onion-fly than are those sown in spring. The Giant Rocca and the Tripoli varieties are especially suited for present sowing.

PARSLEY.—If not already sown no time should be lost if plants strong enough to supply any quantity for winter are to be grown. A position where it can be sheltered in very severe weather should be selected.

POTATOES.—The lifting and storing of all those that are ripe enough, as many kinds show a



The true Auvergne Pea.

decided inclination to grow out, in which case the first crop is spoiled and the second does not have time to mature. The best course to take directly sowing commences is to lift the crop at once and then crop the land with something else.

SPINACH.—This is one of the quickest of all green crops to attain a useful size, and the round summer sort sown now rather thickly will yield a good supply until severe weather sets in, and for the supply in winter and spring the prickly-seeded variety should be sown thinly and allowed to attain a good size before any foliage is plucked off.

TURNIPS will be especially useful in the coming winter; but if they are to attain a good, useful size the seed should be got in at once. The hardy White Stone is the best.

TOMATOES require frequent pruning. Cut away all lateral growth, and concentrate the energy of the plant on perfecting the early-set fruit; late blooms only rob the fruits that have any chance of ripening.

J. GROOM, *Correspondent*.

BEANS—Sorra and French Beans for winter. —French Beans may be preserved in an earthenware pan, mixed with salt, kept in a cool cellar. I should think good might be kept on the silo principle—i.e., cut when dry, and in a large pan, with a heavy weight upon it to keep out all the air, to prevent fermentation.

Geum miniatum.—One of the best of hardy perennials is this Geum, which produces a wealth of flowers from quite early in the summer until cut off by frosts. It reminds one of *G. oococcinum*, and is a plant of great vigour, with bold foliage, and bears large flowers of an orange-scarlet colour. A clump of it is very effective, and one great charm is its long continuance in bloom. It is easily propagated, and is in all respects a good garden plant.—V. C.

Tropæolum Vesuvium.—This variety of Tropæolum or Nasturtium is worth a good note. It is conspicuous for neatness of habit, the growth very compact, dense, and the flowers produced just above the wealth of dark-green leaves, which produce a fine contrast to the intense scarlet flowers. A mass of it is most brilliant, a perfect surface of rich colour. Such a variety is of value for effect in beds, and is a distinct improvement upon the usual type of Tropæolum, which produces plenty of leaves but not sufficient flowers, and these are hidden beneath the foliage.—C. T.

Perennial Sunflowers.—Amongst the finest of late summer and autumn flowers are the Helianthaceæ of perennial kinds. One of the most important is *H. luteiflora*, which has flowers of a rich yellow colour, large, produced freely, the disc also purple. It is late in bloom, and valuable on that account. The varieties of the common *H. multiflorus* are well known, and a fine variety is *multiflorus*, which has large, boldly-shaped blooms, the growth of the plant very robust. A good mass of it is effective at this season of the year, but in growing the perennial Sunflowers it is necessary not to plant them too freely, as a surfeit of yellow is produced. This is objectionable. Free, graceful, and obnoxious varieties are those of the type of *H. orgyalis*, which are useful to plant amongst shrubs, over which they throw their stems, bearing a free display of yellow flowers. This kind will grow almost anywhere, in the poorest soils and positions, even in the shade. The stems rise over 5 feet in height, and the plants grow in ordinary soils, becoming almost weeds in time. *H. rigidus*, better known perhaps as *Herpalium rigidum*, is a splendid perennial, free, showy, and growing about 3 feet in height. Like all of this class, it makes a very quick growth, and requires ample space to spread.—V. C.

4282. — **Destroying wireworms**.—Newly broken up pasture is usually full of wireworm, but for, say the first two years, a dressing of salt at the rate of 8 cwt. or 8 owt. to the acre will be beneficial. The dressings should be applied in cloudy and showery weather, and on fine days well stir the surface of the soil. There is nothing like high cultivation for wireworms, and constant hoeing also is a good remedy. When plants are affected and it is impossible to give dressings of gas-lime or soot, Potato slicings or Carrots inserted in the ground will prove good traps. A very common plan is to put down—first, a crop of Potatoes, the thorough stirring up of the soil necessary for them and the crop itself proving good traps.—C. T.

Chrysanthemum-buds.—In the first place, I should say "W. Simpson" cannot have his plants correctly named. I never heard of a bloom of Chrysalis reaching the dimensions of an ordinary saucer. However, the month of July is too early to "take" buds of any varieties of Chrysanthemums belonging to the incurved section, and but few exceptions among the Japanese. If buds formed in July like those received they should be nipped out and wait for the next, which would form about the middle of August. Any buds that form after these lines are in print should be retained. Blooms from buds formed earlier are rough.—E. M.

4294. — **A tenant's fixture greenhouse**.—Your idea of putting down a row of bricks to prevent damp is good, and I believe quite legal for tenant's fixture; but if the house is to stand in an exposed position, I do not think your plan is substantial enough. A similar structure has just been erected under my superintendance, and in the place of bricks I have used old railway baulks for the wood-work to rest upon, and to which the latter is fixed by screws.—J. C. C.

New Zealand Flax.—This handsome plant flowered and ripened its seed three years ago outside here. It was the sown variety in the grounds at Belmont, Torquay, Devonshire.

FRUIT.

AUGUST PEARS.

AMONGST the most useful of the August varieties of Pear is

CITRON DES CARMES, of which an illustration is given. It is a well-known variety, ripe at the end of July and August, and a most delicious Pear. The fruit is very small, obovate in form, and with a smooth green skin, that assumes towards the ripening stage a yellowish tinge, while they are borne together in small clusters. The flavour is very sweet and agreeable, the flesh yellowish-white and juicy. This makes a handsome standard, and may also be grown as a pyramid.

DOYENNE D'ETE is another fine early variety sometimes called Summer Doyenne. The fruit, when eaten in the proper stage, is of delicious quality, but unless picked before fully ripe is very second rate. Like those of Citron des Carmes, the fruits are unfortunately of small size, the form roundish and neat, and the colour a fine yellow-green, which becomes of a clear yellow as the fruit attains maturity. It makes a good pyramid or standard, and bears well.

JARONELLE.—This is a popular early variety, the fruits of large size, with the skin of a yellowish hue, enlivened with a flush of reddish-brown on the sunny side. The flesh is sweet, melting, and juicy, and the flavour pleasant, with a faint trace of Musk. This tree does well as a standard, and it is a free grower, the branches being long and straggling. It will not succeed as a pyramid, but does well against a wall, and in a warm, sheltered position the fruits attain a large size. It requires root-pruning occasionally to check its vigorous growth. Where there is not space for Citron des Carmes and Doyenne d'Été this tree should certainly be cultivated, as it possesses splendid qualities, and a ripe, juicy Pear in August is a delicacy.

SOUVENIR DU CONGRES.—This handsome Pear ripens at the end of August, and though not so popular as Williams' Bon Chretien, which it resembles, is a desirable variety.

WILLIAMS' BON CHRETIEN.—This is, perhaps, the best known of all varieties, and is largely grown in the orchards about London. It comes in late in August, and has a short season, though we find so-called "Williams" on the harrows long after the fruits of the real variety are over. A good many varieties go under the name of this famous Pear. The tree makes a good standard, pyramid, or espalier. The flavour is rich, melting, sweet, but rather objectionably musty. E.

4262.—Black Currant bushes.—If the trees had been well-syringed with Tobacco-water and soft-soap, prepared in the following manner, the green-fly would not have prevented the fruit swelling: Take 2 lb. Tobacco-paper, soak it thoroughly in hot water, and dissolve 3 lb. soft-soap, add sufficient warm water to make 40 gallons, and well wash the trees with it in the evening at a temperature of 80 degs. Early next morning thoroughly drench the trees with clean water. After this but little trouble will be experienced with aphides of any kind. Directly the leaves are off is the time to prune the trees. As Black Currants bear the best on young wood, this should be encouraged. Cut away any old branches that are crowding younger ones. Do not cut off the points of young shoots, but leave them their full length. If the trees do not make growth freely, fork some well-rotted manure in about the roots after pruning.—S. P.

—Prune Black Currants when the leaves fall. Leave as much young wood in as possible, and take a few of the old branches out occasionally to encourage young shoots to break out. Black Currants bear chiefly on the young wood, and very little shortening should be done. They require manure, and should be mulched in a season like the present.—E. H.

4271.—Manure for Vines.—I have no personal experience of graves as a manure for Vines, but I have known them recommended for Chrysanthemums, and if they are good for these plants they could be no other than beneficial to Vines. I should advise that a thin dressing be sprinkled on the surface, and afterwards lightly forking them, but not in such a manner as to injure the roots. I should not advise anyone though to buy graves as manure for

Vines. I much prefer Thomson's or Innes' properly-prepared manure for Vines, and from personal experience I know both to be good. Two dressings of either in a year is quite sufficient, one in the autumn or spring, when the borders are renovated on the surface, and again after the bunches are thinned. Animal manures are most efficacious stimulants for Vines, especially when growing in an isoid border. If the natural soil of the border is inclined to be sandy I prefer to use manure from the cow-sheds, if the reverse—heavy—I like horse-manure. Either kind should be in a half-rotted state, but not more decomposed than that, or the goodness will have left the manure. A mulch of 3 inches thick laid on the border directly the Vines are thinned acts in a beneficial manner. The goodness from the manure is washed down to the roots, and the surface of the border is kept cool and moist, thereby encouraging surface-roots to increase.—S. P.

4269.—An old Apple-tree.—Probably your plant is worn out, or else it has established its roots in a very poor or cold subsoil. You might remove some of the soil around it, and replace with a good compost, or give it a few thorough soakings of liquid-manure during the winter. The best plan of all would be to cut it down, and plant a healthy young tree in its place. This would fruit the second year, giving

cleansing the branches: Dissolve 5 lb. caustic soda (Greenbanks, 98 per cent.) and 5 lb. pearl-ash in hot water, add cold water enough to make 50 gallons. In dissolving the soda great care should be exercised, as it is dangerous if any of it touches the skin, and it boils up after the manner of quicklime when the water is poured on. Apply the mixture to the trees with a fine-roed syringe, thoroughly wetting every part any time after the leaves have fallen. Should any Moss not be killed by the first application give another towards the end of February; but if the work is thoroughly carried out a second washing will not be needed.—S. P.

4301.—Treatment of an Apple and Pear tree.—Not only are the trees making too much growth to give a full crop of fruit, consequent upon the too free use of liquid-manure, but I suspect the roots are too deep in the soil. They are too far away from the warming influence of the sun shining upon them, and especially if the Grass is growing close up to the stem of the trees. I should at once thin out the shoots to admit of light, air, and wind to the innermost parts of the trees. Cut away all surplus shoots—those not required for extending the area of the tree or filling up gaps in the branches of the tree, as it takes years to finally shape a tree in such a manner that the adding of a branch or shoot the shape is not improved.



Early Pear "Citron des Carmes."

large handsome Apples, and improving year by year.—P. U.

—If the variety is a choice one it may be well to set about renovating the tree; if not, chop it down and plant a young one in its place of an approved kind. If an early cooking variety is preferred, plant Lord Grosvenor; if a late sort, none is better than Lane's Prince Albert. Purchase a good tree. Do not begrudge a shilling or two extra; far better to buy a good article at first, and with good management a crop of fruit can be taken off in the second season after planting. The best way to set about renovating the old tree is to remove the top spit of soil 4 inches deep, and if roots are found there replace it with some half-rotten manure, wood ashes, decayed vegetable refuse, and road-grit. The first week in October is a good time to do this. If the weather during the following January or February is dry without being frosty, thoroughly soak the soil with liquid-manure. One hundred gallons would not be too much for a large tree. It is useless pouring it on the soil close around the stem of the tree only; the soil at least 15 feet away from the stem should receive its share, as that is where many of the small roots would be found, and these really are the feeders, not the long, fibreless roots. It is useless, however, to spend time in renovating the roots if the branches do not also receive attention. Most likely they are covered with Moss and Lichen in such a manner that the trees cannot be healthy with such a coating of this parasite. The following is a splendid recipe for

The current year's shoots might be cut to within 2 inches of their base, as the season is too far advanced for a second growth to be made. If it is not practicable to replant the trees entirely, I should advise that the turf be taken off for at least 4 feet away from the stem all around, afterwards root-pruning the trees; this is best done the last week in September. Cut a trench at the distance named from the stem of the tree, and as deep as roots are found. The severing of these will check the luxuriant growth the following year and induce fertility. Until a full crop of fruit is borne do not give stimulative food in any form; the trees have had too much of this.—S. P.

—If the trees are much crowded in their growth the wood will not ripen, and there will not be much fruit. Thin out a few small shoots to let in the air and sun shine. Possibly the roots may require checking; if so, open a trench 3 feet from stem on one side, and prune the roots, setting under the ball as much as possible to cut tap-roots. Do this work early in October.—E. H.

4304.—Treatment of Vines.—It is unwise both to allow the rods to travel too quickly up the roof and to allow them to bear too heavy a crop of fruit during their early stage of existence. What I mean by travelling too quickly up the roof is by allowing too great a length of cane to remain yearly at pruning-time. If too great a length is left the back eyes belonging to the growth of the year previous do not push into growth so freely as the eyes nearer to the point, consequent on the flow of sap reaching to the extreme end of the Vine. Vines properly managed should give full crops of Grapes yearly

for at least thirty years, and without much apparent lack of vigour, beyond, of course, the smallness of the bunches as compared with those produced during the first twelve years. In pruning Vines the first season after planting, as, for instance, Vines planted in the autumn of 1892 and pruned during the coming week-end of the year, the usual plan to follow is to cut to within three eyes of the bottom wire connecting the rods with the roof of the house. A leader for the next year's growth is thus provided, as well as one pair of side growths. This method of pruning lays the foundation for the future rod. In some vinerias the bottom wire is 2 feet from the border, and sometimes more or less, as the case may be. Vines managed on this principle are allowed to carry one bunch each the first year. The second year, if the roof is a long one, five eyes may be left, which would be two pairs of side shoots and the leader. Vines of this strength would safely carry four bunches, if they were not too large; say 8 lb. in the aggregate would not be too great a strain for vigorous Vines to bear. This is the correct method to follow if the Vines are intended to bear freely for a number of years, but if the first ten years are only to be considered, a greater length of rod may be left at each pruning, and a greater weight of fruit could be taken from the Vines also. "J. C." will be able to discriminate between the courses to follow from the above explanation of the methods adopted.—S. P.

—So far you have treated your Vines admirably. If you avoid overcropping them the next and succeeding years you will have a vigorous lot of Vines that will do credit to your forethought and careful management. Four large bunches or six smaller ones is as many as they ought to carry next year. The rods may increase 3 feet in length every year until they reach the top of the house. This, however, is the maximum growth that should be allowed.—J. C. C.

4393.—**Pot Vines**—As a rule, pot Vines are not much used after they have fruited one year in the same pots; but, of course, that depends on the quantity and size of bunches. If you can replace the present stock with young ones by all means do so; if not, shift those you have into other pots 3 inches larger, or, failing this, make the hole in the bottom of the pot larger, and let the pots rest on a bed of loamy soil 6 inches thick. Whichever you do, let it be done at once.—J. C. C.

4280.—**Fig trees under glass**—I suspect your trees grow too freely owing to their having too free a root run. To grow Figs well the roots must be cramped somewhat by enclosing them in a pit, or running a wall across a part of the border, thus limiting their run to a certain portion of the border. Abundance of water is necessary, both at the roots and overhead, to keep the foliage fresh and free from insect pests. Until the roots are in a matted state within the prescribed limit of the border manure is not required, and only then when the fruit is swelling. If the trees are carrying a full crop copious supplies of liquid manure will be an advantage to them as well as a mulching of horse manure spread over the surface 2 inches thick. Some care is necessary in pruning Fig trees; the branches should be kept thin, removing those that have borne fruit and replacing them with younger, but by no means overcrowd them.—S. P.

—There is no fruit grown under glass that requires so much skill as Figs to get them to fruit well and regularly. If they have too much root-space nothing will prevent them making a large amount of wood, which does not ripen properly, and consequently forms no fruit. If the roots do not get all the water they want, a good portion, or all the fruit, will drop off when young. The branches of Figs also want skilful and timely management, or the result is overcrowding, and then a failure in the crop is sure to occur. Not knowing how you have treated your plants or any of the conditions under which they are growing, I can only suggest that you thin out the growth considerably, and if there is a good second crop of fruit showing, pinch off the points of the bearing shoots, as in such a season as the present there should be no difficulty in ripening the second crop. When Figs are growing in pots, or narrow shallow borders, they do want a considerable quantity

of stimulants in some form. For pots liquid manure is the best, and for borders a top-dressing of loam and crushed bones. Excessive vigour in Fig trees can only be checked by severe root-pruning. This should be done as soon as the leaves have fallen. Early in the spring trees so dealt with should have a thick mulch of manure spread on the border. With regard to the quantity of water they want, the very character of the leaves indicates that it must be considerable if they are to be properly sustained, and not only the roots but the branches also require constant syringing.—J. C. C.

4251.—**Gathering and storing Pears**.—To gather and store Pears successfully, it is well to take a flat basket every morning during the autumn, and go round the tree trying the fruit. To do this, one of the ripest-looking fruits should be selected, and lifted sharply in the hand to a horizontal position; if this movement, without pulling the fruit, results in the Pear being left in the hand, then it is in a proper state to store, although in some cases it may take months to ripen. All Pears are the better for storing, though it may be in the case of the early varieties for a few days only, for if left on the tree the flavour is not so fine, moreover, the wasps usually take more than their share of the spoil if they can. An enormous proportion of the fruit grown in England is lost or injured by thriftless ways of gathering and storing, and it is sometimes difficult to persuade a gardener, if ignorant, that Pears must not be piled one on another. The slightest bruise will result in rotteness later on, and the fruit will never appear at dessert, unless gathered at the right time and in the right way. The rough and ready plan of picking in all the fruit on a tree on the same day, and throwing it into deep baskets, should not be allowed, especially in the case of valuable wall fruit. Each fruit has but two or three days in which it should be gathered, if plucked before this it will shrivel, and never come to perfection; if left on later it will fall to the ground and become bruised. It is, therefore, specially necessary to give daily attention to the trees during the time of their ingathering. The best place to store is a dry old cellar, where it can be laid on newspapers, each fruit separate from its neighbour, in the dark, and with an even temperature, never going below freezing-point. It is also necessary to visit the Pears constantly, removing any fruit which may begin to shrivel or rot at once, while selecting for dessert those fruits that are ripe.—I. L. R.

TREES & SHRUBS.

CATALPA BIGNONIODES.

This Catalpa, better known by the specific name of *C. syringifolia*, stands out conspicuous as one of the very few trees that can be found in bloom in the month of August, while it is certainly the showiest of them all. It possesses many desirable features, and is unsurpassed as a medium-growing lawn tree for standing singly. It develops a broad, yet rounded head, clothed with ample foliage, while the terminal panicles of blossoms are disposed a good deal as in the Horse Chestnut. As in the case of the last mentioned, the individual blooms are wonderfully pretty on close inspection, those of the Catalpa being white, spotted and marked with purple and yellow. It is also known as the Indian Bean-tree, from the long Bean-like seed-pods, which are, however, produced but sparingly in this country, though in warmer districts they are very numerous and form a distinctive feature. Another point greatly in favour of this Catalpa is that it is a capital smoke-resisting tree, and is consequently one of the limited number of trees that are available for planting in the neighbourhood of large towns. It may be met with in a thriving state in various soils and under different conditions, so that it is by no means particular in this respect; still, more luxuriant growth and richer tinted foliage result when it is planted in a deep free soil and not subject to drought during the summer. A second species, or probably a form of this last, is *C. speciosa*, which has been highly spoken of in America as a quicker growing tree of hardier constitution than *C. bignonioides*. But whether it will form such a handsome specimen when old remains yet to be seen. To

the lover of golden-leaved trees, the yellow-foliated variety of the common Catalpa has much to recommend it, for it is of a pleasing colour and does not burn by exposure to the full rays of the summer's sun. The Eastern species—*C. Bungei* from China, and *C. Kumpferi* from Japan—are smaller growing than the preceding, and as far as can be judged at present, are neither of them likely to attain any great degree of popularity. T.

4303.—**Treatment of an Araucaria**.—You may as well destroy your Chilian Pine as soon as it gets unsightly. When the *Araucaria imbricata* once begins to lose its bottom branches there is no help for it. This Pine delights in a deep and cool soil, and if the subsoil be clayey or constantly wet, as soon as the main roots reach this the results will be shown in what you describe. They are rather deep-rooted plants, although a few strong roots may often be seen running near the surface—a feature in all of the Pinne family. It is very disappointing when a fine tree, about a three-parts specimen, goes in this way; but the majority of them do. They will grow in any soil up to a certain stage, but if the subsoil is not suitable they invariably fail just when they have become really handsome plants.—P. U.

—The dry season has probably had something to do with its present condition if the change has been sudden. Checks either from frost or drought are bad for this tree. The *Araucaria* is in many positions an unsatisfactory tree anyway. It rarely lives to be old.—E. H.

4299.—**Azalea mollis on a bank**.—The position is rather cold for this Azalea, which is not very tender in itself, but the flowers get much cut up by early frosts. But you may possibly devise some means of shelter, which we cannot do unless on the spot. I am pleased to know that you are interested in the hardy Azaleas, and *A. mollis* has been kept in the background partly because of its reputedly tender character, but this is not the case. It has lived through unharmed recent winters, and if you can get a group of them in full bloom untouched by frosts the effect will be very fine. The range of colours is extensive, passing from yellow to intense crimson, and in time we shall get many other tints. *A. mollis* should be placed in cool, quiet shady corners, where they are free from winds and early frosts. As regards soil, peat is, of course, the best, but good fibry loam will do well. The *A. mollis* hybrids are usually now grown in pots, especially on the Continent, and for this purpose they are well adapted by reason of their great freedom of flowering.—C. T.

Clethra alnifolia.—A short time since a correspondent in GARDENING asked a question as to the hardihood of this shrub. This note may, therefore, be of more than usual interest, as I saw it in a Surrey garden, not more than twenty miles from London, in full bloom a few days ago. Of course, this must not be taken as proof of its complete hardiness, as the garden in question is peculiarly situated, being much sheltered by Rhododendrons, and surrounding woodland. Still, in recent hard winters Veronicas have suffered greatly, but the *Clethra* stood out unharmed. It makes a very beautiful shrub, the leaves of a bright-green shade, and the flowers, produced thickly in spikes, white, or creamy-white. When in a light soil, and not too exposed, it will succeed well. This *Clethra* has been introduced many years from North America, as it was brought over in 1731. If any readers are interested in it, and can give the necessary requirements, it is an interesting feature in the garden.—C. T.

The Siberian Crab.—This is a lovely tree, and lately I saw on the outskirts of a small lawn a specimen almost breaking down beneath the burden of fruit. It is named *Pyrus baccata*, and there are varieties of it. A specimen on the lawn is beautiful at all seasons, as the flowers are attractive, followed by a large display of fruits, which are now beginning to change to a bright crimson colour. Of course, the crop differs from year to year, but this particular tree was a perfect picture. I need scarcely say that this *Pyrus* is as hardy as anything that grows in the garden, as it was introduced from Siberia in the year 1784. The growth is remarkably graceful, and the tree does not make unbridled growth. It is found peculiarly in the surroundings of the lawn.—V. C.

OUTDOOR PLANTS.

THE WHITE GOAT'S RUE.

This is a very pleasing plant, perfectly hardy, and producing a wealth of white, Pea-like flowers. It is perhaps rather too tall for small gardens, but its habit is very neat and compact, whilst the spikes of pure-white flowers are produced over a comparatively long season. It is valuable also for cutting, and a pretty combination is a cluster of Ever-raising Peas, the latter



OUR READERS' ILLUSTRATIONS: The White Goat's Rue (*Galega officinalis alba*). Engraved for GARDENING ILLUSTRATED from a photograph sent by Mrs. Bradley, Akeley Edge.

in the centre of the vase, with the *Galega* on either side, and with its own foliage. It should not be formally staked, as the plants lose their graceful character. Few things look more wretched when thus bunched up. It comes perfectly true from seed, and transplants well any time after the stems have died down.

CARNATIONS.

GENERALLY we place the Carnation second to the Rose; but in this year of extreme heat and drought it has proved with us the first flower of the garden, and never was it more brilliant and beautiful. It has been a sorry season for Roses. The first blooming of many kinds was most inferior, although it should be said of the Teas, the true perpetual bloomers, that they are now beginning to make amends, and promise a fine display very soon. The great summer Roses, however, have come far short of the mark: but Carnations have given such a display and effect of colour as could not be surpassed by any flower. The year has suited them, unless it be in light sandy soils; but these are unsuited to the flower, although fair results are obtained in moist seasons. This season proves that the powers of endurance which characterise the wild Carnation living on old walls are not entirely lost in its much improved offspring of to-day. Since I made my plantation last autumn, beyond keeping free from weeds, nothing has been done to them, and the deep, holding soil in which they were rooted carried them safely through the drought until near its close, when signs of distress were apparent. One good watering and a slight mulching to conserve the moisture have sufficed since. But easy as is the culture and great the results from a minimum of care, especially as compared with the ever-recurring expense and trouble attached to adorning the garden for a short period with tender things, the fact remains that there is abundant room for the extension of Carnation culture in English flower gardens. The popularity that the flower

has long enjoyed has been as a florist's flower, and till recently nothing was thought of its value for the garden. The florist was, and is, concerned chiefly in the flower as a unit, varied in colour, and conforming, as far as possible, with certain ideals. For example, the wild Carnation has fringed petals, but the florist's ideal is a flower perfectly smooth and regular in form and outline. This is, to some degree, essential when each petal partakes of two or three tints, and the flower is studied individually as a thing of colour. For the flower garden, however, we must regard the Carnation from a very different standpoint, as the florist's varieties come very near each other, and through their variegations there is an indistinctness and want of decided effect. The varieties that formerly were regarded as of least importance are now all essential. These are the *Sels*. There is nothing to equal them for bold and decided effect of colour when massed in the garden, and if they are not wholly used they should at least predominate. Some thought that hardy flower gardening would be colourless, but

SELF CARNATIONS give colours as brilliant as ever were produced by gaudy *Pelargoniums* with all the additional charms of fragrance and fine form. The hard and fast lines that guide and govern the florist in the selection of his finer kinds must be almost ignored. A few cardinal points should be observed beyond that of colour, such as robust habit and the form of the flower. A defect of many modern varieties was pod bursting, and it was tolerated among the show varieties, the flower when shown being held together by an elastic band or tie. The garden Carnation, next to being of decided tint, should not be a burner, because out-of-doors wind and wet—in fact, wind alone—soon reduces it to a ragged, shapeless thing. It is a defect of formation unknown in the bold type, and of possible elimination even among modern kinds. I notice with satisfaction that of many new and recent kinds on trial this year only a very few will be rejected on account of this bursting propensity. In the midst of our enjoyment of Carnation flowers there arises the necessity for immediate preparation for another season's display. The details of successful culture are few and simple, but must be diligently observed, and of these the most important now is layering. A great many growers have completed this operation only, however, by reason of the abnormal season. The present is the time that the work is usually performed. The importance of annual layering is that old plants frequently perish and are rarely as good the second year, whereas a young, well-rooted layer is absolutely hardy, and no cold will kill it if the kind is naturally robust. Layers put down at the present time root abundantly in six weeks, and this enables planting to be taken in hand after the middle of September. If it can be completed in that month all the better. With such an early start success is as far secured as our own efforts can assure it. The sight of splendid groups of plants through autumn and winter gives much gratification and relief from anxiety when one looks upon flower-beds and borders furnished for another year with occupants that are happy and flourishing through all the changes of an English winter and spring. A. H.

4284.—Carnations and Picotees.—The question is often asked in GARDENING as to the difference between Carnations and Picotees. It is a mere difference of degree, after all, and I may say that the difference between Carnations, Picotees, and Cloves is one only of colouring. The parent in each case is *Dianthus caryophyllus*, and these latter-day acquisitions have been secured by a careful system of hybridising. Of the three the more important is the Carnation, although much attention seems now to be given to the Picotee, and the chief classes are *Bicolors* and *flakes*. Of the bizzarres there are scarlet, crimson, pink, and purple; there are scarlet, rose, and purple flake. In

the bizzarres two colours are represented, either in flakes or stripes on a white ground; but in the flakes the distinctive colours are laid on a white ground, and of the three the rose are the more beautiful in my opinion. A rose flake is a charming flower, rose colour against pure-white. The *Clove* is a self-coloured flower, of which the type is the old crimson *Clove*, as beautiful for its fine crimson colour as for its rich *Clove* scent. Its fragrance is delightful. The *Picotee* is also practically a Carnation. This may appear a paradox, but it is a form of the Carnation, the flower usually white, but it may be varied, coloured at the margin. On the density, or rather the breadth, of the marginal colour depends the class to which it is allotted. There are light, medium-edged, and heavy-edged. Exhibitors class them under various colours—purple, red, and rose, or scarlet—of each colour there being light and heavy edges. The perfection of a Picotee is where the ground is perfectly pure, without colouring, except at the margin, where it must be well defined. The yellow ground Picotees are distinguished by the yellow groundwork to the flowers. As regards the Pink, no mistake can be made between this and the Carnation. The parent of this is usually supposed to be *Dianthus plumarius*, and there are the border and laced kinds. The border Pinks are represented by such varieties as *Mrs. Sinkins*, and therefore, *sels*, but the show kinds are laced or margined with various colours—red, purple, maroon, and other shades on a pure-white ground.—C. T.

CAMPANULA PUMILA.

This is one of the most charming of the Bell-flowers, and appears to be a very variable species, variously known in gardens as *pusilla*, *capitata*, *linifolia*, *waldensis*, &c. It does equally well in the flower as the rock garden, and never fails with an abundance of its white bells. In its most common form it is a dwarf creeping plant, forming tufts of small leaves very pale-green, from which spring the hundreds of flowers which adorn it during the summer months. The clump here represented was brought to its present home from Switzerland, and in the various districts of Switzerland where it is



OUR READERS' ILLUSTRATIONS: A clump of *Campanula pumila*. Engraved for GARDENING ILLUSTRATED from a photograph sent by Mrs. Newman, Hazelhurst, Haslemere.

found in plenty, it is most variable in height, size of leaves and flowers, and not unfrequently we found the pure white form wild. The white variety is very charming, especially if one gets a mass of it, and it is very easy to grow.

4279.—Single Begonias as cut flowers.—One thing is to cut the flowers a short time only before the show and keep them in a cool place. Now do not remember, that flowers of all kinds have faded very quickly this

URBANA-CHAMPAIGN

year owing to the heat, and so we are not surprised to know that the flowers of the Begonia are behaving in the same way. I have never exhibited Begonias, but it is the practice with some growers to wax the ends of the stalks, and the old-fashioned plan of cutting off a small portion from the bottom is good.—C. T.

— Begonias will not last long in a cut state. There is no better way than to keep them in water, with as little of the stem out of the water as possible.—E. H.

— It is the nature of these flowers to fade within a very few hours of being cut, unless kept in water, when they will last some days. Could you not send them to the show in water, and set them up with the stalks in small tubes or phials of water? Otherwise place them, when cut, in a box with a lid, laying them on damp (not wet) wadding or Moss. If allowable, they will keep fresh for some time if stuck in a bed of damp Moss, and present a much better appearance as well than on the usual boards or stands.—B. C. R.

4295.—Plants going to leaf.—You do not say whether the position in which they are placed is shady or otherwise. If shady, or the soil is too rich, perhaps you have manured it too much; this will cause a greater profusion of foliage than flowers. Bedders do not need a rank soil, and certainly shade is hurtful.—C. T.

— The difficulty this season in most gardens has been to get plants to grow freely. If plants, such as "Geraniums," have gone too much to leaf, it must be in consequence of the manure, and this will disappear next year. The roots of trees would have an opposite effect, though if the trees threw much shade, the plants would be drawn up, and they would not flower so well. Possibly this might have had some effect.—E. H.

4296.—Everlasting Pans.—These can be raised from seed; but the quickest mode of propagation is by division of the long trailing roots which shoot up readily when planted in light, rich soil. The white variety is much less common than the well-known rose-coloured form.—A. G. BUTLER.

— These are propagated by seeds and by division of the roots just as growth is moving in spring. A large old plant will cut up into a good many, and seeds usually come pretty true to colour. The seeds from plants growing in a sunny position grow the best, being better ripened.—E. H.

4296.—Plants for a rockery.—Your question necessitates a rather lengthy answer. You cannot do great things now, but in the coming autumn and winter you should work hard to make it bright and attractive for next spring. I will give as much information as possible to you in a small space. If you are going to plant Ferns, select some of the choicer kinds, such as *Osmunda regalis*, *O. cinnamomea*, &c., which are very beautiful in a moist position, where they can get a fair amount of shade. I know of one rockery near London which is made externally beautiful with them, but have the Ferns only in the more shady spots. Here are the names of a few things to plant: Of Campanulas or Bell-flowers, very charming are *C. pumila* (white), *C. persicifolia*, *C. pyramidalis*, *C. carpatica*, *C. muralis*, and many others. But these may be planted first, and they will thrive in ordinary soil. Try and establish the Balearic Sandwort (*Arenaria balearica*) upon the facings of the stones. It is like a little Moss, running over them and hiding their harshness, whilst in the summer the flowers are produced in profusion, white, starry, and very pretty. *Achillea ptarmica*, The Paarl (double white), *A. mongolica* (white), large flowers comparatively; *Adonis vernalis* for spring, its flowers yellow, set amongst finely divided leafage; the Rock Madwort (*Alyssum saxatile compactum*), a perfect shower of golden flowers in spring; *Anemones* in variety, especially the pure white *A. japonica* alba. But the type which has rose flowers and this variety make a good contrast. *Aquilegia chrysantha* (yellow), *Arabis alba* (white), very charming; the Prophet flower (*Arnebia ochroleuca*), on dryish soil and sunny position; *Aster alpinus*, *Aubrietia Campbellii* (purple), and *A. Leichtlinii* (rose), the King Caps or Calthas, for a marshy spot—they are very rich in spring with their deep-yellow flowers; *Oenothera montana* alba is suitable; also *Chelone barbata*, red flower; *Corsopius lanceolata* (rich yellow); alpine Pinks, which require special situations—they like sun and a pretty light soil—established against cool grey stone they are very charming; *Dictamnus fraxinellus*, both type and white kinds also, and other known, perhaps, as the *Fraxinellas* are very

good plants; whilst you may plant also the Sea Hollies, particularly *Eryngium planum*, which has smaller flower-heads than the others, but they are produced very freely; Dog-tooth Violets, charming in the lower parts of the rockery, where their flowers can be well seen; *Gentianella acaulis*, or the *Gentianella*; *Geum coccineum planum*, a very hardy and bright scarlet-flowered plant; *Gypsophila paniculata*, producing a multitude of small white flowers, a light graceful mass; *Heuchera sanguinea*; *Iris* in variety; spring-flowering bulbs; the August-flowering *Galtonia candicans*; *Lupinus polyphyllus albus*, which has fine spikes of white flowers; *Lythrum roseum superbum*, rich rose flowers; (*Eootheras*, (*E. Youngi* especially); *Polemonium corololum*; *Primroses*; *Auriculas*, alpine species and the handsome border kinds; *Prinnia japonica*; *Saxifraga* in variety; *Statice latifolia*; *Trollius europaeus*, or the Globe-flower; and *Veronicas* may be named. These will be a guide as to your selection, but as years go on you may add many other things. You cannot make a good rockery at once. I shall be very pleased to assist you in the future. Remember that half the battle is to make the foundation of the rock garden well. There must be plenty of soil, though the usual thing is not to have sufficient. In this body of soil the plants can find plenty of room to root and develop.—C. T.

— With a judicious mixture of *Saxifraga*, *Arabis*, *Anemones*, *Solomon's Seal*, *Spiraea*, *Crepogon*, *Jenny*, *Housleeks*, *Rock Pinks*, *Panicles*, *Violets*, and, of course, *Ferns* you can make your rockery presentable throughout the year. My rockery is about 90 feet in length, and has the sun upon it all day; but, with attention to watering in the hottest weather, it always looks beautiful and is no trouble.—A. G. BUTLER.

4298.—Plants in a Rhododendron bed.—You can grow Lilies to perfection. It is exactly the spot for them, the position being sheltered, and the Rhododendrons are protection to the rising Lily shoots in spring. You must have the taller Lilies in the beds, and it will not be necessary to provide special soil, as it will be already of a peaty character, or at least should be, and thus suitable for the flowers. *L. auratum* is one of the finest for the purpose. It blooms in August and September, and makes a splendid display of colour, the noble spikes rising out of the wealth of leafage. *L. superbum*, a very variable and beautiful Lily, the forms of *L. tigrinum* or the Tiger Lily, *L. speciosum*, and *L. pardalinum* are all eatable—in fact, all the taller kinds, as the earlier types are apt to get smothered up. During recent years the Lily has been much used for planting amongst shrubs, especially Rhododendrons, and the aspect of gardens towards the close of summer and autumn has been in a measure changed by their free use. Amongst the dwarfier shrubs, *Ericas*, *Kalmias*, etc., may be planted such Lilies as *L. longiflorum*, usually grown in pots, but beautiful in the open, and varieties of *L. Thunbergianum*. You might have a lovely Lily garden with little trouble. The question of expense, of course, depends upon how much you are prepared to pay for the choicer kinds. But *L. auratum* bulbs can be purchased moderate in price.—C. T.

— Lilies and Irises would do well, and you can carpet the surface of the bed with *Panicles* and *Violets*.—A. G. BUTLER.

— Plant bulbs, such as Snowdrops, Daffodils, Lilies, *Hyaacinthus candicans* would look well now. Lilies candidum, auratum, and others would brighten up the dark foliage in summer, and the Snowdrops, Daffodils, and Tulips in spring.—E. H.

— The best plant for this purpose is *Lilium auratum*, which invariably thrives in such a position, either planted permanently or planted in pots. If an edging is wanted, use *Gladioli* and *Begonia*.—B. C. R.

4297.—Improving a tennis lawn.—By far the most powerful and quick stimulant for Grass of any kind is nitrate of soda. It should be crushed finely and sprinkled over the surface at the rate of 2 owt. or 3 owt. to the acre, or say 2 lb. per rod, and if rain follows, or it is well watered in by hand, in a week or ten days the Grass will be seen to take on a deep green colour, and begin a very luxuriant growth. The effect is not fugitive, nor does any reaction follow, unless an excessive amount has been applied; but, on the contrary the Grass will grow stronger the next year as well. A burnt-up or worn-out lawn will quickly revive under the same treatment; another method being to give it a good watering once or two good waterings with a good solution of the nitrate, one ounce to each

gallon. If at the same time, or soon afterwards, a sprinkling of soot and bone-meal mixed, or soot and superphosphate of lime, the effect will be more permanent, and half an inch of leaf-mould or road scrapings sifted and spread over the lawn or meadow in March or April will still further strengthen and improve the turf. The spring is the best time, as a rule, to apply "stimulants or top-dressing," but a little soda and soot also may be applied now, or whenever necessary or most likely to be beneficial, except during the late autumn and winter.—B. C. R.

4295.—Making a lawn.—Mow the rough Grass off, and have the surface pared off with a breast-plough, or in some other way. When the pared-up material is dry burn it; keep the ashes to spread over the surface when the Grass-seeds are sown. During the autumn and winter cart a good dressing of manure and dig it up a good space's depth, burying the manure. At the same time work the surface of the ground into the required form, and let it lie rough till March. Then break it down fine. Scatter over the ashes, and sow thickly with not less than 4 bushels of fine Grass-seeds, and when the surface is dry roll it with a moderately heavy roller. If any part of it is turfed, the turf may be laid in August, but the seeding will be the cheapest, though turfing will make the lawn fit for use sooner. If a lawn for tennis is required on any part of it the ground should be made quite level, and it will be better to have that piece turfed and seed the remainder. If any alteration is made in the level have the good soil reserved to go on the top again, so that the turf may be all of the same colour and strength.—E. H.

INDOOR PLANTS.

LAPAGERIAS.

THIS is a genus of greenhouse climbing plants whose beauty is unsurpassed. It contains only one species, but of this there are many varieties, and to pick out the most showy ones should be the care of the grower, so that the most desirable forms are grown together. The pure white variety presents a much better appearance, and the flowers are more telling when hanging from the roof side by side in clusters than in any other way. The types sent by "T." are very nice, but too light in colour, and the flowers too short in the tube to look well beside the ordinary white variety, for this plant looks best when seen beside the "Nash Court" variety of roses, which Mr. Laing has at his nursery at Forest Hill. The *Lapageria* succeeds best when planted out, and the border should be made up thoroughly with broken bricks and other drainage material. The soil, which should be good turfy loam and peat, must be chopped up roughly, and all must be pressed down firmly. Provide a good outlet below for the water to get away quickly, for the plant will remain quiet and dormant for a very long time if stagnant water is suffered to lie about its roots. When placed in good genial soil, and with good drainage material it sends out long and strong shoots from the base which will grow up quickly and soon cover the roof of the house. *L. rosea* and white variety should be planted alternately, and the varieties of *L. rosea* that are good and showy can also be planted with it. Different kinds can be interwoven as the shoots grow up. "T." should select for these plants a house with a cool, shady aspect, and give them plenty of water at the roots, also overhead from the syringe. The *Lapageria* is very liable to attacks from thrips which are most hurtful.

J. JARVIN.

4305.—Plants for a hot greenhouse.—Under present circumstances, little except Cacti and a few other succulents will do much good, with perhaps a few *Aspidistras*, *Draenas*, and the like. If you really want to grow Ferns, the floor must be covered with a layer of ashes, or something that can be kept almost constantly moist, and some tanks or shallow pans of water fixed under the stages would be a further improvement. With the glass rather heavily shaded, and plenty of water, Ferns, foliage plants, and climbers ought to do well. Failing all else, I should fix a finely perforated pipe along the roof, to which water could be turned on as will, and throw a constant fine dew all over the place when necessary.—B. C. R.

PRIMULA OBCONICA.

This is a well-known plant now, and a very pretty thing for the greenhouse. It is easily raised from seed, and seedlings vary in colour and size of bloom; but the prevailing shade is soft-lilac. It is not a great success in the open, and the flowers are really too pale for the garden. Something more effective is necessary in the open. It will bloom throughout the winter—in truth, may be called perpetual flowering—and has been intercrossed with other kinds, so that in time we shall get a very interesting race. It was found by Mr. Maries, a well-known collector, in China, and is very distinct. It is a good amateur's plant, and useful for quite a small greenhouse.

4275.—Culture of Cactuses.—I have given as full particulars as space will allow about these interesting plants. They are strange things, and a new love is springing up for them. They can be grown in rooms, and one sees fine examples in a cottage window where they get plenty of light, and are free from the influence of frosts, whilst the atmosphere is not too moist. The majority of the Cactuses need a dry air, as it is under these conditions they thrive in their native home. They attain luxuriance in hot, burning sand on the plains of Mexico, and those conditions must be imitated as far as possible when they are under cultivation. The plants may be grown well in a greenhouse, where a temperature, say, from 45 degs. to 55 degs. is maintained. Give them free exposure to the

dry. They grow slowly, as is characteristic of Cactuses in general. Spring is the best time for sowing the seed.—C. T.

4277.—Winter flowers.—The selection is necessarily somewhat limited, but in late November and throughout December you can have some *Chrysanthemums* from late struck cuttings and also *Zonal Pelargoniums*, Dutch bulbs, *Cinerarias*, *Cyclamens*, and Chinese *Primulas*; but bear in mind the importance of not crowding the plants too much, as this means a poor growth. In the winter they must get as much air as possible; also keep such things as I have mentioned as near to the glass as possible to encourage a stocky, well-developed growth. If this is not done they get drawn, and the flowering as a result suffers greatly. Air and light are two precious attributes of plant growth in the winter season. Avoid, however, cold currents of air. If your house is fairly large you can add to the above *Camellias*, say a specimen of the old double white, still one of the most useful flowers in cultivation, although *Camellias* are not so popular as in years gone by. The fragrant yellow-flowered *Cytisus racemosus*, which is very easily grown, and makes a bright showy plant, should also be included, besides the white-flowered *Deutzia gracilis* and *Acacia armata*. You should make good use of bulbs, such as *Deffodils*, the Trumpet kinds in particular, and make up a few pans of the little *Glory of the Snow* (*Chionodoxa Lucille*), *Iris reticulata*, and *Snowdrops*. You may get a charming feature thus. You may also

will, however, find it difficult to fix a tank to the existing pipes without pulling them apart. Why not pack some rubble round and over the pipes instead of a tank, and on the rubble a bed of tar or Cocoa-nut-fibre refuse, to use as a plunging material. A bottom-heat of 90 degs. will suit the majority of stove plants.—J. C. C.

4289.—Treatment of Diosmas.—It is refreshing to get an enquiry about this sweet-smelling, old-fashioned plant, for one rarely sees it now, yet for beauty of leafage and for associating with cut flowers in small glasses there is nothing to surpass it. It may be useful to say that it is a hard-wooded greenhouse plant of the easiest culture. All it wants is a shift into a larger pot every year. The half-ripe shoots made into cuttings at this time of year, and dibbled into sandy soil and kept close and shaded, strike root in four or five weeks. If your plant is pot-bound it is quite easy to cut it hard back now, and give it a larger pot in the spring; but if it has been recently potted it will be better to defer the cutting back until next February. Now the summer is so far advanced you had better keep the plant in the greenhouse.—J. C. C.

— It is too late for *Diosmas* to break now. Prune in spring, and help in a warm, close house.—E. H.

4302.—Pelargonium cuttings.—These are very simple to strike. All you need is wood about half ripened, such as side shoots breaking from a plant in bloom. Any soil of a sandy nature should do. I do not keep them close, nor do I place them on a shelf. The ordinary treatment used for the variegated form of *Zonal Pelargoniums* will answer admirably. You have probably kept them too wet. No *Pelargonium* need much water while striking; nor should they be frequently sprinkled. The form of their leaf, also the numerous downy hairs upon the same, hold moisture much too long. Have the soil fairly moist when inserting the cutting, then give one thorough watering and wait until they are quite dry before repeating.—F. U.

— These will strike freely enough now. Place the pots in an open situation in the open air on a bed of coal-ashes, and keep the soil moist. Cuttings cannot root without moisture. Sprinkling the foliage is not sufficient.—E. H.

4307.—Smilax asparagoides.—This is very easily cultivated, and readily raised from seed. I also find that it ripens seed freely, which if sown in the month of March in an ordinary greenhouse soon grow into useful-sized plants. You had better keep over your seed, or a part of it, until next spring, or you may lose the young plants through damp in the winter. I obtained my first lot from purchased seed.—J. C. C.

4300.—Treatment of Abutilons.—These are strong-rooting and somewhat hungry subjects, requiring to be grown in rich, loamy soil, with plenty of liquid-manure after the pots get full of roots. Shift them at once into pots 4 inches larger, watering them carefully for a time, and they will flower beautifully from September to Christmas, or later, especially with a genial warmth when the weather grows cold. If the growth is straggling, cut them back first, and repeat when the young shoots are an inch or so long.—B. C. R.

— From the presence of the roots it appears as if the plants required repotting. Give a good shift now in good soil.—E. H.

— Plenty of pot-room and liquid-manure twice a week in the growing season will produce the result you require.—A. G. BURTON.

4309.—Pelargonium "Master Christine."—The true variety of this name has no perceptible zone on the leaf, which is of a pale or yellowish-green. The flowers, which are produced in large and numerous heads or trusses, are of a soft, rosy-pink colour, with a small white spot on the two upper petals. Another peculiarity is the unusually thickened base of the flower-stalks, and the curiously-rounded stems with large nodes.—B. C. R.

4281.—Fressias in a cold-house.—Yes; it is quite possible to grow these sweet-scented bulbs in a cold-house. They are almost hardy, and the slight protection is quite efficient. When growing them in this form, however, it will be well to keep them more backward, and I would not pot up the bulbs until November. Sort your bulbs into two sizes, placing six or eight of the largest into a 4-inch or 5-inch pot. Use a sandy compost of leaf-soil and loam, and



Primula obconica.

sub, and as regards soil use a mixture of loam, not heavy, and sharp silver-sand, adding a small quantity of broken pieces of brick to keep the compost thoroughly porous. There is no need to go in for elaborate composts—lime and so forth—as often these special preparations are the reverse of beneficial. The plants are best repotted in early spring, say March, and in potting remove as much as possible of the old soil from the roots, cutting off dead or dried up pieces, as these are of no value to the plant. The rock upon which the majority of amateurs split in the culture of Cactuses is the watering. During the winter months about once in three weeks will be sufficient, but during the summer more frequent supplies are necessary—in the very hottest weather about every day. It is a mistake to let the plants suffer from a continual dryness of the soil, otherwise they shrivel, and this is most injurious. You ask about propagating. Well, there are three ways, namely, by grafting, cuttings, and seed. The best and most usual plan is by cuttings, a good way in the case particularly of the *Cereuses*, and, as is well-known, the *Rhiphyllum* is commonly grafted. In taking cuttings, take off young growths in the spring or summer months, and let them remain in a sunny spot until the cut place has healed over. Then put in pots filled with light soil; do not water, but syringe lightly overhead. Cactuses may be raised also from seed, which should be sown in a light loamy soil in small pots. Place in the warmest corner of the greenhouse. The seedlings make very slow progress, and will soon come to grief if not kept

grow the pinky-flowered *Primula obconica* and *P. floribunda*, which has yellow flowers, but these are, unfortunately, much affected by frosts.—C. T.

4278.—Begoniae in pots.—These are not troublesome to grow in pots, but you must be careful about the treatment as we get into autumn. Possibly you have kept the bulbs too wet, whereas, as autumn advances, less is required. When the shoots have died down none is necessary. This is a most important point, but amateurs sometimes blunder. The best plan when the plants have died down is to put them on their sides in the pots, and in such a position that it is impossible for water to reach them. They must not be exposed to frost, but a temperature of say 40 degs. will keep them perfectly safe. In the following spring the tubers may be turned out, and the old soil removed.—C. T.

— These are not difficult to keep through the winter if the tubers are well ripened, and the frost kept from them, and not excited by heat. If kept hot and dry sometimes they perish with a kind of dry rot, but when kept cool and dry they are safe.—E. H.

4308.—Forcing bed in a stove.—There is a diversity of opinion as to whether bottom-heat is necessary for stove plants. Personally, I do not think so, except for those who grow plants for exhibition. In that case such things as *Caladiums* and *Eucharis* are benefited by it. There are, however, many others that can be as successfully grown without bottom-heat as with it. If you think it necessary, a slat tank is what you require, and if you enclose the top pipe you will get all the heat you want. You

stand the pots beneath the staging until young growth has advanced a few inches. In case of hard weather through January and February, keep them as far from the glass as possible at night.—P. U.

4270.—**Basket plants for a cold house.**—*Vincos elegantissima* is a very useful basket for cold house. Some of the variegated *Iris* are pretty. Whatever is used must be perfectly hardy. *Sedum carneum variegatum* and *S. Sieboldi* are suitable. I have seen *Jasminum nudiflorum* do well and flower most of the winter in a good-sized basket. Tender things, such as *Tropaeolums*, *Fuchsias*, *Petunias*, *Ivy-leaved Pelargoniums*, *Heliotropes*, *Musk*, &c., may be employed in summer, and the hardy things for winter.—E. H.

4285.—**Fuchsias in a cold-house.**—In severe winters cover the bottom of the plant, with dry Ferns, or long dry litter will do. Never mind about the tops being injured. The new growth from the bottom will soon fill up again—all the brighter and stronger from being shortened back.—E. H.

4299.—**Double and Single Begonias.**—I should think that you have been very successful with the plants. They will continue to bloom until quite late autumn with proper attention, but when they commence to die down give less water. Do not, however, withhold it suddenly, and in time the tops will quite die down. When this is the case, put the plants under a greenhouse stage, where they will remain until the spring, say February. Then new growth commences again, and the tubers must be shaken out of the pots and repotted.—C. T.

4245.—**Arum Lilies for Christmas and Easter.**—These plants will not flower satisfactorily in a temperature so low as 40 degs. at Christmas, but "A Beginner" may easily have them early by utilising the sunny window of a sitting-room with a fire, or a kitchen window. The plants, which are now gathering strength in the garden, should be given liquid-manure twice a week, unless the soil be very rich, between this and the beginning of September, when they should be potted up. Give good drainage and a rich compost, with pots which will only just comfortably hold the roots, packed in with the compost, leaving plenty of room for watering at the top. Single roots, in 7-inch or 8-inch pots, are the best for early work, as each will throw up its fine flowers about November, some needing to be retarded by placing them in a slightly lower temperature (that of the room should be from 50 degs. to 65 degs.), or they will flower before Christmas arrives. Directly the first flower is over the plants can receive a shift into a 10-inch pot, which will induce them to throw up plenty of blossoms for Easter, if they are well watered. Being semi-aquatic plants, they should stand in saucers of water, soot-water (in a thin, clear state) being given them once or twice a week, for they are hungry plants, and need a great deal of feeding to produce plenty of their lovely flowers. Green-fly is their special insect enemy. This should be kept off them entirely by the constant use of a small bit of soft sponge and lukewarm water, sponging the foliage, too, even when clear of green-fly, if it should become dusty. The plants should stand close to the glass of a south-east or south window; but during frost they should be taken further into the room, for they are very sensitive to a chill, being of so succulent a nature, and they will not open their blossoms in a temperature below 50 degs.—L. L. R.

Flowers in smoky London—How often do I see in gardening papers what will grow in suburbs, but how rarely what will grow in a real London garden, surrounded often by bricks and mortar, at times a perfect hailstorm of soot falling, eluga, wireworms, &c., actively at work. Roses, forsooth!—no such luck. Make annuals of them, and you may get a few blossoms. Still, flowers can be had, but, then alas! not many. First, I will name *Single Petunias*, and if a dry season, I guarantee a fine bud, if a good strain is procured. *Ten-week Stocks*, *Phlox Drummondii* (but not pegged down). The soil gets too foul, *Lobelias* (white and blue), *Calceolarias*, *Antirrhinums* do fairly; most of the *Campanulas*, and how grand some of them are! *Double Pyrethrums*, and early-flowering *Chrysanthemums*, *Evening Primroses*, a few *Lilies*, *Sulphur and Red Gladioli* in the spring, but perennials generally are a

failure. They seem to rot always. I have grown all of the above in a garden 15 yards by 12 yards.—METROPOLIS.

ROSES.

4233.—**Rosee not thriving.**—Rose William Allen Richardson has the peculiar characteristic of refusing to grow well without any apparent reason. *Marsébal Niel* and *Bouquet d'Or* are the same. One plant, grown exactly the same as another, and planted out under similar conditions, will thrive and produce remarkably vigorous growth where the other will remain at a standstill. You have chosen an excellent position for your plant, and are evidently treating it as well as you can. Cut it down close, and see if it will push up a strong shoot from the base. If not, transplant it elsewhere, and replace with another. It is more than probable that the second one will prosper.—P. U.

4249.—**Treatment of pot-Rosee.**—I should out the plants back now, applying a little mastic to the cut, and completing the pruning in two operations—i.e., remove half of the growths down to two or three lowest eyes, and then serve the remainder in the same way about three weeks later. You will thus avoid checking the sap entirely, and consequently killing the points of many young roots. If the outlet of a full supply of sap is suddenly removed, the roots naturally suffer and stop their functions, in many cases dying entirely.—P. U.

4237.—**Rose "La France."**—You have chosen a very good position for this variety, and I cannot advise its removal. *La France* has been more than usually subjected to blight this summer as far as my observation goes. Crend as this old favourite is in some districts, it usually behaves with me as you describe, at its best being of indifferent quality. It is quite surpassed now by newer varieties, and although it is exquisitely scented, we can also equal it in this respect.—P. U.

4283.—**Rosee on a low wall.**—Yes; Tea-scented and Noisette Rosee will do well upon your wall, and you will often get bloom there when it is ever with for the time upon more favourably-situated plants. Here are a dozen excellent varieties: *Anna Olivier* (buff and orange), *Mme. Faloot* (orange and apricot), *Marie Van Houtte* (yellow), *Perle des Jardins* (deep-yellow), *Dr. Grill* (salmon and orange), *Catherine Mermet* (pink), *Socrates* (fawn and peach), *Mme. Lambert* (red), *Souvenir de S. A. Prince* (white), *Innocente Pirola* (creamy-white), *Mme. Hoate* (pale-lemon), and *Sunset* (apricot and yellow).—P. U.

4272.—**Rosee for an outdoor border.**—There are many Roses which bear most bending foliage, but you do not say if you wish those with a deep-green or with a reddish end bronzy shade. I suppose the latter. Almost all Teas possess beautiful foliage; perhaps the following are the best in order given: *Perle de Lyon*, *Souvenir d'Elise Vardon*, *Madame Bérard*, *Perle des Jardins*, *Sunset*, *Madame Faloot*, *Safran*, *Anna Olivier*, and *Marie Van Houtte*. Among the Hybrid Perpetuals the following are good: *Duke of Connaught*, *Captain Christy*, *Sir Roland Hill*, *Pride of Waltham*, *Earl of Dufferin*, *Countess of Oxford*, and *Charles Lefebvre*. In addition to highly-coloured foliage all of those named are also grand bloomers and growers.—P. U.

The quality of leafage on Rosee depends greatly on the soil in which they are growing, and whether you keep it free from injury by blight or insects. The following Hybrid Perpetuals are remarkable for their handsome leafage: *Charles Lamb*, *Captain Christy*, *Mrs. C. Laing*, *Magna Charta*, *Duke of Albany*, *Elle Gordon*, *Lady Suffolk*, *Lord Macaulay*, *Baroness Rothschild*, *La France*, *Red Dragon*, and *Ulich Bruner*. Many of the Tea Rosee have bronzy leafage, which is quite distinct. The single Japanese Rosee are worth growing for their foliage alone, while the leaves of the old Maiden's Blush and Celeste are of a glaucous colour.—J. C. C.

4298.—**Rosee not flowering.**—As your Rosee in pots have grown so vigorously, I would advise you do not prune them so hard next year. There is no such thing as a hard pruning Rosee. It is a matter of cultivation,

as sooner or later all healthy growth must flower. But if you prune away strong vigorous wood, you are only inducing the plant to produce more of the same. Tie the shoots out in a horizontal position as you can manage, removing a very little of the wood, and you will in all probability get a good crop next year.—P. U.

—Immatured wood is the cause of your Rosee not flowering. Turn the plants out-of-doors at once and place them in a sheltered corner, plunging the pots to their rims in a bed of soil or ashes. Prune them at the end of November, and then add another covering of eases so as to bury the pots 2 inches deep. About the middle of February place them in the greenhouse again. It will be desirable to give the roots a change of soil, which you may do early in October by removing some of the old material and replacing it with fresh.—J. C. C.

4222.—**Manure for Rosee.**—I have never used Bone-dust as a manure, but bone-dust is excellent upon stiff soil. It is very lasting in its effects, and makes a good change from other stimulants. A variety in manures is always better than applying the same year after year.—P. U.

Rose Augustine Guinolesseau.—I saw lately at an exhibition a splendid lot of flowers of this Rose, which is not often seen at shows, as it can scarcely be called an exhibition variety. These blooms, however, were very fine, although as to whether a certain variety is a good show Rose or no is of little consequence, if it is beautiful in the garden. The variety *Augustine Guinolesseau*, sometimes called the *White La France*, is certainly a lovely flower. I remember about three years ago seeing a large break of it in Mr. Benjamin Cant's fine nursery of Rosee at Colchester. Every plant was smothered in flowers, each of good shape, full, white, tinted with a rosy colour in the centre, and deliciously sweet. This is a point of the utmost importance, and the *White La France* may rank amongst the most deliciously-scented of Rosee. It is vigorous, free, and delightful for cutting.—V. C.

Fruit of the Japanese Rose.—It is not generally known that the fruit of this Rose makes very good jam, and when fully ripe it is not unpleasant to the taste, even when raw. It should be treated similarly to the *Guevas*. The Japanese Rose (*Rosa rugosa*) has got comparatively common, and in many gardens, not over large, one sees it. Certainly it is very beautiful, and seedlings vary greatly in colour from pure white (alba) to deepest crimson. I do not care for the purplish blooms, they are too "blue," and look dingy. A hedge of this Rose is a good barrier to cattle, although I heard lately that they will eat it. If this is the case the meal can scarcely be pleasant, each shoot being studded with sharp thorns.—V. C.

4220.—**Rosee in borders.**—The old-fashioned Monthly Rosee (*China*) I should say flower the longest, and next to these are the Teas, and the first to begin and the last to remain in *Gloire de Dijon*; but all the strong free-growing Teas will flower till quite late in the season in a deep, warm soil.—E. H.

—The Tea-scented and Noisette section, with the *China*, are probably the latest bloomers we have, while they are certainly the earliest and most perpetual through the summer months.—P. U.

A valuable Dwarf Fuchsia.—A Fuchsia that will be grown freely in the future is named *Dunrobin Bedder*. It is very dwarf, and this is one of its chief charms, as the plant may be used in positions where other kinds are not admissible. It is peculiarly adapted for small gardens, as the plants do not grow more than a foot in height, and are smothered with crimson flowers, which show affinity to those of *F. Riccarteni*, one of the parents of this hybrid form. The leaves are very small, deep-green, and in contrast to the richly-coloured flowers. It commences to bloom in early summer, and does not cease until stopped by frost, whilst we should regard it as of value for pots, being so dwarf, bushy, and free. It is not known much to the public, but in time will get cheaper, and readers of *GARDENING* will welcome such a flower. Moreover, unlike the ordinary garden Fuchsia, this is quite hardy, and has lived out, unharmed, in recent winters. This is a good sign of its hardiness, as many reputedly hardy things have wintered in the open, or been entirely killed.—V. C.

HOUSE & WINDOW GARDENING.

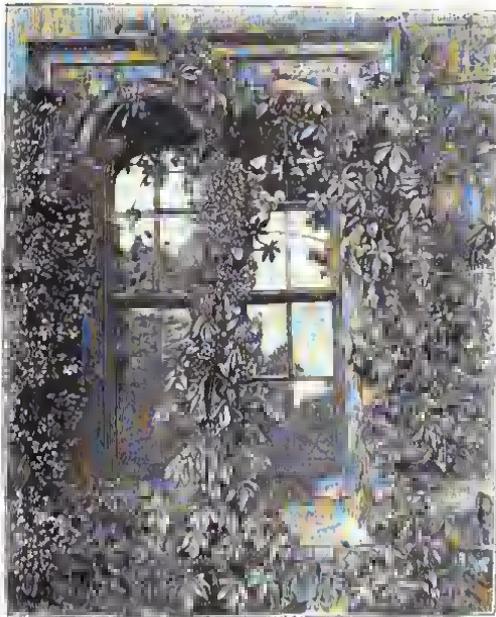
BEAUTIFUL WINDOW GARDENING.

WHENEVER the general conversation turns to window gardening, it is quite a common experience to hear the familiar comment: "Ah! one should see how beautifully it is done in London." "In what part of London?" I have now and then asked. "Oh! in Piccadilly or in Kensington," comes the reply. "Oh! yes," I answer; "but a good deal of what you see in the localities named is not window gardening of the best and permanent type, but is often carried out by the florists by the month or by the year." My notion of good window gardening is that carried out in its entirety by those who live behind the beautified pane. Again, the window-box or flower-pot style of window decoration is not always the most worthy of adoption, a remark that is simply proven by the illustrations here given. Window-boxes or flower-pots, which look at home in the cottage or villa residence, are somewhat apt to jar a little as seen in the windows of a castle or church; but no one could well object to the simple and appropriate window decoration by means of beautiful and naturally grouped climbing plants as here shown. The plant most evident on the central mullion and to the right is the Japanese Hop-plant (*Humulus japonicus*), an easily reared annual of less massive habit than is *H. lupulus*, our native and perennial species. There is no lack of climbing vegetation of the best for window gardening of this kind. Clematises of many kinds, Ivy of the large and small leaved forms, Virginian Creepers, Tropaeolums, and Jasmines of varied sorts and exquisite perfume. One of the nicest things for draping large windows at a considerable height from the ground is Veitch's Japan Creeper (*Ampelopsis tricuspidata*). At Oxford the windows of some of the cottages and churches are partly covered with its elegant leaves.—F. B.

4198.—Plants for a window.—Several good articles have appeared recently upon this subject in GARDENING. You do not say what kind of plants you require, and the season is fast passing a way for filling window-boxes. Still, you must make the best of the short season that remains. First of all, you are wanting really permanent things. You cannot do better than make a selection of small shrubs, such as the finer kinds of *Euonymus*, the variegated varieties in particular, which will make a pleasing show during the winter months, putting in autumn between them a few bulbs, such as Crocuses, Tulips, Snowdrops, and such things. These will look well in the spring in contrast to the leaves of the shrubs. You require possibly, however, an effect with flowers as soon as possible, and I cannot advise you more than I have already done a few weeks ago. Zonal Pelargoniums could be used in all the windows, having for an edging the Ivy-leaved kinds, which will hang over and make a charming finish to the box, these in the autumn being substituted by somewhat things as the Ivy, when the dwarf shrubs take the place of the other plants. Take care to have good drainage in the bottom of the boxes, and unless this is given you will not do much good. Then get a good soil, another important point, and as is used for potting, leaving sufficient space at the top to give a liberal allowance of water. The reason why window plants wear too often an unhealthy aspect is because they are too dry at the roots. Remember that in windows they are exposed to the sun and wind, and there is not much soil for the roots. It is too late to get the Canary Creeper now, unless you can purchase large plants, which is not very likely, but you can make good use of *Lobelia* and *Fuchsias*, having one window filled with Zonal Pelargoniums, another with *Fuchsias*, and at this late season fill the other with the White

Marguerite, which is much used for the purpose. The other could be a mixture. I simply name now common things that can be got at once to make a show before the summer and autumn have left us. When the beauty of the plants are past, resort to the shrubs, not forgetting the bulbs. Not half sufficient use is made of bulbous flowers for this purpose. Every garden could be a picture of colour in the spring with their help, and the initial expense is trifling. One of the most charming window gardens I ever saw was made of the *Chionodoxa Lucilia*, commonly called the Glory of the Snow, mixed with dwarf *Narcissus*. Such effects are a relief from the monotony of the usual things seen in windows. You ask for information also regarding the management of window plants? All the plants named to be used at once require comparatively little attention. The great thing is to keep them properly watered, so the soil in the boxes soon gets dry. Remove carefully all decaying leaves, and if hard-leaved plants, such as *Aepidietras*, *Palms*, or *Aralias* are used be careful to keep the foliage sponged occasionally to prevent accumulation of dust. If the windows are near to the road, it will be most important to see to this matter. I may mention that *Aralia Sieboldi* is useful in a window. It has bold, glossy-green leafage, and

entirely devoted to the plants or inhabited, and the plants used only as a decoration? Also whether there is any means of warming the room in winter? If quite without warmth, hardy plants only and the above bulbs could be grown. British Ferns (which are many of them very beautiful) would do well here, and *Carnations*, *Gladioli*, *Wallflower*, *Canterbury Bell*, &c., might be tried; but all these are best out-of-doors, except during their flowering time and in very severe frost or snow. With a fire, so that frost can be excluded, there are a great many room plants that could be grown here—*Palms*, *Aspidistra lurida*, and *Ficus elastica* (*India-rubber-plant*) being some of the handsomest in the way of foliage. These all need to have their broad leaves regularly sponged from dust, and watering should be done only when needed—i.e., when the surface soil is too dry to soil the finger, and then thoroughly emptying their saucers half an hour after watering. All room plants need more water during their season of growth, and less when at rest. A hard and fast rule, such as watering them twice a week, or every day, is therefore a mistake, careful attention to their actual needs being far better. Few flowering plants do well in a west aspect, few morning sun is so necessary for them; but *Fuchsias*, *Musk*, *Mimulus*, and *Primulas* will do fairly well, and any plant which has already set its buds in a sunny situation will open them here and continue to bloom for some time during summer.—I. L. R.



A window garden of climbing plants.

WINTER-FLOWERING ZONAL PELARGONIUMS FOR A ROOM.

ALMOST everyone who takes any interest in flowers possesses a few "Geraniums" (*Zonal Pelargoniums*), and these are so easily grown, blossoming throughout the summer, that they are universal favourites. But the possibility of having their bright blooms in winter is not always thought of, and yet there is no reason why this should not be the case if the plants are managed with this view in summer, and they can be given a sunny window in a warm sitting-room during the winter months. Young plants obtained in small pots at the present time, having been rooted this spring, should be shifted into 4-inch or 5-inch pots, with a good compost of turfy loam and leaf-mould, and a little sand. The potting must be firm, the soil being rammed down rather tightly, and sufficient room left at the top for plentiful watering. The "Geraniums" must stand out of doors all the summer, exposed to the full sunshine, with plenty of air; but it is well to shelter the pots in some way from the effects of the heat, which is apt to destroy the tender roots which cling to the earthenware. This can be done by sinking the pots to the rim in a bed of fine ashes, or placing them "pot thick"—i.e., so near together that they shelter each other, with a board, or a mulch of Cocoa-nut-fibre in front of the first row of pots; but the plants must never be so crowded as to touch each other, for the great object is to make them sturdy and strong, with well-ripened wood and bushy in shape. The points of the shoots must therefore be pinched out once or twice during the summer, and every bud removed as soon as it appears, thus storing up the strength of the plant and its flowering properties for winter work. In August the little plants may be given a slight shift into the next sized pot, with richer soil, in which there is a little old hot-bed stuff, mixed with turfy loam and leaf-soil; and again the potting must be extremely firm, with good drainage and plenty of space for watering. Having been relieved of their buds and pinched back a little (for the last time) a week before the last potting, all the growth they now make may be left intact, and by the end of September the plants should be covered with buds. Lifted into a warm room then with a sunny window they should bloom for months; but this, of course, depends upon the amount of warmth they receive. In any case they will be beautiful objects during the dull autumn days, only requiring a regular supply of water to open a mass of bloom. As they prefer a somewhat dry atmosphere in winter they do not suffer from the fire-heat of a sitting-room as much as most plants, but they will not stand gas, drooping their blooms at once if subjected to its poisonous breath.—I. L. R.

is comparatively tough. Great care should be taken not to overwater.—C. T.
— If you stand the plants in the open not later than the end of September, the growth made in the window will have time to get hardened before winter. You may then plunge the pots to their rims in a border near to a warm wall, and leave them there all winter. Under this treatment you will find them to flower more freely than if you kept them in the house all that time. You may, of course, keep them altogether in the window. If you do so, keep them as cool as you can, and the soil about the roots regularly moist.—J. C. C.
4227.—Plants in a bedroom.—This room, with a due west aspect, would be a good place for many plants during the summer; but in the winter there will be very little sunshine. Bulbs, however, of many kinds would do well and give little trouble. Most of them should be put in during September—i.e., *Hyalocynthos*, *Crocuses*, *Snowdrops*, *Tulips*, *Narcissus*, and the lovely little sky-blue *Scilla sibirica*. All these are best out-of-doors after being potted, standing on a thick bed of ashes, and covered with an inch or two of the same, until the frost sets in during October; then they can be brought indoors and placed in the window, giving them all the light possible in mild weather. "M. B. C." does not say whether the bedroom window is to be

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of GARDENING, 37, Southampton Street, Covent Garden, London. Letters on business should be sent to the PUBLISHER. The name and address of the sender are required in addition to any designation as may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent to press some time in advance of date, they cannot always be replied to in the time immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, notes, and concise ways to infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the locality in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appeared.

4319.—Box.—Will you please tell me how to grow Box, and to make a good edging?—Novice.

4320.—Manure for fruit-trees.—Is there any special manure suitable for fruit-trees than stable-manure?—ORRISWORTH.

4321.—Liquid manure for Tomatoes.—Would you kindly inform me what kind of liquid manure is best for the Tomato?—HARRIS.

4322.—Diseased Tomato-plants.—Can any reader of GARDENING tell me what to do with my Tomato-plants, as they are diseased, and can they tell me a remedy?—C. W. R.

4323.—Mosses from seed.—Kindly inform me whether I can get seeds or cuttings of *Moss capitatum* M. Cavendish? Please give me particulars about the latter.—J. I.

4324.—Plants for a sloping garden.—Can any one give me a list of plants suitable for a small piece of garden sloping to the north, and lying in a hollow, with knot of trees on west side?—N. W.

4325.—Cabbage for market.—I have a large plot of Cabbages ready for market, but so much infested with other than fly that I cannot sell them. Can anyone tell me how I can destroy the fly?—DINA IX.

4326.—Pansy seedlings.—Would an east border against a house be a suitable position to plant Pansy seedlings for spring or early summer flowering, and should they be planted now or in the spring?—M. E. E.

4327.—Treatment of Jessamine.—What is the best way to treat a climbing Jessamine which has made plenty of growth all up the wall? At present it flowers only at the top. Should it be cut back, and, if so, when and how?—M. L. E.

4328.—Cutting bank Oleander.—Please give me information about the proper time for cutting an Oleander which has done flowering, so that it may flower again next year? It is kept during winter in a cool greenhouse, and has flowered well this summer.—J. S.

4329.—Thuja Lobbi for a hedge.—Can anyone tell me if *Thuja Lobbi* is suitable for making a hedge for sheltering a few beds in the middle of a small garden in a windy situation? If so, what distance should be left between the young plants when planted?—R. X. X.

4330.—Myrtle cuttings.—Will someone kindly tell me when is the proper time to strike Myrtle cuttings, and what kind of soil they require? Also whether they should be kept in a greenhouse or a frame? Any information as to the management of above will be valued.—E. J. D.

4331.—Artificial manure.—Being unable to obtain sufficient manure from the stables for the kitchen garden, would you kindly tell me what artificial manure to use? The soil is fairly light. Peat Manure-manure I could obtain a small quantity of, but I do not know whether it is of use.—J. N. B.

4332.—Passion flower.—I have got a Passion-flower in the conservatory infested with a white woolly sort of insect. I should like to know what it is and the best means of getting rid of it, and what is the best time for striking cuttings of Passion-flowers? Should they be raised from seed?—NOVICE.

4333.—Pears.—Will you kindly give me the names of two or three varieties of Pears (early), and that make good standards, that will grow in a strong clay soil, unfertilized and too well drained. I want dessert kinds. Also will Jascouille succeed in similar soil on a south-west wall?—A. CONSTANT RADEA.

4334.—Tulips and Forget-me-not.—Will "C.T." who writes in *the States* for the *GARDENING* kindly say how he manages to make a "groundwork" of Forget-me-not for his bed of Tulips? My Forget-me-not always grows tall and leggy. What sort of Tulips make the prettiest bed, a mixture of all one kind?—REVIVAS.

4335.—Scabby Potatoes.—Can you give me information as to the reason for early and late Potatoes becoming so spotty and scabby? I find great difficulty in selling them in the market owing to their appearance. My garden is in loose, light soil, and is exposed to the sun all day, but sheltered from north and east winds.—PRINCE.

4336.—Lilies of the Valley.—I shall be greatly obliged by information on the following point: I have a border on the east side of my house. It gets a fair amount of sun in the early part of day. The plants grow in a rich loamy soil, well manured. The crowns grow up, but the foliage in spring, but they do not produce any flowers. What treatment can be recommended to induce them to flower freely?—JOHN FORD.

4337.—Lettuce in a greenhouse.—Can I grow Lettuce in a greenhouse heated sufficiently to keep out the frost during the autumn and winter? I have two greenhouses, 12 feet by 10 feet, and I propose to keep one hotter than the other; but I must heat both by means of oil-stoves and piping. What is the best apparatus? Is the "Little Sampson" good? I have a lot of 4-inch iron pipes which have been used with soil boiler? Can these be joined to the pipes of the oil heating apparatus?—MARTIN, Kensington.

4338.—Ash-tree.—I have a fine well-grown Weeping Ash—wide spread. It is this year full of seed of great weight, but few young shoots, and leaves but scanty compared with former years. It has stood in its present position on a lawn about forty-three years. Ought anything to be done to relieve it of its heavy weight of seeds, or should it be left to take its course? The leaves are not unhealthy looking, but only scanty in quantity. A answer would oblige.—R. L. L.

4339.—Carnations in pots.—I have grown a number of Carnations in pots this season. Owing to want of space I am unable to plant them out, and have taken a few layers of each. The plants are valuable, and I do not wish to discard them. If I can be assisted, can I grow on the parent plants in their present pots with any chance of getting blooms from them next year, and if so, should they be repotted to the spring? They are mostly in 32 sized pots: a single plant in each pot. I could winter them in a cold frame or unheated greenhouse.—GERMANIA.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

4340.—Roses-tree (Herbert).—Any kind of Rose. There is no particular kind. Choose those that are recommended from time to time in GARDENING.

4341.—Cattleya Leopoldi (Judy).—I should say that your plant has been exposed to too atmosphere too cold and too damp. If it can be avoided, can I grow on the parent plants in their present pots with any chance of getting blooms from them next year, and if so, should they be repotted to the spring? They are mostly in 32 sized pots: a single plant in each pot. I could winter them in a cold frame or unheated greenhouse.—GERMANIA.

4342.—Zizyphus sinensis (J. Herrie).—This is the name of the fruit about which you made inquiries some time ago, and which you said was being sold to the streets of London under the name of Japanese. It is a plant belonging to the Euphorbiaceae family, the Euphorbiaceae.—J. J.

4343.—Exhibitions (Thom).—On August 29, 30, and 31 there is a large show by the Royal Horticultural Society at the Agricultural Hall. Special attention will be paid to heating apparatus and allied things. This is one of the highest affairs, but there is a large number of small shows. Try it there first.

4344.—Creepers (W. N.).—You cannot do better than select such things as Clematis montana and C. Jackmanii, but preferably the former, as in such a position it will make a fine feature. As regards evergreen, Ampelopsis is both excellent, or a good variety of it; such as Emerald Gem, or Green, as it is sometimes called.

4345.—Ciste lanuginifera maculata (G. Nunn).—This is the name of the plant you send, which differs from the typical plant in having a crimson blotch at the base of each petal. It is a free-flowering shrub, hardy in this country, thriving best in dry, sandy, or stony soil. Its native country is South-West Europe.—J. J.

4346.—Pears (Dorset).—The fruit is too poor to name. When fit to gather it should part readily from the stalk. Do not pick until this is the case, otherwise it will shrivel. You must do the best you can with a ladder placed against the stem. The great thing to avoid is bruising the fruit; and when gathered, lay them out in one row, not piled up.

4347.—Plant for screen (W. M.).—In such a position it would be best to have the Virginian Creeper, as flowering plants would not succeed so well. You could plant now if from pots, but autumn is the proper season, or spring if the creeper has to be lifted from the open. Plant carefully, and in good soil. The Virginian Creeper practically requires no cultivation.

4348.—The Saltwort (Salicornia Kall) (Maurice O'Connor).—This is the plant my friend sends me from Ireland, and it grows on the seashore. It is an annual which used to be collected and burnt for the soda obtained from it. By the name of Basilla, it was formerly used in the manufacture of glass, and for soap-making. It belongs to the same family as the Spinach.—J. J.

4349.—Nepenthes Masteriana (T. Wells).—I should imagine that your plant has been kept in too atmosphere much too dry for it. I am not surprised to hear you say that it seldom makes any pitchers, but I am quite astonished that it lives at all. The leaf you send is quite smothered with thrips. Syringe the plants well and keep a moist atmosphere.—J. J.

4350.—Palms in a greenhouse (R. Bruel).—Yes, the kinds you name will live in a warm greenhouse; but I should prefer the following rather than many *Thrinax*, *Sabal*, and *Coccothrinax*. Try the following dozen: *Chamaerops excelsa* and *C. humilis*, *Chamaedorea Wendlandi*, *Ceroxylon nigrum*, *Kentia Casterburyana*, *K. Fosteriana*, *Livistona australis*, *L. chinensis*, *Phœnix canariensis*, *P. tenuis*, *Rhapis humilis*, *Scaevola elegans*.—J. J.

4351.—Wire worm (Anxious).—The mischief is wire-worm, and we are afraid that the pest will be full very soon. Evidently you have planted upon newly turned pasture, which is often full of wire-worm. You may place about Potatoes in halves, scoop out a little of the centre, or pieces of Carrot. Look over these often, and kill the marauders. Next season we should put down some Potatoes on the ground. This is the usual practice. Wire-worm is a terrible foe.

4352.—Epidendrum vitellinum (J. M. B.).—I should think yours is quite the old form of the species, and that it is distinct from major, which I have seen remarkably fine this season in many places. You are doing quite right in keeping it quite cool and to the shade and very damp, so that the treatment that makes you so anxious to get a specimen of the major is not the best. It is not so sandy the same conditions, and you should put your present plant to the proof.—M. B.

4353.—Creepers (C. D.).—You cannot choose a better Creeper for your purpose than *Ampelopsis Veitchii*, but nothing will cling to a cement wall well. The *Veitchii* *Virginiana* Creeper is, however, the best to use. *Viola* will not cling, or *Begonia* *radicans*. You could plant the *Chimonanthus*, but *Chionia* *ternata* is not sufficiently hardy. It requires more warmth. But that depends wholly on the position in which it is planted. It is, however, more of a southern plant. The same remarks apply to the *Escallonia*.

4354.—Climatic cocoon.—J. T., Southampton, sends me a good sized cocoon of a moth, which he says he has had planted out of doors for the last five years. He says further that in the winter of 1890 he protected it, and it is well to do so every season in severe weather, when it comes up and grows vigorously, the plant with him having about twenty stems, some 9 feet or 10 feet high, and the pretty bell-shaped flowers are a rich coral-red, the individual flowers being small, but from their colour are very interesting.—J. J.

4355.—The Houseleek.—John sends me two plants, asking if these are *Houseleek* or *Aud Foot* of *Houseleek*? Well, both the varieties in that country for the *Houseleek*, but neither all the plants sent is the *Sempervivum tectorum*. One, however, is a variety of the old species that was found by Dr. Hooker (now Sir Joseph) some twenty years ago on the Atlas Mountains. It is called *S. tectorum atlanticum*, and a very pretty form of the "Old Foot." The other is a plant that has long been known as *S. californicum*. It has sharp-pointed leaves, tipped with reddish-brown, neither of them being the "Old Foot," but near to them, and they would live in the same manner as the type.—J. J.

4356.—Insects affecting Currant-tree (Anoteur).—The only insect which I can find in the list of the *Springtails* (*Lipura ambulosa*). This species, however, does not jump. I should hardly have thought these insects would have caused the death of your Currant-bushes, but they certainly are in great numbers, and are known to injure the roots of Cabbages and other plants. Try watering with a strong solution of common salt or nitrate of soda, or a parts of carbolic acid to 100 parts of water. The best way when ground is infested with them is to remove the soil for some time, dressing it with any manure but that which comes from stable and farm-yards.—G. S. S.

4357.—Oncidium Crocota (J. Hascombe).—This is the name of the beautiful little plant you sent. It doubtless is nearly related to *O. longipes*. It is a very distinct plant, having a rich golden-yellow lip, and the crest has a deep blackish-purple bloom which makes it so conspicuous. The plant thrives best, I think, on a block of wood, although some find with under these conditions. This results from want of attention. To those, I say, try small earthenware shallow pans, drain them well, putting a small quantity of good peat fibre and chopped Sphagnum about them, and do not let the plant suffer from want of water at any time. I have not seen the plant for a long time, so that I think it must be rare.—M. B.

NAMES OF PLANTS AND FRUITS.

Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton Street, Strand, London, W.C.

Names of plants.—H. Greenwood.—Apparently a *Cheilanthes*.—H. G. B.—*Chamaerops excelsa* and *Chamaerops humilis*.—Roches falca.—B. Gilmour.—It was sent in flower, and we shall be pleased to name it.—D. L.—*Cattleya Mossii*.—H. G. B.—*Pinella japonica* variegata.—H. C.—*Ophiopogon japonicus* variegatum.—Mr. P. Moore.—Please send flowers. It is impossible to judge for a narrow name from leaves only.—A. J. Woolfall.—*Raphanistrum parviflorum*, called also the Spurge Laurel, or Welcome to our Home.—H. K. M. Gait.—The yellow flower is *Cephalaria tatarica*, and the shrub, *Spiraea Thunbergii*, which the white flowers produced early in the month of July for forcing.—B. Gilmour.—We cannot name from such a specimen. Please send a good shoot, even then it will not be easy to say without flowers.—H. G. B.—No. 1 is the common *Polypodium*, and the other *Polystichum aculeatum*.—J. B. Ardley.—*Justicia carnea*. The other next week.—P. Lovell Hain.—7. *Thuja dolabrata*; 8. *Thuja Lobbi*; 9. *Viburnum macrocephalum*; 10. *Hibiscus syriacus*.—*Orchid Loner*. The flower was much shrivelled, but it appears a form of *Orchidaceae* *Acrostichum*. We shall be very pleased to know how you grow your *Orchid* so well. Write legibly, and on one side of the paper only.

Names of fruit.—Rosa.—*Margonella* Pear. It always behaves in this manner. When "caught" just ripe it is delicious.—No Name.—1. *Burrer* *Chalgrain* Pear; 2. *Apple* *Wellington*; 3. *Hawthorn*; 4. *Carthead*.—*Southfields*.—*Junestack*.—J. V. L.—1. *Bass* Pool; 2. *Haswell* Bounding.

Name of vegetable.—T. B., Amateur.—Long-necked Squash; but it is rather out of character. You can grow them similarly to Vegetable Marrows.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

E. A. Withnail.—The competition is now closed. Your photographs will receive proper attention.—Goring Thomas.—We shall be pleased to name the fruit if carefully packed. Send typical specimens.—C. H. P. Please give further particulars, soil, situation, etc. It is impossible to determine otherwise. We should think the trere are radically wrong at the roots.—C. B. Vandeur.—Please send insect with leaf picked carefully in a little box. We shall be pleased to name it.—Puzzled.—We should certainly say the cause of the mischief is either that the plants are kept for too wet or there is insufficient soil, either of these things would produce the results complained of.—Amateur, Bilton.—We should stage all single *Daisy*, *Glaucol*, notice the hardy *Leontodon* *hibernicus*, and the *Clematis* *Jackmanii*. Some judges would admit all three, but not all. It is better to be on the safe side, and have two *Helianthus* down. This is all right if the class is not for twelve distinct species.

GARDENING ILLUSTRATED.

No. 754.—VOL. XV.

Founded by W. Robinson, Author of "The English Flower Garden."

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MARKET FLOWERS.

FREQUENT enquiries are made as to what kinds of flowers are likely to yield a profit if grown for sale, but without a knowledge of each separate case it would be impossible to give anything like an accurate answer, as much depends on the locality. But, taking the average, I should say that the following brief list may be relied upon as likely to return the grower fair profits for labour and capital invested. I refer only to such as can be grown to perfection in the open air.

CARNATIONS and CLOVES are in great demand, and, given a suitable soil, naturally well drained, they are very free. If care is taken to layer all the strongest shoots in a sharp, gritty soil, there is little difficulty in keeping up a supply of plants. The layers should be put down at once and taken off as soon as well rooted, and planted in beds, so that they may get established before frost sets in. There is a ready sale for Carnation blooms, and especially for the dark-crimson Cloves.

CHRYSANTHEMUMS are extremely popular as out flowers, not only for the great variety and beauty of their blooms, but especially from the fact of their coming in at a time when other flowers are on the wane; but for blooming out-of-doors the latest varieties must be avoided. After October the frost is frequently too severe to allow of their expanding. The season commences with Mme. Desgrange kinds, and follows on with all the popular early-flowering varieties. They are of easy culture.

DAHLIAS, although not nearly so popular as a few years back, are still in request in autumn. I find the Cactus varieties, Pompon and singles, the best for cutting, especially the white and scarlet varieties.

LILIUM CANDIDUM, the common White Lily, is a very popular flower, and where the soil is suitable—namely, light and well drained, it will be found profitable to grow. I transplant about every fourth year, and get the finest spikes about the second and third years after moving; but after the bulbs increase, the spikes, although more numerous, get smaller. They sell best before they are fully expanded.

LILY OF THE VALLEY always soils well, and well-established beds out-of-doors are by no means unsatisfactory. I lift a quantity of crowns for forcing during the winter, and after plucking out all the largest flowering crowns, the smaller ones are again planted in beds for a couple of years' growth, so that I always have plenty of crowns for forcing and beds for gathering.

LAVENDER.—This is one of those good old garden flowers that retain their popularity through all changes. It is of easy culture, striking root freely from good, large pieces planted firmly in the soil in autumn, and a bed once established lasts for a good many years. The crop is cut when the heads are in full bloom, and sells readily, either to private houses or to distillers of perfumes.

MARQUETTES have of late years been in great request, and, either white or yellow, planted out in May will continue to bloom profusely

until outdoor flowers are over. Tied in bunches, they sell freely to florists or flower-hawkers.

PINKS.—The old-fashioned fringed Pinke are very free-blooming, and if old clumps are divided and replanted at this time of year they will produce a fine crop of flowers next season. Mrs. Sinkins is an excellent acquisition.

ROSES are unquestionably the safest flower to grow in quantity for market, as there is always a demand for them. The price obtainable is now very low, if compared with that of a few years back; but this affects their growth more under glass than in the open, and anyone going in for market flowers must certainly make Hybrid Perpetuals and other hardy Roses that keep on blooming for a long period one of their strongest points. Such kinds as Souvenir de la Malmaison that flower best in autumn are very valuable.

SWEET PEAS find a ready sale, especially if sown in autumn and got in to flower early in May. The distinct colours are best.

SWEET SULTAN is one of the best annuals to grow for cutting (yellow, white, and purple). It has long stalks. Sow early and thin out.

STOCKS of nearly all kinds are favourite flowers and sell readily. The old Brompton is one of the first to make a good display of colour, and during summer the Tea-wink, Queen, and Mid-Lethian are very free.

WALLFLOWERS are grown in quantity in the vicinity of large towns, and are of the easiest culture. The seed is sown very early in spring, and as soon as the plants are large enough they are dibbled out in rows, generally between fruit-trees, where they get a little shelter, as they commence to flower during winter, and very early in spring they are tied in bunches and sent to market.

VIOLETS of the Single Blue Czar kind are grown by acres in the South of England, and few flowers any better if the winter proves mild. They find a ready sale. J. GROOM, Gosport.

GLADIOLI.—The Gladioli is becoming a popular flower in gardens, and M. Lemoine has raised some good hardy kinds named Lemoinei. He has given his name to this section which is peculiarly adapted for gardens by reason of their hardiness, although the flowers are not so brilliant as those of the Nanceianus type. This is the result of hybridizing, and amongst the various kinds are those of brilliant colours, such as President Carnot, orimeon, with creamy-white centre. As yet the forms are somewhat expensive, but will get cheaper in time. These hybrid forms seem to succeed much better in the garden than the varieties of gandavensis, but there is a tendency to get coarse, big flowers which are not necessarily the more showy. Those that are smaller, neater, and produced in greater abundance are more satisfactory. A very fine Gladioli is bronchleyensis. It is an old favourite, but very free, and not difficult to grow, whilst the tall spikes of orimeon, or rather scarlet, flowers make a great display in the garden.—V. C.

1894.—A tenant's fixture greenhouse.—Yes, you can grow a course of loose brooks for the purpose of rest upon without prejudice to the removable when necessary.—B. C. R.

REMEDIES FOR INSECT PESTS.

NEVER allow any weeds to grow on the beds, as insects which feed on them may spread to the crops, and the weeds may provide food for insects when the ground is fallow or in corners and waste places, or under hedges, as insects are fond of such positions for breeding in. Rubbish, stones, and the refuse of a crop should never be allowed to lie about, as they form a welcome shelter for all kinds of pests. A proper rotation of crops is most beneficial. If a crop is attacked by a certain insect it should be followed by one which is not liable to be injured by the same pest. Many plants suffer most from the attacks of insects when they are quite young; in such cases the plants should be pushed into vigorous growth by judicious cultivation as soon as possible. Birds should be encouraged in gardens. Few persons realise what an enormous number of insects are destroyed by birds, particularly during the breeding season, when nearly all young birds are fed on animal food. Ripe fruit and fruit-buds, however, must often be protected from them. When the leaves have fallen in the autumn all those under fruit-trees and hedges should be collected and burnt, as all kinds of pests harbour under them. Any leaves which did not fall with the others should be picked off, as there are often chrysalides curled up in them. In the course of the winter the ground under fruit-trees should be broken up so as to expose to the elements and the birds any insects or chrysalides which may be wintering there. A sharp look-out should be kept when any digging is going on for chrysalides or cocoons. As soon as any insect attack is noticed, steps should be immediately taken to check it, as at this time the old proverb "a stitch in time saves nine" is especially true, particularly when aphides are the foes. Keep any ground which is not in use well hoed; this will kill any weeds and expose any insects which may be in the soil. In greenhouses be very careful in introducing a fresh plant, whether obtained from a friend or a nurseryman, to ascertain that it is free from aphides, scale, mealy-bug, thrips, &c., as otherwise a house which was perfectly free from insects may soon become just the reverse. Give plants as much ventilation as possible consistent with maintaining a proper temperature, for in their natural state they are always in the open air. If fumigation or washing has to be resorted to, do not be content with one application, but repeat it in three or four days' time, so that any eggs which may not have been killed by the first attempt may succumb to the second. If ants be found running over plants, it is an almost certain sign that the latter are attacked by aphides or scale insects, which the ants are searching for to obtain the sweet substance they exude. As soon as any holes are found in the mortar of the walls inside a greenhouse or any cracks in which insects may shelter, the walls should be replastered. G.

1893.—Destroying wireworms.—Try a dressing of tan-bushings of gas-lime spread equally over the land. Dig it in, leaving the surface rough till spring. Fork the land over again then, and plant with Potatoes or other vegetables.—E. H.

GARDEN WORK.

Conservatory.

Large masses of the Blue and White Plumbago are very effective now. The best way to make show of this is to plant it flat in the border, preferably against a wall or near a pillar, though it makes a very useful pot plant. Good masses of Montheletia are very showy, and Hyacinthus massiliensis - six strong bulbs in a 7-inch pot - are obtruding things among Ferns. It is pity their flowers are lacking in fragrance. As Tuberosa Begonia get shabby they are placed outside to ripen their growth, and the places are filled up with early-flowering Chrysanthemums and specimen Saxifraga Lilias, the first of which are just showing colour. Fuchsias which have come on in the open air will take the place of those which came in flower early, and which are showing signs of exhaustion. Freshness of foliage is as useful in furnishing a conservatory as mere bloom. Some of the old varieties of Fuchsias, such as fulgens and corymbiflora, are very effective when well done, and there is no better way of growing the last-named than planting it out, training up the main-stem, and encouraging the branches to form a wide, spreading head up in the roof. I can't observe in a large conservatory last week, and it reminded me of old times. Most assuredly we have lost by discarding these old favourites for so many of the present race of Fuchsias. Keep a close watch upon the stock of Zonal Pelargoniums for flowering in winter. Flower-buds may be picked off till the middle of September, unless flowers are required earlier, and the plants must not be overwatered. A warm, light house is necessary to secure plenty of bloom. Weak root-water will be beneficial to Camellias in the border. faoulla gratissima and Daphne Indica will have dark coloured foliage under a course of weak liquid-soot. Daphnes planted out are much more effective than when grown in pots. They are often poor things under pot culture, especially in inexperienced hands, who suffer them to have too much or too little water, and the former is more harmful than the latter, as when the soil gets sour they are sure to become sickly, and an unhealthy Daphne soon disappears. Write Lilias, Freesia, and Roman Hyacinths about to be sown now, the Hyacinths to be plunged over the top of Green-house pots or sashes. Shift on Clerarias and other winter-flowering plants that may require more pot-room. See that the drainage is open and free.

Stove.

Young plants in a pot-bound condition may be shifted on as required, but the potting of larger plants should be done early enough in the season to get the soil occupied by roots before the days get short. When a plant gets sickly from any cause, out with it on the rubbish-heap. Stove plants for the most part are easy to propagate, and nearly every gardener worthy of the name will take care to have a young plant coming on to replace an old one. No plant grown in a pot will keep in good condition for ever, and there is a tendency everywhere to keep things longer than they are effective. As soon as a plant gets leggy, unless it can be improved by cutting down, that also should be thumped to make room for a better specimen. Fires must be kept going regularly now, only keep them down during bright days. When the morning breaks bright let the fire go out; it will save fuel, and the plants will do better without too much warming up just yet. Where the furnace is an old, careful hand will manage to keep his fire in hand so that no harm is done during the day; but the young seed head generally contrives, unless nicely looked after, to get the pipes hottest about the middle of the day, when the sunshine is at its highest pitch. Winter-flowering Orchids, such as the Dendrobies, will now be resting and ripening for the most part in the vinery or somewhere where the atmosphere is drier than in the stove. Get the peacock to be panned, and there will be plenty of beautiful flowers. The question of moisture in the house will have to be decided upon by the amount of artificial heat in use; if fire are kept down less water will be required, and this is what I should advise.

Hardy and other Ferns.

Hardy Ferns, if in pots, will now be plunged in the shade of a well-ventilated building. The shade afforded by trees, if not too dark, will do also. A collection of hardy Ferns, including the North American and other exotic species which are found hardy in this country, is exceedingly interesting; but it should not be forgotten that unless a little protection can be afforded in winter the pots must be plunged over the rim. A plant in a pot is not in so good a position for passing through the winter exposed to the drying influence of frost as when plunged out in a bed of soil, warmed and sheltered it may be by a few stones being worked in the bed. Questions are often asked about planting Ferns under stages. I have found that the Hart's-tongues, Scolopendriums, and Polystichums do exceedingly well in such positions - better, in fact, than usual greenhouse species. Polystichum angulare and its varieties are always effective in the shade of a stage, and the smaller varieties, such as Ostracum planifolium and the small-growing Asplenium trichomanes planted amid stones do well along the front.

Frames.

Where the early Melons have ripened the plants can usually be pulled out and the best stored and prepared for winter-prop. Frames will soon be wanted for Vines for another blooming. One or two frames are required now for striking cuttings of bedding plants other than Geraniums. A spare frame where there is a little warmth, such as an early frame, will then be wanted for Rose-cuttings. Then again, frames will shortly be wanted for winter estade - Lettuces, Endive, Radishes, &c. Where the most is made of everything frames will always be of use, and no one has too many of them, whether treated artificially or not. Late Melons in frames must have the blights renewed; and Lettuce late in summer cannot be obtained without bottom-heat.

Chrysanthemums.

Fewer are still troublesome and must be sought for daily, or they will ruin any plant they have a fancy for,

* In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than in here indicated, with equally good results.

and they are rather fanciful in their diet. The early plants will now require top-dressing. When giving the last thirteenth should be left at the top for the top-dressing. Should mildew appear on the plants dust with sulphur or use some other remedy. Some of the weakly-growing sorts, especially the Queen of England type, are subject to mildew and will require watching. Keep the shoots of the plant well tied, or the wind will break them.

Window Gardening.

It should be decided now whether cuttings which are just rooted shall be putted off or kept till spring in the cutting pots. They will be better netted into single pots if there is room to winter them. Keep outside as long as possible, but do not overwater, or the soil may get sour, and then there will be a difficulty in keeping the plants in health during the winter. Give water sparingly to window-boxes, and keep the plants free from dead leaves and flowers.

Outdoor Garden.

We have at last had plenty of rain, and we may now expect a period of rapid growth, especially as regards weeds and Grass. The burnt-up lawns have become green again, and will need mowing at least once a-week. If there are weak or faulty places in the turf - and I see there are in some instances - White Clover seeds sown now will soon germinate and fill up. Large weeds, such as Gentiana and Dandelions, must be taken out with as much of the root as possible. Cuttings applied to the heart of the plant will kill, and so will Watering Lawn Sand. After the rain there will be a good deal of crumpling up and plucking of flower-beds. Dahlias must be kept well up to date as regards tying and thinning. Whatever of the latter work is done should be spread over several weeks; too much cutting at one time will severely shock growth; but the buds, where too numerous, may be thinned any time. Loss of time now to gettling in cuttings of Hollyhocks. Cuttings of new kinds of Dahlias may be taken now and kept in pots all the winter. Some of the outtings may not form tubers, and there will be a difficulty in keeping them; but they will be more likely to form tubers in pots than outside because they can be placed under cover when frost is expected. There are plenty of Paeony and Viola-cuttings now, and if planted in the shade, roots will soon form; in many instances outtings with roots in the course of formation at the base may be obtained to the centre of the plants. Cuttings of bedding plants must soon be taken. Verbena, Heliotropes, freesias, and things of the kind should not be delayed much longer. "Crown" cuttings, where the soil is soft, will root better in small pots singly than crowded up in larger pots or boxes. At any rate, there must be no crowding or they will damp. Budding may still be done; but do not shorten back the shoots on which the buds are placed. Buds will take better now than if put in earlier.

Fruit Garden.

Use a little fire during damp weather in vinerias and Tomato-houses, and ventilate so as to avoid stuffiness of the atmosphere. The plants in properly ventilated Tomato-houses are never healthier than they are at this moment. My Tomatoes are in the best of health, with plenty running along the sides, the little red ones are nearly always open more or less, and thus the ventilation, with a little air on the ridge, is as perfect as possible. In many instances Vines are trained too near the glass, and the leaves lose colour in consequence, and where the main leaves have lost colour there will be a difficulty in giving proper colour and finish to the Grapes. Another evil arises from Vines being trained too near the glass; where-ever the foliage touches the glass the damp collects on them and ultimately, if they are not rubbed off with the finger and thumb, they can be rubbed off with the finger and thumb. If left to get long the steady work of the roots is interfered with. Grapes which as a rule colour badly may sometimes receive help from a little extension of the lateral growth, such as where the main shoots have been pinched in close; but where the Vines have been allowed to make a proper amount of foliage in the first instance lateral growth does harm. See that all pyramid Apples and Pears which are crowded with young growth are thinned out, and that the buds which are left require that stage when the dirt is rubbed off. Recently planted Strawberries will soon get a start now. Run the hoe through the surface occasionally to keep down weeds and encourage growth. There are many Strawberries yet to be planted, but every week's delay now lightens the crop next year. In selecting varieties to plant do not place too much faith in new sorts. It is well, of course, to try new things, but a dozen or two of plants is enough to start with of any one kind. Sir J. Paxton and President will yet take a good deal of beating in gathering Apples or Pears for cooking than the heavily-laden tree fruit.

Vegetable Garden.

This is about the latest time to sow Winter Spinach and Onion with the best chance of success. Sow a good breadth of Tom Thumbs and Red Brown Cos Lettuces. The former will get large enough to use on a south border, and the Brown Cos can be lifted and planted in frames before frost comes. Dry Ferns and dry leaves are excellent for sheltering Lettuces and Endives. This might be made a note of now for application when the season comes round. Sow Chervil, Corn Salad, Radishes, and Cress as required. Hitherto such things have been sown on north borders or wherever a cool bit of land could be found. Now I must go back to the south border again. French Beans and Scarlet Runners are plentiful now, and those who wish to preserve either of these for winter use may have a quantity gathered when dry, and after stringing them pack them in earthen jars, with layers of salt alternately with Beans. Cover and keep airtight in a cool cellar till required. All pods both of Beans and Peas should be gathered as soon as fit for use. If there are spare pits where a little artificial heat can be obtained if required, one of these may now be planted with an early kind of French Beans; No Plus Ultra or Oshana in French Beans varieties. There must be no surplus growth on Tomatoes now; the probabilities are that the autumn will be dull and wet; rather than bright and sunny, and then there will be disease among Tomatoes outside, and those planted crowded with foliage will suffer the most. Young Corn-plant seedlings on a

be planted in winter houses must be encouraged to get strong; the more reserve force of strength and vigour the plants possess the better they will go through the winter. The best soil for Cucumbers is good sound turf loam with plenty of body in it. If the fibres in the turf be too much decayed it will be none the worse. A little soot and a little bone-meal may be added; liquid-manure can be given when the plants require help. E. HODDY.

Work in the Town Garden.

It is now high time to pick out the leading growth of Tomatoes; in fact, open all just above the last-formed bunch of bloom; remove all side or secondary shoots, and shorten back all the leaves but two or three at the top of each stem to half or less of their length. If this is done about the middle of August the flowers that are now on the poles of expansion will have about six weeks in which to set fruit, and this to swell and perhaps ripen before too cold weather sets in. This is just about right, and should frost or cold and wet weather commence rather earlier than usual, say fruit that is still green will soon ripen it out and removed to a warm place, such as a kitchen shelf. Stopping the fruiting purpose, the laterals also should be thrown all the strength of the plant into the fruit, while the partial defoliation admits air and sun to the swelling or ripening fruit and reduces the risk of disease. This has so far been a grand season for Tomatoes out-of-doors; never have the plants looked better or carried heavier crops of fruit. Where strong plants were got out to good time and kept watered as required during the drought, they are looking really grand now, and here, at least, doing better outside than under glass. The buds of Chrysanthemums in pots are now fast appearing, and when large and well formed required must be "taken" by removing the incipient growth-buds that will be seen just below as soon as they can be fairly seen in the points of the shoots. In the case of "terminal" buds the central one that is to be retained and will form the flower is surrounded by flower-buds, instead, and opposing large blossoms to be wanted, three must be removed in the same way, leaving only the uppermost and central one on each shoot. But where flowers are desired for cutting, or plants for ordinary decorative purposes only, the lateral buds should be obtained by leaving three or four of the best buds to each shoot instead of one. Such free-flowering kinds as Mrs. Ruddle and its sports afford beautiful masses of bloom in this way - miniature bouquets, in fact, and on these the new J. S. Dibben (Japanese) and some others. On strong plants of Mrs. Ruddle, Mrs. Dixco, &c., I have sometimes left the crown bud and three terminal growths, allowing one bud to each. The "crown" flower, of course, expands first and is cut; the terminal one opens later and makes a fine show of colour. Crown buds must not be stopped or thinned any more now; but give water freely and a little liquid-manure, and syringe liberally on bright, warm days. B. C. R.

THE COMING WEEK'S WORK.

Extracts from a garden diary from August 19th to August 26th.

Put in cuttings of various kinds of bedding plants. Onions of some sorts of Pelargoniums are rather scarce, and the old plants of these must be cut down, and proper time, be potted up and be helped in heat with the view of having plenty of young shoots to take off early in February. These, if helped on in heat, will make good plants by May. It will be better not to delay the propagation of all tender plants longer than what is absolutely necessary. My Pelargoniums are all struck in the open, the Tradescantia and other delicate sorts in single pots, and the hardier kinds in 5-inch and 8-inch, as I find these sizes are best for the shelves. Made another sowing of Giant Mignonette; in this case the pots, another lot, is rammed in firm soil. I find this firm soil very necessary for securing dwarf, sturdy plants. Made another sowing of Early London Cauliflowers for wintering in frames. Some may think this second sowing superfluous; but seasons vary, and in the event of a mild winter some of the first lot of plants may button prematurely. At any rate, experience has taught me that there is advantage in dividing my usual quantity of seed and sowing it twice, with an interval of a fortnight or so between. Harvested the first crop of Onions; gave the same ground a dressing of soot and forked it over to the next lot, and sown on the soil are fit to go out. Earthed up the last-planted Winter Greens. Everything, including the weeds, is growing rapidly now. Took advantage of a couple of fine days to run the hoe thoroughly over the small weeds among growing crops. This will check them, and another stir up in the course of a few days will complete their destruction. Planted a spare pit from which Melons have been taken with French Beans. Only early Kidneys are planted now. Made another sowing of Lettuces and Endive. A good deal of time is taken up now picking off dead flowers and leaves in the flower garden. Carpet beds, which were still pointed, take up a good deal of time in plucking and jerking to keep the outlines of the designs perfect. A large mass of the White Japanese Anemone is very effective on Grass. This is one of the most effective of the late summer and autumn flowers for massing. Spring-planted Tufted Panicle are still very bright. Those who possess but little glass for wintering tender plants should do more with the present Onions than nothing cheaper or more effective. Cuttings rooted now are better than any other old plants, although the latter plan on an emergency will do. Such hardy annuals as the pretty Forget-me-nots, Silenes, Limnanthes, &c., are up and will be ready for potting out as soon as the beds are cleared. Like autumn planting best, as the plants flower earlier. Moyaed a crowded mass of Lilium caudatum and planted elsewhere, small bulbs being planted in a bed in the reserve garden. Potted more Freesias and Roman Hyacinths for forcing. Went through the climbars in conservatory, taking off a few of the shoots where much crowded to take a little more light. Mandevilla suaveolens is now beautifully in bloom. The fragrance filling the house. Chrysanthemums are now giving daily waxes, budding, &c. I want good blossoms, but am contented if I get from six to twelve on a plant; a hundred or so are grown with stopping, and from three to six blooms are all I shall leave on these. The cooler, longer nights are helping on the growth, and the earwigs are giving less trouble. Some trouble has been taken to protect fruit, from wasps, but the birds have been hunted up and destroyed.

TREES & SHRUBS.

THE VENETIAN SUMACH.

THIS is a striking shrub when in flower, and its profuse blooming has gained for it the name of Wig-tree, or Smoke-plant, the effect of its feathery, sterile flower-clusters angaggesting a film of smoke, as seen from a distance. Our illustration shows well its beauty as an isolated specimen, permitted to develop itself without hindrance from neighbouring things. Under these conditions one sees the *Rhus cotinus*, as it is called botanically, in its best aspect. The shrub is pleasing when the garden is getting somewhat dull, and although it is not a tall grower, it spreads about, making a dense, bushy, and vigorous growth. The leaves are glaucous colour, round in shape, and although the flowers themselves are inconspicuous, there is much beauty in the feathery reddish-purple clusters that succeed them. They remain attractive over a comparatively long season. The Smoke-plant was introduced from Southern Europe as long ago as 1656. It is quite hardy, and most pleasing when permitted to develop without being crowded up by other shrubs, as is too often the case in gardens. It is interesting to mention that M. Ed. Andre, writing in the *Revue Horticole*, describes the Venetian Sumach in its native home. He says: "In the well-known mountain-pass of the 'Portes de fer,' between Orseva and Turn-Severin, where the Danube has cut a channel through the lofty Transylvanian ranges, a sight worth seeing in the month of October is that of the Venetian Sumachs, which carpet the slopes, when their foliage is lighted up by the rays of the setting sun, affording a singular contrast to the white foliage of the silvery-leaved Lime-tree."

Spiraea paniculata.—Though differences of opinion may exist as to the correctness of the name given, there can be none as to its being a very beautiful *Spiraea*, and one, too, that blooms later than many of the others. The flowers are borne in erect branching panicles, which are usually more or less pyramidal in shape, and its season of blooming is extended by the fact that the flowers on the secondary branches do not expand till the central ones have been open some time. A large bush of it some 5 feet or 6 feet high is, when occupying an isolated position and in full flower, a very beautiful object.—H.

4338.—**Ash-tree.**—The unusual number of seeds the tree is carrying, and the long drought, are no doubt the cause of its weak condition. It would relieve the tree immensely if you remove the seeds at once. It might not make any fresh growth this season, but the taking away of such a heavy load will give it a longer time to recover its strength and enable it to start away more vigorously next year. The Ash likes a moist position. Probably yours is rather dry.—J. C. C.

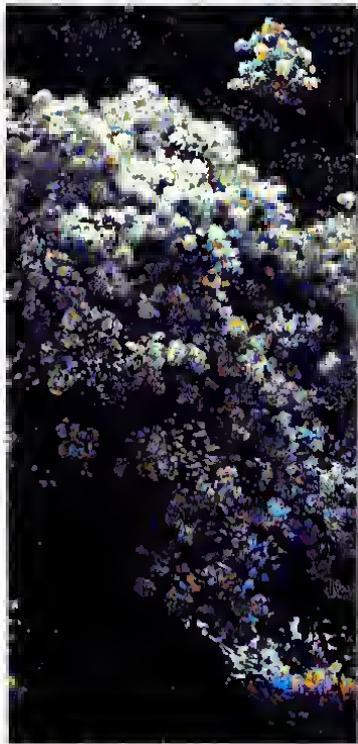
4330.—**Myrtle cuttings.**—Cuttings of the nearly mature wood—that about two-thirds ripe is the best of the current season—may be inserted in September or October, in well-drained pots of sandy loam, mixed with a little leaf-mould. If kept in a "quiet" corner of the greenhouse, away from sun and draughts, and the soil maintained in a half moist condition, most of them will be found to have formed roots, and will begin to grow in the spring. Another way is to take off the young growths—side shoots, or tops—in the spring, when about 2 inches long, and insert them thickly in pots of very sandy soil, as before. If these are placed in a warm, close house or pit, or in a frame with gentle bottom-heat, and kept regularly moist and shaded, they will root with great certainty, and make nice little plants the same season. A frame will do for cuttings inserted in the autumn as well as a house, provided that frost can be excluded, and I have also rooted them in the window of a moderately warm room.—B. C. R.

When the wood is about three parts ripened is the best time to take cuttings of these plants. Any sandy leaf-soil will do. Make them firm, and do not use too large a cutting. If kept close in a frame or greenhouse until called, and then placed in a gentle bottom-heat, the sweet-smelling shrub is propagated with ease.—F. H.

Myrtle shoots just getting firm, taken with a piece of last year's wood, if put in now will root during the winter and be ready for potting off in spring. Plant firmly in sandy soil; keep in the frame till end of October, then

move to greenhouse. Keep close, and shade from hot sun-bles. A bell-glass will be useful, but the inside of the glass must be wiped dry every morning.—F. H.

—The proper time to put in Myrtle cuttings is when the young wood is fully grown, about August. Take the cuttings off at a joint, and plant about half-a-dozen in a 4 inch or 5-inch flower-pot. The compost should be formed of loam, leaf-mould, peat-soil, and sand in equal proportions. Plant the cuttings firmly round the sides of the flower-pots, and place them under a close hand-light; or if there be only one flower-pot full of cuttings, a bell-glass would be more convenient; put the small pot containing them inside a larger one, and fill up the space between with coarse sand or fine gravel. The rim of the bell-glass should rest on the sand between the two pots, and this keeps the air well away from the cuttings. The bell-glass should be removed daily, wiping the inside round with a dry cloth. They will take six weeks or two months to form roots, and when they have started to grow, repot them singly.



The Venetian Sumach (*Rhus cotinus*).

Good soil for Myrtles is yellow loam, two parts: one part light fibrous peat; and one part leaf-mould, with a little sand added.—J. D. E.

4329.—**Thuja Lobbi for a hedge.**—This is an excellent shrub for a hedge in a windy situation, but I fear it is rather too hungry a feeder and too gross a grower to be near flower-beds. You could cut it as freely as any hedge, and regulate its height from 3 feet up to 12 feet or 14 feet. I would prefer the American *Arbor-vitae* as being closer in habit and of steadier growth. The distance apart must depend in a measure upon the height you wish your future hedge to be.—P. U.

4303.—**Treatment of an Araucaria.**—A good remedy would be a top-dressing of loam, kept away from the stem of the tree. Do the work carefully, but I am afraid there is no real remedy. The *Araucaria* requires an open spot, not cramped up as it usually is in gardens. It is curious that such a tree should be planted so freely in places for which it is not fitted. More than half the examples we see die away in the manner described by you, and the only remedy is, I fear, to remove the tree to more congenial quarters. Once it has got in bad condition it is not an easy matter to restore it. In nine cases out of ten it is impossible.—C. T.

Do not complain the tree mentioned by you is suffering from starvation, and the remedy is feeding. Dig a trench 18 inches wide

and 2 feet deep right round the tree at 4 feet distance from the trunk, and into the trench put a load of good stable-manure; tread down, and fill in the trench with the best soil obtainable. I had two fine young trees similarly afflicted, but under the above treatment the loss of sap is stayed and the downward progress averted. If allowed to go on the end is certain death.—H. K. FITCHCOCK, M.D., *Bournemouth*.

Best twelve Daffodils.—One of the most useful bulbs is the Daffodil, or Narcissus, as it is also called. The lists of bulbs are so bewildering that it is an assistance to those who require simply a few kinds to choose about a dozen of the best. Of Daffodils a good selection would be *Horsfieldi* or *Empress*, the latter preferably, although some appreciate the former more than the other. It is a trumpet variety, the flowers very large, and with a creamy-white perianth, whilst the trumpet is rich-yellow. It is one of the finest of the family. *Empress* blooms a little later, and the two kinds might thus be planted to form a succession. *Maximus* is a good type, but not so strong as those mentioned. Its flowers are, however, very beautiful, intense yellow, bold, and of splendid shape. *Emperor* is another fine variety, yellow, and strong in growth. *Glory of Leyden* is, I fear, rather too expensive for the majority, but it is a noble Daffodil, large and robust. It will be much grown in the future. Of the *incomparabilis* section choose the fine *Sir Watkin*, which, if it varies in different gardens, is always pleasing to look at for the shades of yellow in the large flowers. The early-flowering *Santa Maria*, the flowers intense yellow, is a good kind. I think it is one of the most beautiful of all Daffodils, and certainly the richest in colour. *Ar-Righ* is a good Trumpet kind, the flowers rich yellow and the growth robust. *Princeps* blooms early, and is a worthy kind. One may select either this or *Golden Sprig*, which is a very rich yellow. Of the *Poet's* varieties *ornatus* is very beautiful, early, and free, then one must also have the double white, appropriately likened to a *Cardenia*. Of the *Hoop-petticoot* forms *Corchularia citrina* is one of the more vigorous, and forms a good edging; and of the doubles select the old *Double Telamonius* and the handsome *Butter-and-Eggs* variety. In gardens of average size the more troublesome kinds, such as *N. cyclamineus*, should be avoided. *N. nans* or *N. minor* are worth a note for their beauty as dwarf kinds, each smothered with flowers. *Stella* is a beautiful kind; also *N. Barri* conspicuous, in which the cup is stained with rich orange.—V. C.

The Purple Cornflower.—A splendid hardy plant blooming in August is the Purple Cornflower, known botanically as *Rudbeckia purpurea*. It grows strongly, and will exceed even near large towns, making a fine leafy clump, vigorous, and in every way satisfactory. Amateurs do not seem to know much of it, but it is worth a note, whilst the flowers are very distinct in colour, bold in shape, and purple-rose, set off by a blackish centre. At this season of the year there is a surfeit of yellow from the Perennial Sunflowers and other composites, so that the rosy-purple shade of this *Rudbeckia* is a decided relief and contrast to that of flowers in general. It is perfectly hardy, and a good piece put in in the autumn will make a show next year.—V. C.

Lilium superbum.—This is a lovely Lily. It is in full bloom in July, and the fortunate owner of a large garden cannot let in many charms and picturesque ways. It is a tall grower, the slender spikes rising over 8 feet in height, and when the groundwork is Rhododendrons, the young shoots are protected in spring from frosts. The flowers are borne in large numbers on the stems, and vary greatly in colour, the most brilliant being those of a bright scarlet, or rather, I should write, crimson, like a Game of fire seen from a distance in the woodland. It is not everyone, of course, that has a woodland, but a good colony of this species, sending up its tall stems, makes a fine picture. Unlike many others, it makes a vigorous growth, is perfectly at home in a light, peaty soil, and has an irresistible beauty when swaying about in the wind on a summer day. The name is certainly appropriate. *L. superbum* is for the large garden. *L. superbum* is lost in cramped places.—C. T.

ROSES.

THE PLEASURE OF ROSE-GROWING.

It is not a difficult matter to decide by what means we may obtain the greatest amount of pleasure from our Roses. Some seek it through the medium of the exhibition, but there it is dearly bought—at least, by amateurs. Our methods of Rose showing are so stereotyped, we think so much of single blooms, that if one would enter the show arena he must begin by making great sacrifices. The pleasure of Rose showing does not permanently satisfy. Anyone visiting a Rose show cannot fail to admire the magnificent flowers seen there. I do not wish to say one word against the practice of growing and showing them. It is something to know to what perfection of form and colouring particular kinds can be brought, but that is not, or should not be, the sole end and aim of Rose shows. A celebrated amateur exhibitor recently visited a garden where Roses are largely grown solely for effect, and he confessed that that was more after his own desire, and he thought he should give up exhibiting. In the course of that ramble he experienced pleasure altogether beyond what he had realised as an exhibitor. To exhibit successfully one must practise numerous details that need never worry the ordinary grower. From the pruning to the flowering there is a marked difference in the methods. The

EXHIBITOR'S PLANTS must be hard pruned, and then comes the inevitable disbudding. It is no exaggeration to state in regard to many Roses that the ordinary grower has a score of flowers where the exhibitor can take but one. When the buds are selected then comes the feeding. Then there is the question of protecting and shading from storm or bright sunshine. Yet this is essential to meet the requirements of the exhibition, which at present only fosters the production of fine flowers, and therefore excludes many worthy kinds simply because their flowers are not up to a particular standard of form. If we would seek and realise the fullest pleasure, we must wait until at Rose shows classes are provided for Roses as grown in gardens, the same to be judged on their own merits, and not from any pre-existing standard. At present one type of flower only is encouraged or accepted, regardless of those lovely kinds so handsome in the bud and so profuse in regard to the great trusses of flowers they produce. In the garden these last often give us the most pleasure. The exhibitor above referred to was alarmed with Mme. Joseph Schwartz as it appeared in a group, the strong shoots terminated by immense clusters of bloom standing erect, some of the flowers fully out, showing their great flesh-tinted, rose-margined, shell-like petals, others mere buds of delicate hue opening in succession. Marquise de Vivens and Dr. Grill were unknown to him, and yet there were not two lovelier groups, especially that of the latter. Such kinds as these never appear at the shows, but why should they not do so? If such kinds treated as the show kinds are will not then produce full flowers simply because naturally there is not sufficient substance, surely they should not be ignored. Whether exhibited or not they will give us much pleasure in gardens, as they are most reliable in regard to their blooming. If the bud of to-day is a full-blown flower to-morrow, that matters not, for quantity atones for want of quality, and even these many-tinted, open, loose flowers have a fine effect on a bright summer day. Again, when we grow for pleasure only we shall not have many leggy standards, but dwarf bush plants, and these not set out a yard apart, but grouped or massed, since this is the very best way of showing off the merits of fine Roses. It is too generally supposed that

ROSES are CROSS FEEDERS, and the heavy manurial mulches and the drenchings with strong liquid so commonly given detract from our pleasure. We can modify this to a considerable extent, and have Roses in abundance without the slightest aid from rank manures. If our Rose beds are redolent with the odours of the farm-yard, we cannot have them beside our open doors or beneath our windows, and, other things being favourable, that is just the spot where at the present time we should have great glowing groups of Tea and Monthly Roses filling the air with rich fragrances. Many Roses make such excellent bushes, that when grouped and

in full growth they effectually hide the earth beneath them. Those that do not do so, and newly-planted groups also, should be carpeted with some of the many dwarf plants so suitable for the purpose. This adds to their appearance and increases our pleasure. Surface-rooting plants, like Sedum and Saxifrage, and lovely alpines, such as *Linaria alpina*, do not rob the Roses in the slightest degree, but without a doubt they benefit them, for on a scorching hot day (June 28th) I was admiring a group of The Bride Tea Rose, carpeted with *Sedum glaucum*, and placing my hand under and among the carpet, I found the earth cool and moist, whilst bare ground was hot and dry. That night there came the most severe thunderstorm, accompanied by a deluge of rain, that has been in this district for years. Next morning I looked round the Roses, and the full, heavy flowers of this and other kinds were borne down by the weight of water that had descended upon them, but they were pure and unsoiled, for the advantages of the carpet were shown in that no splashing of the earth could take place. A great many are thinking what they can plant to reduce the quantity of tender bedding plants. If they have sunny flower gardens let them try Tea Roses, for they are ever growing, ever blooming, are a source of great pleasure through summer and autumn, can be planted thickly alone or thinly to admit of combinations, and, all things considered, are the most thoroughly satisfactory of all. H.

ROSES BY THE SEA.

HAVING for some years been engaged in the cultivation of Roses in the neighbourhood of the sea leads me to give my views as to the best kinds for growing there. Situations even by the sea vary greatly, and Roses may succeed splendidly and also fail in the same district, and yet only be separated a few yards. Visitors to the seaside may notice a variety growing and blooming splendidly, and there and then come to the conclusion that the variety is specially adapted for the purpose, and recommend it in print accordingly. They may have overlooked the special conditions under which it is growing. Perhaps it might have been situated in an alcove or protected by a hutch, and which makes all the difference between success and failure. Given the requisite shelter, Roses may be grown as successfully near the sea as further inland, and, in the case of Teas, perhaps better. In fact, as far as these letters are concerned, the beautiful tints are more pronounced and certainly much better than any I have ever seen on flowers inland. No doubt most people are aware it is difficult for almost any kind of tree or shrub to grow within sloop of the sea spray, and when subjected to ontling draughts, as is very often the case, it is almost death. Roses are no more exempt than anything else, for though they may look thriving enough one day, if a rough storm comes the young growths would literally be soon lashed to pieces. From my experience thus gained, I came to the conclusion that if Roses are to thrive well near the sea it is absolutely necessary that shelter be provided. No doubt there may be found here and there a few natural coves where Roses thrive surprisingly well, but these are exceptions. A low wall often makes all the difference between success and failure, and from such a wall I have gathered the loveliest of Teas, and also in the narrow border in front. From the above it will be gathered that there is no hard-and-fast rule to go by as far as special varieties are concerned, except that the Teas, Noisettes, and Chinas thrive the most satisfactorily when given the needful shelter. The darker Hybrid Perpetuals are certainly the least satisfactory, but I have gathered splendid blooms even of these if a favourable time happened to attend the opening of the buds. For the benefit of seaside readers I will give a list of the Teas and some other kinds which used to thrive exceedingly well. Anna Gilliver, Catherine Mermet, Gloire de Dijon, Homère, Mme. Berard, Mme. Bravy, Mme. Chedene Guinoisseau, Mme. de St. Joseph, Marie van Houtte, Mme. Lambert, Rubens, Souvenir d'un Ami, and William Allen Richardson. The China Roses and the varieties of Rosa Polyantha also do well. Of this latter section Mills. Cecile Brunner was of a splendid kind, large clusters of small flowers forming very frooly. Where the Dog Rose

and Blackberry thrive, there, too, will Roses grow when given the ordinary ontural attention, with the necessary shelter from very rough winds and direct spray. Y.

ROSE NOTES.

AUGUST is not a month of many blooms, but a season of second growth, a preparation for the autumnal display. It is desirable to have the Teas where we can see them day by day, and, on the other hand, it is better to have the Hybrid Perpetuals where they will not too plainly shroud their nakedness, for really the season of their beauty, whether of leaf or flower, is a short one, often reaching its limit before summer is past. It is very different with the Teas, as they are delightful when growing vigorously, the varied tints of leaf and shoot embracing shades that contrast prettily with the rich dark green of the previous and mature growth. In summer dwarf plants send up from the ground fine strong shoots which terminate in a great branched cluster of flowers, and these have an additional value, for if they ripen and stand the winter we can rejuvenate the bushes by cutting old growth clean away and retaining the young and vigorous wood. Among the kinds that have been sending up such shoots is Marie van Houtte on its new roots. This removes a doubt that hitherto I had entertained, namely, whether after all the vigorous root-action of the season, that is the seedling Brier, was not the source of the vigour that has been manifested by all our best Teas. For two seasons I have watched this group and been disappointed, for though the plants were healthy and flowered, they kept very dwarf and the wood they made was slender. Now, however, each plant has doubled its height and strength by sending up one or more shoots, thick, strong, and nearly a yard in height. This would seem to prove that when once the plants have made strong roots they will compare favourably with those upon foster roots. If we raise plants from cuttings, there is a reluctance of growth above ground and below. The quickest method is not necessarily the best, and if that is all we gain, the saving of time is practically of little moment. Though we have to wait a little longer, it is better to establish our best Roses on their own roots; then they will not be easily destroyed, for if an unkind winter levels them to the ground, they will shoot from beneath and grow and flower freely. Ernest Metz has been fine this year. It is undoubtedly one of the great Tea Roses of the future. From now onward, with fine weather, there is much enjoyment among the Roses. The days are shorter and cooler, caterpillars are gone, fly ceases to be a trouble, the ravages of mildew are checked, the flowers open gradually and last longer in perfection. The flowers may not be quite so fine, but they are pretty and always sweetly scented. H.

4197.—Flower-pots becoming green.

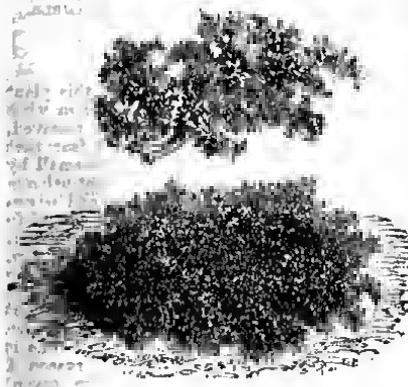
—No, the plants will not suffer, but it is unsightly, and usually occurs when much water has been used or the pots have remained long in one place without being cleaned. Perhaps the pots were dirty when used. It is not uncommon to see an antonra especially using dirty pots, but they should be always clean. This is a golden rule. I should take the pots out of the frame or wherever they are, and give them a thorough good scrubbing with a hard brush and cold water. No harm will happen to the plants if the operation is done with reasonable care.—C. T.

Gentiana asclepiadea.—At the end of summer one of the finest hardy plants in bloom is this Gentian. It is superb when one sees a large mass of it, and many readers of GARDENING can grow this handsome plant. It likes moisture and a certain amount of shade, whilst the soil must be moderately rich. A position on the rockery, where the situation is damp and not too exposed, suits it admirably, the long stems being studded with rich blue flowers throughout their length, and they make a decided contrast against those of the variety alba. There is considerable diversity of colouring in the flowers—some self blue, others with white markings. It ripens seed freely, and is raised best in this way, as seedling and stronger than divided pieces. Sow the seed in a pot plainly and keep in a cold frame. Be careful to water judiciously.—V. C.

THE KITCHEN GARDEN.

CULTURE OF ENDIVE.

WELL-GROWN and thoroughly blanched Endive is only slightly inferior to Lettuce in point of crispness and flavour, and as far as appearance is concerned—a very important consideration too—it surpasses it any time after the end of September. It is doubtful, however, if the



Moss Curled Endive (one-eighth natural size).

value of a good supply of Endive is fully appreciated by either amateur gardeners or the proprietors of comparatively small gardens, or otherwise very much more of it would be grown. To a certain extent, the taste for Endive has to be acquired, especially when it is served whole and without any dressing; but the slightly bitter taste accompanying it is pleasing to many palates. The most valuable crops, as a rule, are those obtained from plants raised in July and the early part of August, these being the least liable to run to seed prematurely, and arriving at a serviceable size when Lettuces are less abundant. If the plants fail to grow strongly after being put out, it is most probably owing to the ground being either too poor or too cold and heavy. The finest Endive in the most easily produced on freely-manured light soils, there being no better sites than those cleared of early Potatoes, and extra fine produce can be obtained between the rows of newly-planted Asparagus. Unfortunately, the more strongly they are grown the more liable are the plants to be spoilt by frosts. Quite small plants, or, say, any obtained by sowing seed in August or the early part of September, if put out rather thickly on a warm raised border, will usually withstand very severe frosts, and if covered with frames when these can be spared, the growth through the winter will go on steadily, a serviceable lot of hearts being available in February, March, and April for mixing with the earliest Lettuce. Many succeed in growing a capital lot of Endive only to spoil the greater portion either by blanching too much at one time, or because they have neglected to store the bulk of the crop where it is out of the reach of severe frosts. It should be remembered that the blanching process effectually stops the growth of the plants, and should not, therefore, be commenced too soon; also that Endive keeps badly after it is blanched, thus rendering it imperative that the process be piecemeal rather than wholesale. When it is known in addition how quickly the plants decay after the tips of the leaves have been crippled by frosts and other causes, it will be more fully realized how much care and judgment are needed to preserve and prepare the crops for use during the late autumn and winter months. In some seasons the plants left in the open escape injury as late as the end of November, but I hold that the bulk of the crop should be stored or attended to in some way much earlier, or, say, by the middle of October, and the most forward plants either protected where they are, or transplanted to frames by the end of September. It is in the low-lying districts where the greatest difficulty is experienced in preserving Endive, a very moderate frost damaging the plants sometimes in September. The safest course in all such localities is to grow the Endive in beds as

much as possible, these at the present time being enclosed by frames and covered by lights or mats whenever frosts are imminent.

MOSS CURLED, a variety of compact growth, is sometimes grown for the earliest supplies, but it is very tender, and ought not to be much relied upon. Green Curled, of which there are two or more forms, all more or less distinct and serviceable, can be had fit for use quite as soon as Endive is required in most establishments. The French selection, Lonvier's fine lacinated, is of sturdy growth, and promises to be of superior quality, but I have not yet had an opportunity of testing its keeping qualities. Picpa Fine Curled is a reliable form of Green Curled, and is planted extensively here. For use when Lettuce is not available, and also for cooking purposes, there is none to surpass a good stock of the Batavian Broad-leaved, this also varying considerably. What is known as the Improved Form, when it can be obtained true, is undoubtedly the best, but not infrequently quite another thing is supplied by seedsmen. The Lettuce-leaved Batavian (Scorole hlonde) is a favourite variety in France, and this we are trying for the first time. It is of rather ragged growth, and in all probability will not prove so hardy and useful as the Batavian Broad-leaved Improved. All will be treated alike as regards protection and blanching, nothing being left to chance. Early in October a considerable number of frames, span-roofed and otherwise, will be at liberty for protecting salad. Some will be placed directly over the Endive where grown, and completely filled if need be by transplanting the requisite number from other quarters. Others will be set on a dry warm border, and eventually closely filled with both Green Curled and Broad-leaved forms, these being fully grown and previously tied up to facilitate the process of moving them with a good ball of soil about the roots. When lifted carefully and before frosts have injured the foliage, Endive will keep surprisingly well in sheds, and where space is limited it may be stored in conical heaps surrounded by dry sand, the points of the leaves being brought up well together so as to protect the hearts facing outwards. The best Endive, and for a greater length of time, can, however, be had by keeping the plants in a healthy growing state in frames or the borders of cool fruit-houses, blanching these as they are required for use.

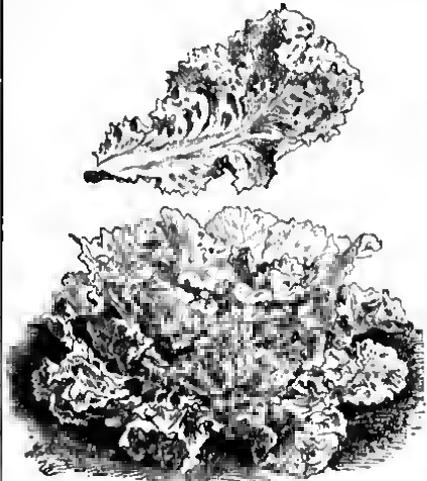
BLANCHING, as before pointed out, should not be commenced till the plants are nearly or quite fully grown, from thirty to fifty plants, according to circumstances, being prepared at weekly intervals. As long as the plants can safely be left in the open, the blanching can be most simply effected by tying the outer leaves well up together, this excluding the light from the hearts; but if they are enclosed singly in 6-inch or larger pots inverted over them and the holes stopped, the process will be more rapid, and protection will also be afforded. The earliest Endive may be quickly blanched by having either slates, tiles, or thin boards laid on them, and fresh hay is often used for a similar purpose. The most perfect Endive, even, in my opinion, be obtained by placing strong plants in a Mushroom-house or a warm, dark cellar in batches. Here they blanch quickly and beautifully, and are more crisp and sweet than is the case when otherwise prepared for use. We always bed the plants wherever stored under glass in fairly good, moist soil, and keep this moist as much as possible without resorting to overhead watering. Dryness at the roots causes the leaves to become tough, and also induces premature flowering. W.

VENTILATING CUCUMBER-HOUSES.

UNTIL I turned my attention to market growing I was an advocate for free ventilation for Cucumbers, as in a gentleman's garden it is more important to have a regular supply for a considerable period than to cut a great number of Cucumbers early in the season. There is no doubt that Cucumbers can be rushed on with heat and moisture. During the hot days of last June the growth was marvellous; small fruits one day would be large fruits fit to cut the next. I calculate that by the non-ventilating system, with abundance of moisture, about double the quantity of Cucumbers may be cut in the same time from the same space as when they are given. It should be understood, however,

that in market growing large houses are mostly employed, and therefore there is not that sense of stagnation that is present when a small house is kept closed. In a house 100 feet or 200 feet long there is always a certain amount of circulation going on. For Cucumber-growing on the non-ventilating system, I prefer the houses which are span-roofed to run east and west, and then if the south side of the span is shaded with whitening and eize, the plants may have the full light from clear glass on the north side. A house running north and south would require both sides shaded, and this would darken the house so much as to weaken growth, and the plants would sooner succumb to the forcing treatment. Under this system if they are to have any degree of permanency they must have plenty of space. The plants should be not less than 10 feet apart, as the growth after they are well started and on the trellis is exceedingly rapid, and if planted so near as they generally are in private gardens, the knife would always have to be in evidence, and this would be ruinous in effect. What is wanted in Cucumber culture is quick growth, and this the non-ventilating system gives in a very marked manner accompanied by colour and shape. It is just possible that a Cucumber grown so rapidly will not keep fresh so long, but one never hears complaints; perhaps the rapid sale prevents this, and certainly the fruit is beautifully fresh and green. A small house worked on the non-ventilating system would probably be stuffy, but this is not felt in a large house. Everybody has to make the best of the means at his disposal, and it should always be borne in mind that Cucumbers from Easter to Whit-tide are worth at least double what they will be later on, and if the plants give way under the pressure (which if they have room enough they seldom do), even then it pays better to run them out and fill in again with young plants which are usually kept in stock in case of a blank appearing. H.

4335.—Scabby Potatoes.—It is not usual for Potatoes to turn out scabby from a loose soil. There is, therefore, something in its composition that causes it. Strong manure is known to promote scab on the tubers if it is used at the time of planting, and especially that from pig-styes. I advise you to change the character of the manure if you use any, and not disturb the ground after it is dug up in the



White Batavian Endive (one-eighth natural size).

winter. Plant the sets with a dibber, as the firmer you can get such ground the more likely you are to secure the tubers free from the defect you mention.—J. O. C.

4321.—Liquid manure for Tomatoes.—Healthy, well-rooted plants growing in pots, boxes, or well drained borders cannot have anything better given them than a diluted infusion of either horse or sheep's droppings once or twice a week while the fruit is swelling. Some weak cool water occasionally, say, every other week, will keep the plants in good condition,

and impart a healthy, deep-green hue to the foliage. In the way of a stimulant, a weak solution of either nitrate of soda or sulphate of ammonia, half an ounce to the gallon, is excellent, but must not be given too frequently. These salts greatly stimulate the root action, and a dose or two given shortly before a top-dressing is applied, or as a change from the ordinary liquid-manure, is usually followed by the best results. Many growers use guano to a considerable extent—generally in solution—and some in a large way whom I know say that they find the ichthemic kind superior to any other, at least, for this particular subject.—B. C. R.

I have used a good many kinds of liquid-manure for Tomatoes, and I have, as contrasting treatment, trusted to heavy manuring of stable manure, and used only plain water. The results in the latter case were equal to heat kind of artificial, and cost much less. A load of stable-manure will manure a good many yards of border surface, and the cost would be about 5s. or 6s., and this lasts the whole season. That the plants like this treatment is shown by the rapid way in which the roots work into it. Five shillings spent in artificials would go into a very little way in manuring a large house of Tomatoes.—E. H.

I have used nothing but sewage-water in the way of stimulants for my Tomatoes all the season, varied with an occasional dose of clear water. I have every reason to be satisfied with it. Of course, I have tried chemical manures for them, and if I have a preference for either it is for ammonia in liquid form, given once a week at the rate of half an ounce to one gallon of water. This quantity must not be exceeded, or the flowers will not set properly.—J. C. C.

The Tomato is a very free-rooting plant and a gross feeder. It requires good soil to grow in, in the first place, well enriched with decayed manure and powdered bones, and when cultivated in flower-pots, rich surface-dressings, composed of equal parts of decayed manure and bones, cause greater vigour in the plants than manure-water does; but after the soil is well filled with roots, and the surface-dressing as well, liquid-manure is necessary to maintain a healthy growth and develop the fruits to their full size. There is none better than partly-decayed stable-manure, soaked in water for about twenty-four hours; the liquid by that time will become clear, and of a dark-brown colour; dilute it with about half its bulk, or more, of clear water, and apply this at every alternate watering.—J. D. E.

I do not find it makes any difference what class of liquid-manure is used, but I do find a considerable advantage from using a variety of manures, the change being decidedly beneficial.—F. U.

1331—Artificial manure.—Peat Moss-litter, when it has passed through the stable, is an excellent manure, better for some things than straw-manure, but if sufficient cannot be obtained, horse-dust may be used. Fish-manure I have found excellent for most things, and guano, when it can be obtained, is very good when applied to the surface and hoed in. Nitrate of soda is good for all the Cabbage tribe.—J. D. E.

Peat-Moss-litter can hardly be called manure until it has been used in the stable. When mixed with the droppings of horses and saturated with their urine it is then excellent. I like it better than manures made from straw-litter. I like nitrate of soda for light land, mixed with common salt, 10 lb. of salt to 5 lb. of nitrate, and used just before cropping, or the salt may be used during the cultivating operations in the spring, and the nitrate any time during the growing season in damp weather.—E. H.

The Peat-Moss-litter is excellent, and will grow grand vegetables; it is very strong. If you can get leaf-mould, spent hops from a brewery, or very old rotten tan, any of these are the next best substitutes, and with a little lime and perhaps some of Thomson's Vine and Plant Manure will enable you to grow any kind of vegetables to perfection.—E. C. R.

4322—Diseased Tomato-plants.—The Bordeaux mixture and other things have been at various times recommended for destroying Tomato fungus, and doubtless these have done some good. A mixture of lime and sulphur would probably be as effectual, and these are, moreover, substantially free of salts. A pound of each boiled in 8 gallons of water would make enough wash for a large house. But

assuming, which I think I am justified in doing, that the Tomato disease under glass is due to bad management, especially as regard ventilation, altered conditions with the removal or shortening back of a few of the worse leaves will soon improve matters if the plants are not too far gone. In the latter case get fruits ripened as soon as possible, and pull them up. With perfect ventilation, and the roots properly cared for, there will be no disease.—E. H.

—What kind of disease have the plants got? What are the symptoms? For the most common of Tomato diseases the best treatment is to maintain a dry, airy atmosphere, in water sparingly, and cut off the worst leaves and burn them.—E. C. R.

4325.—Cabbages for market.—I am afraid your Cabbages when smothered with insects will not pay to send to market. Better give them to the pigs and plant the ground with Onions, Spinach, or some other crop.—E. H.

ORCHIDS.

PROMENEAES.

I AM in receipt of flowers of *P. xanthina* from "Jules Godefroy," asking its name, and if he can grow it in a cool-house in the South of London? In answer to this question I may say that usually there is one part of such a structure warmer than another, and if this part is slightly sunny I can assure him he may venture to try some of them. They are Brazilian plants, but they will thrive in a cool-house if a warm spot be selected for them. They are frequently pressed into the genus *Zygopetalum*; but with this arrangement I do not agree, for it appears to me that this latter genus is made a general receptacle for all those plants which are known little or nothing about. *Promenaea* was a genus founded by Lindley upon their being separated from *Maxillaria*, with which they were formerly included. They are showy, small-growing, seldom exceeding a few inches in height, and produce a goodly number of flowers, which last in perfection a long time. I used formerly to grow these plants upon a block of wood with a little Sphagnum Moss, but they required much attention to keep them supplied with water through the resting season, for they do not want drying up to such an extent as to shrivel them. If so treated they are difficult to restore to health and vigour again. Since the introduction of the small earthenware pans for the cultivation of Orchids, I have adopted them for *Promenaea*, potting them in a mixture of good brown peat-fibre or Polypodium fibre and chopped Sphagnum Moss, with good drainage. During the growing season they should have an abundant supply of water, both to their roots and overhead from the syringe, but during the winter just sufficient to keep them plump will be all that is necessary. They should be kept hung up close to the roof glass, and during their season of rest they must not be syringed.

P. XANTHINA.—This is the plant sent by "J. G." under the name of *Maxillaria citrina*, but which appears to be more correctly named *P. xanthina*, for the name *citrina* seems to have originated by mistake. It is a peculiarly bright and handsome species, and was discovered by Gardner nearly sixty years ago, who found it on the Organ Mountains, in Brazil, at some 5,000 feet altitude. It has oval, somewhat four-sided lobes, bearing a pair of short membranous leaves, flowers mostly in pairs, and these are thick and fleshy in texture, measuring about 2 inches across. They are bright citron-yellow, spotted more or less on the side lobes and front of the lip with bright-red.

P. MICROPTERA is a pretty little plant, introduced by Mr. B. S. Williams, of Holloway, and it was named by Reichenbach. I do not know much of it, but I think it is nearly related to the last named species. The sepals and petals are spreading, and of a soft creamy-white, and the lip has the lateral lobes very small, white, with some purple spots on the front lobe, and some transverse bars of crimson near the base.

P. STAVELLOIDES is at once the largest flowered kind known. It is of distinct colour, and the flowers, which are thick and fleshy, last a long time in perfection. It is rather more robust in its growth than those kinds previously named, but rarely exceeds 6 inches in height, and the sepals bear one or two flowers, which are about 2 inches across. The petals and sepals are light green, thickly spotted and spotted with transverse bars of purple, and

the lip has the side lobes of the same colour as the sepals, the intermediate being of a deep blackish-purple. This, although the handsomest of the kinds known, is not very often to be met with in collections; but it is one of the old plants that is well deserving attention from every amateur that cares for Orchids. I would urge my readers to cultivate an acquaintance with a number of these miniature gems. They are easily grown, and do not occupy much space. MATT. BRAMBLE.

CATTLEYA GIGAS.

THE enquiries of "M. J. R." about this plant are not surprising, more especially from what he tells me of the treatment it has received, and if you do not alter the system I fear that you will never bloom it. It will get small by degrees and ultimately die. This plant belongs to the labiate section of the family and comes from New Grenada. It was first introduced to this country in a living state by M. Linden, of Brussels, about twenty-three years ago, although it is reported to have been found the same number of years previously, and is said to be figured in the "Xenia Orchidaceae;" but the figure given appears as if it had been taken from a bad *C. Trianae*—in fact, to me it may represent anything. For this reason I adhere to the Lindenian name here given. Well, this *Cattleya gigas* is a grand flower, the form called *Sanderiana* especially giving the very largest blooms in the whole genus. It is said to grow mostly on the branches of trees, beside streams, or in the vicinity of water, and although the plants are found sometimes growing in the shade it is those that grow with a good exposure to the sun that produce flowers most freely. This is a condition which is recorded of this plant when growing naturally, and the best results come to those who treat it similarly under cultivation. The present year will be a curious one for this plant. It usually blooms about now, but I saw some grand varieties early in May. This species requires to be kept cool after flowering, so as to just nicely ripen its growth, but it should not be allowed to start during the winter, for these growths will not produce flowers. I have found it much the best plan to keep the plant dry for a time after its bulb is made, and at the same time it should have an abundance of light and air. As autumn comes it may be removed to a cooler position, and the moisture in the air will keep the leaves and bulbs in a plump condition, but if there is not moisture enough to do this a little water should be occasionally given. The cool temperature will prevent the eyes hurting, but some time towards the end of the month of February they should be removed to a warmer place, hung up close to the glass, and started growing with vigour. If "M. J. R." will keep his plants as stated above, he may not have flowers next year even, but he will get stronger growth, and from that again he will get bloom. He may rest assured that from growth that is made in winter he never will secure blossom. MATT. BRAMBLE.

A dwarf Bell-flower.—A very pretty Campanula is named *C. grandiflora Mariesi*, and it is dwarf in habit, making a large clump, enriched with deep purple-lilac flowers of hold form. I have sometimes been asked by amateurs the reason of its too-often unsatisfactory condition, and usually it is due to interfering with the roots. This Campanula, sometimes, but not often, called *Platyodon*, is one of those things that hates to be disturbed, and allowed to grow into a haxom mass, and under these conditions it is very handsome, as the flowers are remarkably large for the height of the plant. It will succeed in either the border or the rockery, and flowers freely at this season. I should like to see it more grown.—V. C.

Destroying wasps.—There is such a plague of wasps in many places this year that your readers will perhaps like to hear of a simple means of destroying them. Pour some turpentine down the hole leading to the nest and stop with a turf, or insert the neck of a bottle containing a small quantity—say a cupful. If this is done at night when all are at home the wasps will be found dead next morning. It is a simple but sure remedy if properly applied.—B. C. R.

of the Box to appear above ground. The remainder may be placed in some rich and light soil, and will come out well the following season. If Box has been growing for some time in one place it is necessary to add a little manure at the time of replanting, as it is a very hungry shrub.—P. U.

— This does not grow freely in all classes of soil, a rather light loam suiting it best. In heavy damp clay soils, Box is not suitable for an edging. There are several distinct varieties, but the best for edging is a dwarf kind well known in gardens; unfortunately, this is sometimes mixed with a taller growing sort, which makes a worse edging than if the taller sort was used by itself. Box-edgings must occasionally be taken up and relaid. One yard of a good edging parted out will make three yards when relaid. The ground under the edging must be well dug up, and be trodden and beaten down quite firmly; rake the surface quite level; strain a line tightly where the Box has to be laid, beat down again with the back of a spade. This will leave the mark of the line distinctly upon the surface, and the line may be removed, as it is easier to cut the mark in the soil. Lay the Box in deeply and make very firm.—J. D. E.

4284.—**Carnations, &c.**—Carnations may be distinguished from Pinks by their habit of growth, the grass being of a bolder character, of taller growth, and much less dense; they also begin to bloom just as the Pinks are over and continue right into the winter; Picotees are distinguished by having the outer borders of the petals distinctly edged with colour, pink, rose, crimson, scarlet, vermilion or purple on a white, yellow, or buff ground. Carnations are either selfs (that is of one uniform shade) or flaked and striped with other colours; when boldly marked with longitudinal streaks and splashes they are properly called bizarres; they may have more than two colours in the petals; the yellow ground varieties sometimes being varied with a white central band down each petal in addition to the crimson or purplish flaking.—A. G. BUTLER.

— Carnations and Picotees are arranged in classes after the following manner: Selfs, all of one colour; flakes, petals flaked with rose, scarlet, crimson, or purple, and are all named after each colour—scarlet flakes, rose flakes, &c. Bizarres have two or more colours and are named after the predominating colour—scarlet bizarres, purple bizarres, &c. In Picotees the colour runs round the edges of the petals, only the other parts being clear, and are called red-edged, purple-edged, &c., according to the colour of the edging. What are termed laced Pinks have an edging, sometimes heavy and sometimes lightly laid on, of purple, rose, red, &c. The Border Pinks (white, red, &c.) are chiefly selfs.—E. H.

4324.—**Plants for a sloping garden.**—One would like to know a little more of the situation and its surroundings. In some positions Hollyhocks will be charming, in others they would not suit at all. Again, the White Japanese Anemone, Polygonum cuspidatum are very striking plants for filling in a hollow in the lawn, when hacked up with shrubs. Hardy Fuochias, Roses, and Carnations are always effective in suitable positions, and leave nothing to be desired, or we may fall back upon tender things, such as a mixture of foliage plants, or flowering and foliage plants combined. Any of these in the hands of a person of taste will make a respectable group. The cheapest arrangement will, of course, be the hardy plants, and there is an endless variety to select from to suit every season of the year. Herbaceous and Tree Paeonies, Tritomas, Herbaceous Phloxes, Delphiniums are all splendid things in their way.—E. H.

— It is probable from the description that your garden is shady. If so, you must confine your selection of plants to such things that will live only in shady places. If the position is such as described, plant the Solomon's Seal, Lily of the Valley, Spanish Squills, and Ferns, which will thrive under such conditions. If not shady, you may plant a variety of things. See reply in GARDENING, July 22, 1893, "A house border," a selection of things is given there which will suit your requirements.—C. T.

— Only very hardy plants will thrive in such a position as you describe. Amongst flowering subjects the Herbaceous Spiraeas will do admirably, especially such kinds as *A. latifolia*,

filipendula, and *palmata*. The Japan Anemones will also succeed very well. The Rocky Mountain Columbinas are so hardy that they thrive in sun or shade, if they get plenty of root moisture. The Mimmals would do well in such a position.—J. C. C.

— It would appear that this garden was a good deal shaded. I should therefore recommend you to plant it with Ferns, Solomon's Seal, Lilies of the Valley, Snapdragons, Columbinas, Perennial Phlox, Pansies, and *Violas*.—A. G. BUTLER.

4336.—**Lilies of the Valley.**—It is evident that the crowns are much too crowded together. Probably they have been in the same position several years, and under such circumstances get thoroughly out of condition. It is a mistake to suppose they will go on for ever without some assistance. Probably it is a long time since they received a top-dressing of well-decayed manure. I should advise you to lift them, select the finest crowns for planting in the border, the others being planted elsewhere. Give the soil a good dressing of well-decaying manure, and put the crowns from 9 inches to 1 foot apart. Give water occasionally if the weather is dry.—C. T.

— The crowns of your Lilies being so crowded is the reason why they do not flower. The richness of the soil causes such a vigorous growth that they do not ripen sufficiently to mature flower-buds. You must discontinue using the manure for a year or two. A better plan still will be to thin out the plants at once over half of the space, cutting them out with a strong knife just under the surface. This will let in light and air and harden up the crowns that are left, which will probably bloom next year. The remaining half of the bed should be taken up and transplanted next February. Select the strongest crowns for planting, and give them more room, but do not use any manure.—J. C. C.

— The plants are probably too much crowded, for to such a position and in the soil you mention they usually flower abundantly. I should recommend you to take them up, select the best crowns, and replant them about 8 inches apart, after which I should add a top dressing of well-decayed stable-manure.—A. G. BUTLER.

4327.—**Treatment of Jessamine.**—The plant has evidently made too much growth, and all the vigorous flowering shoots are formed at the top, whereby the flowers are produced there, and none at the bottom. The only remedy would be to cut a number of the old stems down to near their base, leaving sufficient, when nailed in, to cover the wall very thinly. Where the old stems have been cut, young shoots will be produced, which should be nailed in, near the base of the tree, and these will in due course produce flowers, so that the tree may be furnished with bloom, from near the base to the top of the wall. The best time to cut them back is in the early spring, before they start into growth.—J. D. E.

— If your plant is bare at the bottom part you may cut it back in the spring. If not too high, I would bend over the strongest shoots; this will cause them to break into bloom from laterals.—P. U.

— When the growth is much crowded Jessamines do not flower very well. They bloom on the young wood, and it must be thin enough to get ripened. The proper time to prune Jessamines, if flowers are wanted, is in spring; if well thinned out then the new growth will flower freely. It may be necessary to cut out some of the old wood in order to let in air and sunshine to harden the young shoots sufficiently to enable them to form flower-buds.—E. H.

4326.—**Pansy seedlings.**—Plant them out at once. It is not an ideal position for Pansies, but they would succeed well under such conditions. If you put them out at once, they will develop into excellent plants before winter. This is important, and if permitted to remain in a cold frame throughout the winter they do not succeed satisfactorily. Pansies are not the things to coddle in any way. The best soil for them is one that is moderately light, cool, fairly moist, and deep. If allowed a certain amount of shade they will succeed still better, as it is dryness and a hot, scorching sun that promote all kinds of disorders. Plant carefully, and throughout the remainder of the summer and in early autumn water them freely if the weather is dull and dry. They should make good plants for next season.—C. T.

— An east border will do very well for Pansy seedlings. Plant from now to October for spring bloom.—E. H.

— The position would answer fairly well, and, if planted out at once, the seedlings would get well established before the winter and be stronger than if coddled in a frame all next spring.—A. G. BUTLER.

INDOOR PLANTS.

4278.—**Begonias in pots.**—A very important point is to get the tubers thoroughly matured or ripened before the winter sets in. To this end the plants should be turned out-of-doors as soon as the flowers are past their best, choosing a moderately-sheltered and sunny spot. Gradually reduce the supply of water until by the time the leaves turn yellow and fall the soil is quite dry; hose them about the end of September, or before there is more frost than just enough to touch the tops. I believe the best plan is to shake the tubers out of the soil, and keep them in half dry Cocoa-nut-fibre; this should be done as soon as the stems have quite fallen away. Keep them where no frost can penetrate, but not in a very warm place—40 degs. to 45 degs. is the best temperature—and take care that they do not become either at all wet or dry enough to become limp or shrivel, and they will be all right.—B. C. R.

4308.—**Forcing-beds in a stove.**—Neither tank nor water is necessary. Simply enclose a sufficient length of the three pipes (one would scarcely be enough, though two might do) with brickwork, fix some wooden or iron bearers across, 18 inches apart, and lay thereon one or more sheets of the galvanised corrugated iron. Upon this place 3 inches or 4 inches of fresh Cocos-nut-fibre, which keep moist, and if necessary cover the whole in (over the outtings, &c.) with a light sash or two, or come loose sheets of glass, laid on a light framework of wood. This will answer your purpose quite so well as the most costly tanks, &c.—B. C. R.

4332.—**Passion-flower.**—The woolly insect is a species of coccus, and allied to the "American blight." If you paint it thoroughly with sweet-oil the insects in the woolly covering will be killed. Layering would be more certain than taking cuttings, but, as a rule, Passion-flowers throw up numerous shoots from their roots which can be taken up with root attached and separately planted. Such shoots invariably grow into vigorous plants, but it will be two or three years before they can be expected to bloom.—A. G. BUTLER.

— Your plant has evidently got a very bad insect pest called mealy-bug. It is extremely difficult to eradicate, especially from large and strong-growing climbers in a conservatory. Apply any of the numerous insecticides advertised in these pages, and use it freely. Cold water syringed on it with considerable force will also kill a great number, but I fear you will never quite eradicate it from a strong Passion-flower. Cuttings of young growth about 4 inches long will strike readily in a gentle heat if kept close for a few weeks. Choose side growths as much as possible, and use plenty of sharp sand in the compost.—P. U.

— The woolly sort of insect is most likely the mealy-bug, and it is not very easily got rid of. The best thing to do would be to cut the plant well down, so that the part remaining may easily be washed with soft-soapy water. Even when the stems are well washed the insects will appear again the following season; but if they are watched and destroyed as they show themselves they may thus be got rid of. Cuttings put in early in the autumn will form roots, but all such hard-wooded plants ought to be placed in handlights or under bell-glasses to form roots.—J. D. E.

4323.—**Musas from seed.**—I have never raised Musas from seed, and cannot say whether good seeds are difficult or the reverse to obtain. But there is not the slightest difficulty in obtaining plenty of plants from offsets or suckers. When I grew *Musa Cavendishii* somewhat largely plenty of suckers always grew away from the base of the fruiting plants, and these taken off with roots would make fruiting plants in from eighteen months to two years, sometimes less—but I am speaking now of small offsets only.—E. H.

4299.—**Double and Single Begonias.**—A great deal depends upon the varieties, the old-fashioned kinds making a far more free and rapid growth than the new dwarf-habited varieties, with erect flowers and thick, broad foliage; but if the plants were raised, as it appears from the photograph, inserted in March,

they have made a remarkably free and robust growth, and must have had the best of treatment throughout. Such specimens are seldom seen even in London or anywhere else, and when grown from three-year-old tubers instead of cuttings, if in good-sized pots—10 inches or 12 inches—they should continue to bloom until the middle or end of September at least, especially if the vigor is kept up by the use of weak liquid-manure, soft-water, &c., given once or twice weekly.—B. C. R.

FRAGRANT STOVE PLANTS.

BEAUMONTIA GRANDIFLORA is figured here with. This is a famous genus of Dogbanes, but now neither this nor any of the genus is often seen—in fact, there seems to be quite a lack of interest in many of the famous old stove plants. *Beaumontia grandiflora* was introduced many years ago, and the last time I remember to have seen it in flower was at Syon House, Isinworth, the seat of the Duke of Northumberland, about forty years since. At that time splendid old plants were to be seen blooming in this collection. Its trumpet-shaped blooms are large, and pure-white. It succeeds best when planted out in a well-drained border, and is more likely to flower when so treated. It should have an intermediate stove to grow in, one in which the temperature does not fall below 50 degs. during the winter will suit it admirably. The soil should be good turfy loam chopped up roughly with the spade, a little peat or leaf-mould with some sharp sand added. The *Beaumontia* may be grown in pots in this soil until it gets large enough to plant out in the border. Amongst the most fragrant of stove flowers are the following—

THE JASMINES are especially noteworthy in this respect, and one of the more pronounced is *J. Sambac* fl. pl., which comes from the East Indies; its exquisitely scented flowers are ivory-white in colour and double. They are borne on short, lateral shoots, usually furnished with a few small leaves, that proceed from the axil of the leaves on the stronger growths, which in a healthy plant generally keep on blooming all through the summer and autumn so long as its growth is being made; this is an advantage, as it admits of almost every bit of bloom it makes being utilised. Cuttings strike easily when they can be obtained with some freedom of growth in them, but the shoots that are disposed to form flowers as soon as they have attained 1 inch or 2 inches in length, even if they make roots, are a long time before they can be induced to grow freely. In the spring, about the beginning of April, cuttings of the right description may generally be had; these should be a few inches in length, but not with the wood too hard or matured; take them off with a heel and put them singly into small pots three parts filled with a mixture of three-fourths sand to one of loam, the surface all sand; keep moist, close, and shaded in a temperature of 70 degs., or a little more. They will strike in a few weeks, when use them to bear the full air of the house and stand them on a shelf or some other moderately light place. When a fair quantity of roots is made move the plants into 3-inch or 4-inch pots, using good turfy loam with some sand; they will now do best with a brisk stove heat, giving air in the day-time with a little shade when the sun is powerful, syringing daily, maintaining a moderately moist atmosphere. After a few inches of growth have been made, pinch out the points of the shoots, for the plant has naturally a thin, erect habit of growth, and to induce the formation of soft-leafed branches it is necessary to resort to stopping, although it is by no means desirable to attempt to restrict it to a bush-like form. It is best grown round a pillar, or wound round a few tall sticks inserted just within the pot; being a spare rooter, it must not have too much root room, either in a pot or planted out. In July move them into pots 3 inches or 4 inches larger, and again stop the shoots. Treat generally through the summer as recommended until the middle of September, when cease shading, give more air, less moisture in the atmosphere and reduce the temperature; during the winter 60 degs. or 65 degs. in the night will be enough, only just keeping the soil a little moist. Towards the end of February increase the warmth, and when growth has fairly begun again pinch out the points of the shoots, and move to pots 2 inches

or 3 inches larger. In the matter of heat, moisture, air, and shade treat as in the preceding chapter; they will this season bloom from all the growths they make. When planted out, the soil to which their roots have access must be limited to a small space, or it will meet likely get sour. If confined to pots, all they need in subsequent years is to give more room as it is wanted, not attempting to shake out the plants or disturb the roots more than can be avoided. A little manure-water in a weak state will be an assistance. The plants will last for many years. There is a single-flowered form of this *Jasmine* differing little in its appearance except in the flowers. It succeeds under similar treatment to the kind under notice. This *Jasmine* is liable to the attacks of most insects that affect plants grown in heat. Thrips and red-spider, which are partial to the leaves, can be kept down by syringing. If any insects of a worse description, such as scale or mealy-bug, make their appearance, sponge with insecticide, finishing with clean water.

THE *STEPHANOTIS* is another favourite. It is as much grown as almost any flower for its delicious fragrance. It will grow in either peat



Beaumontia grandiflora.

or loam, and strike freely from cuttings made of the preceding season's shoots, and portions that have not got too hard should be used. If cuttings consisting of a couple of joints of these are, during the winter, put in thickly in 5-inch or 6-inch pots and stood in a temperature of 60 degs., they will callus over in a few weeks, when they may have 10 degs. more warmth, which will enable them to root freely, or young shoots such as break from the old stems in spring may be taken off, when 8 inches or 9 inches long, with a heel of the old wood. These, if kept a little close and in a temperature similar to that recommended for cuttings of the mature wood, will root directly. When well rooted put them singly in 4-inch pots in good fibrous loam, with sand added proportionate to the nature of the soil. They will grow away if kept in a temperature of 60 degs. or 65 degs. in the night, with a rise by day. *Stephanotis floribunda* is of twining habit, and as soon as the plants begin to grow each will require a stick as support. When the shoots have reached a couple of feet in height remove two or three of the top joints to cause the production of two or more growths. The plant comes from Madagascar, and can stand a good amount of heat; consequently, through the summer months it will bear a temperature of 85 degs. to 70 degs. by night, with from 70 degs. to 80 degs. in the day. It does best with a liberal admission of air in the day-time, so as to permit of the air of the house getting drier than if less is given. It requires no shade further than is found necessary to keep the leaves from scorching. If by the beginning of July

the pots are found full of roots, move into others a couple of inches larger. Syringe the plants in the afternoon during the growing season until September, when give more air and reduce the root moisture as well. From 55 degs. to 60 degs. night temperature will answer through the winter, with just as much moisture in the soil as will keep the leaves from shrivelling. About the beginning of March raise the temperature, and increase it still further as the sun gets warmer. Give more water to the roots, and as soon as growth has commenced move into pots 4 inches or 5 inches larger, using loam, which should be of a good turfy character, and such as will not soon decompose. Ram the soil quite firm, and fix trellises on the pots whereon to train the shoots, or run them up wires or strings over the roof. Before the shoots begin to grow stop the plants or cause them to break. When the blooming is over the shoots may be shortened back, and pots from 4 inches to 6 inches larger should be given. The pots to which the plants were last season moved will be large enough for the next two years; manure-water should be given at the time of active growth. Cut the shoots back so far as necessary after blooming, as advised the preceding season, and treat as before. The plants will last for many years if a few inches of the surface soil is removed and replaced with new. I have spoken of their being grown on trellises in specimen fashion, but they do better close under the roof near to the glass, and even if they are wanted to bloom on the trellises the shoots should be trained near the glass during the growing season, and then wound round the trellis when fully matured. But the plant is never seen to so much advantage as where permanently trained under the roof, and if, in addition, it can be planted out in a bed of well-prepared soil 4 feet or 5 feet square it will keep on growing and flowering for many years. Where there is plenty of room for the head to run a plant will continue blooming for months. Scale and mealy-bug are very partial to it. Should these affect it, a thorough dressing with insecticide ought to be given when the plants are in a dormant state during the winter, and the dressing repeated, so as to make sure of destroying both the mature insects and also their eggs.

AMAZON LILY (*EUCHARIS AMAZONICA*) is a very fragrant flower, and—in large gardens only, of course—a span-roofed house is often devoted to them. I think that the old drying system is a great mistake in the culture of this plant, and responsible for much of the "Eucharis mite" that we hear about. My plants, which are very large, and in 18-inch pots, are placed in a house of which the temperature is 80 degs. They are optionally syringed with clean, soft water, and shaded from hot sun. Potting is only done once in five or six years, and the soil used is sound loam, with sufficient broken charcoal and sand to render it porous. This, together with an occasional watering with manure-water when making growth after flowering, seems to meet their requirements exactly. Get good, healthy plants to commence with.

THE *GARDENIA* is very popular, but not so much as formerly. The plants must have a brisk, moist temperature. During the growing season place them in the closest part of the stove, and well supply them with liquid-manure. When the growth is complete, and the flower-buds forming, expose them to full air, and for months I keep them in a cool-house with *Camelias*. When bloom is required they are again returned to the warm corner of the stove. The only drawback is that insect pests of every kind attack them. Mealy-bug, white and brown-scale, thrips, and red-spider each assail them. The best remedy for these pests is to lay the plants upon their sides, and then syringe them, when in a dormant state, with water heated to 120 degs. Then follow with a dressing of some approved insecticide. *G. radicans* is a popular kind. It is dwarf, free-blooming, not very difficult to grow, and very fragrant; hence its name of Cape *Jasmine*. There are many other fragrant stove flowers, but the chief kinds have been mentioned. *Hedychium* are very sweetly scented; also the *Crinum*s, but they are not so freely grown as the former. W.

4328. — Cutting back Oleanders.—Oleanders have a tendency to make lanky growth, and in a few years become very unsightly. There are two ways to keep them in

order—either to cut down the old plants or plant young ones. They may be propagated from cuttings put in sandy soil about the end of summer, and kept under bell-glasses or band-lights until they have formed roots. If the plants flower early they should be cut down at once, and as soon as they start into growth repeat them if this be necessary, and if they make good growth by the end of the season they may be expected to flower very well next year. If cut down now there would scarcely be time for them to make good flowering growths for next year in a cold greenhouse. However, it would be better to cut the plant down at once, as there is yet time to make some growth.—J. D. E.

— Nerium Oleander may be cut back at any time, but it is almost always done to a certain extent of loss. I would wait until the flower-buds are well formed, then cut out the shoots containing these, and strike them in a hot greenhouse or stove. After this you could cut back your plant as much as you liked, and it would be sure to break well. The hlooms upon the outtings would in the meantime open and give you a nice display.—E. U.

— If cut back now they will not flower next year if all the shoots are cut; but if the plant is a large one the longest shoots may be taken, and probably those left unshortened will. Plants must be cut back early in spring, and be started in heat to flower the next year.—E. H.

4303.—Pelargonium "Master Christine."—I have grown Christine, and after it Master Christine. Both are almost identical in leaf and bloom. Bright yellow-green would be a tolerably good description—certainly no trace of a zone in either kind. The flowers are bright-pink, and produced very freely. The plant is a first-rate bedder, good in habit, rather dwarf, especially Master Christine, and impatient of moisture. Must be kept rather dry. Too apt to run to seed, but seedlings from them follow very much the parent plant—at least, I repeatedly found them do so.—FLORIST.

4277.—Winter flowers.—Try the following: Chinese Primules (single and double), P. ohonica, Cinerarias, Persian Cyclamens, Camellias, Roses, Zonal Pelargoniums (Geraniums), Abutilons, Bouvardias, Cape Heaths (Erica byemalis and others), Epacris in variety, Correas, Chrysanthemums (late flowering vars), Salvias, Heliotropes, Marguerites (Paris Daisy), Roman and other Hyacinths, Tulips, Narcissus of sorts, Tree Carnations, and, in the coolest positions, Christmas Roses and Violets.—B. C. R.

— The following are useful winter flowers: Primulas, double and single, including P. ohonica, Cyclamens, Cinerarias, Chrysanthemums, Begonia insignis, Arm Lilies, Zonal Cereoniums, Coronilla glauca, and its variegated variety. Ivy-leaved Geranium Mademoiselle, Bouvardia, Geniste fragrans, Erica gracilis autumnalis, E. byemalis, E. Wilmoreana, Abutilons in variety, Tree Carnations, and bulbs in variety, including Freesias, Roman and other Hyacinths, Tulips, &c.—E. H.

4339.—Carnations in pots.—The old plants of Carnations now in 6-inch or 32 sized pots may be kept in these until the spring, and be planted in 8-inch in March. They may be wintered either in the cold frame or the unheated greenhouse, and it is possible they may do much better than those which have been taken from the parent plants and have been re-potted. The young plants should be potted in small 60's when they are taken from the parent plants, or they may be planted out where they are to flower in the open garden. If rooted layers can be taken off and be planted out so early as August they will have ample time to become established before the winter.—J. D. E.

Hyacinths in Moss.—I much wonder that no one has recommended growing Hyacinths in Moss. I grow a number every year thus, and they produce very fine hlooms. One, two, or three bulbs in an old china bowl, cascade-pot, or even empty jam-jar, make a lovely show. The Moss must be packed very tightly at the bottom, and kept damp after the roots have started. I give doses of weak liquid-manure occasionally, and the superabundant moisture must be poured off at times.—L. T. F.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruits and vegetables for drawing. The drawings so made will be engraved in the best manner, and will appear in the next issue of GARDENING ILLUSTRATED.

FRUIT.

VARIETIES OF GOOSEBERRIES.

WHEN there are hundreds of varieties of Gooseberries to select from, and probably the grower in many instances does not want more than half a dozen, he is at a loss when he scans the list to know what is best, and often gets sorted out at all untable. With so many to select from, the grower should get both early and late kinds. To get a long succession planting in different positions is necessary, and if a north wall can be spared for a few cordon trees, there is no surer crop than the late Gooseberries. This season the trees suffered badly from spring frosts, but these on a wall escaped, being later and protected from the cold winds. On a north wall as cordons the fruits can be had much later, and the trees get the cool treatment they so much like; they are also so easily protected from birds that I often wonder that more trees are not grown in this way, as often a bare north wall may be planted with a few trees to furnish the bottom of a wall with taller fruit trees at the top. Gooseberries do well as cordons trained to iron rods or stout Larch poles; they require so little attention grown in this way, occupying little room, and are ornamental in a fruiting state. Gooseberries well looked after are a paying crop, as they may be used in a green state, and when ripe with protection from birds hang a long time. When grown as cordons on walls they are more readily protected from caterpillars than in a bush state, and if a few loads of manure are placed over the roots as a mulch in the early part of the year or in December, raking away the old material, caterpillars are rarely troublesome, and the removal of the old loose soil removes any insect larvae that may exist and the trees get the feeding required. These trees often suffer from want of feeding, as in many gardens there is no thought as to providing bushes with manure, but when given annually the size and quality of the crop are superior. I have seen very old hedges that had been on the same ground for many years lifted and replanted, and with the roots in a good condition the trees have given wonderful crops. Of course I do not advise planting old trees, as young ones with good culture soon give a heavy crop of fruit, but I would recommend more feeding in poor soils after the trees get into a bearing state. Those who require Gooseberries for preserving cannot do better than grow Red Warrington and Ironmonger. The former is a fine Gooseberry for a north wall, and if kept spurred in closely does well. In the white class, Whitesmith, King of Trumps, and Aline are good, whilst Industry, Conquering Hero, Forester, and Rough Red are good reliable kinds in the reds; Leader, Early Sulphur, Yellow Champagne, and Tiger are good yellows; Green Ocoocyte, Green Overall, Surprise, and Telegraph in the green varieties. In the matter of flavour many of the small fruits, such as Pitmaston Green Gage, Red Champagne, Early Green, Heiry Early Red, Heiry Bright Venus, and Early Sulphur are beautiful fruits for flavour. In this small selection I have only given a few varieties, but sufficient for most purposes, unless required for exhibition. For the latter purpose size is essential; for early gathering in a green state a large early Gooseberry is best. When a wall or fence is devoted to this fruit there is no difficulty in preserving the huds in the spring by netting over the bushes. H.

Apple from cuttings.—I venture to send for your inspection a few specimens of Apples grown from cuttings that had been sown off and simply stuck into the ground. Of course, they are not yet fully developed, but even now (to me at least) they are very interesting. No. 1 is sent in of a local kind called "Tulloch Ans," or "Laesies." Twelve outtings were put in over four years ago, and ten out of the twelve have borne fruit every year, although only about 4 feet high. One of these has now thirty-six good fruits. No. 2 is called here "Bitter Swouts." The outtings were put in at the same time as those of the other, and have fruited every year, bearing now a fine crop. Both of these are free bearers. Of Annie Bligh's outtings were put in, only two surviving to bear

fruit. The Apples are larger than on the old tree, yet they are few in number.—W. TREADOR, Rosera.

4320.—Manure for fruit-trees.—There are special manures suitable for fruit-trees, and perhaps one of the simplest and best is bone-meal. This used in conjunction with stable-manure will answer every purpose for all kinds of fruit. The bone-meal should be forked into the border, and the stable-manure used on the surface as a mulch. Most of the chemical manures are, I think, too expensive. Possibly if the demand was larger the price would be lower, and in time these things may right themselves.—E. H.

— Farmer's manure is as good as anything for fruit-trees. Powdered or crushed bones are excellent, especially for stone fruits. It is perhaps best to apply the manure to the surface, as this encourages the roots to the top. I do not care to use artificial manures for fruit-trees, as they have a tendency to encourage the development of too much and too vigorous young wood.—J. D. E.

4333.—Pears.—It is unfortunate that you want Pears for a badly-drained clay soil, as the fruit is liable to crack, especially in a dry season. The Jargonelle is as likely to succeed on the wall as any other. Citron des Carmes is a Pear that ripens in August. The tree makes a good standard, but under all conditions the fruit generally cracks just as it is on the point of ripening. Williams' Bon Obretien does well as a standard, and ripens in September. Louise Bonne of Jersey follows in October, and the tree makes a good standard.—J. C. C.

— The following are good, hardy, free-bearing sorts: Bazel, Angouleme (plant on mound and keep the roots out of the clay), Mme. Treve, Windsor, and Williams' Bon Obretien.—E. H.

4269.—An old Apple-tree.—It is rather difficult to say what is the best thing to be done with an old Apple-tree that does not bear well. The tree may be in an impoverished soil, and if so, might perhaps respond to generous treatment in the shape of manure, liquid or otherwise. Or if making too much wood, backing the roots might restore it to fruitfulness, or if the tree is worn out, the best course will be to grub it up, refresh the site with manure and some good soil, and plant a young tree.—E. H.

4280.—Fig-trees under glass.—Unless the roots of Fig-trees are confined, they frequently make a lot of wood, which in a cool-house does not ripen well. If the roots can be got at and lifted and a lot of brick-rubble, mixed with old plaster, rammed in, they will do better. Keep the growth thin by removing weak shoots. If the house is heated the growth should be regularly pinched when half-a-dozen leaves have been made. If the roots are under control liquid-manure may be given freely when the fruits begin their second swelling, and rich mulchings are beneficial in keeping the roots near the surface. Figs should be trained in a light position. They are sometimes planted under Vines, but they do not under such circumstances get justice.—E. H.

BEGONIAS PLANTED OUT.

By my experience these favourites and most charming plants succeed much better in the open ground than under glass, and with a tithe of the care and attention required by pot-plants. Of course, where the atmosphere is at all smoky, the choicer kinds must be kept indoors, where the flowers will come so much finer and cleaner than outside; but with the advantage of a pure air, and especially if this is naturally somewhat moist, they certainly grow faster and stronger, and develop a dwarf, sturdy habit, with a thickness of leaf and petal that is very seldom found among plants grown under glass. They are not at all particular as to soil, and though a moderately light steeple of a preferably loamy character is perhaps more suitable, I find them thrive remarkably in the stiff and cold clayey loam that prevails about here. Whatever the soil, it should be well worked and made tolerably rich by the addition of old hot-bed manure, decayed spent Hops, leaf-mould, or the like, and a most important point is to keep the soil regularly moist—at least, until the young plants are thoroughly established and strong. If the seedlings are allowed to become really dry twice or thrice only they step growing altogether, and in some cases never do any good subsequently. A bed of quite small plants here, from tiny tubers of last year, planted out the end of June, are now nearly of a good size, and just expanding their first blossoms. E. C. R.

HOUSE & WINDOW GARDENING.

PALMS AND CYCADS FOR ROOMS.

PALMS and such a Cycad as *C. revoluta* (here figured) are excellent plants for rooms when a proper selection is made. Several of the Palms are practically hardy—at least, they will live in a temperature of from 40 degs. to 50 degs. The Cycad looks well under these conditions, and is a change from the various things used in windows. The great point always is not to give water too freely, or allow it to stand in the saucers. When watering give plenty at one time, not dribble, whilst the syringe should be brought into requisition to remove dust and dirt from the foliage. A good loamy soil, with a few crocks in each pot, suits this class. *Chamaerops Fortunei* amongst Palms is well worth a note. If the house is large, it is a fine Palm for standing about in halls, where it has a fine aspect by reason of the bold, striking character of the foliage. *Phoenix dactylifera* and *P. reclinata* are very useful, also *Areca luteocens*, which is a remarkably handsome Palm, the foliage delicate-green, and the stems quite of a yellow colour. Then one may include also *Areca sapida*, *A. Baueri*, *Latania borbonica*, and the *Kentias*. Several of them are very large growing Palms,

compost of two parts turfy loam to one of leaf-mould, with a little soot and sand. The corm should be placed an inch or two below the surface (leaving room for a rich top-dressing in June), and the pots can stand in a back yard, on a thick bed of ashes, or on the leads, if necessary, though preferably in a garden frame. Here they will soon throw up their sturdy spikes of foliage, to be followed during the summer with tall sprays of blossom of every lovely shade, from palest lemon to deepest maroon, through rose-pink, carmine, scarlet, crimson, and terra-cotta. In fact, the exquisite hues of Gladioli are endless in variety; many of the flowers being blotched and spotted with deeper colour too. Nothing can be more decorative for a drawing-room, especially when well grouped with foliage plants and Ferns, and the plants can be lifted in as soon as the first bloom is open, after which they will not fail to produce all their blossoms without much sunshine. Amongst the Nancieans group some of the finest are as follows: Harry Veitch (pale-yellow and maroon, with crimson spots), President Carnot (with enormous carmine petals, spots blotched with pale-apricot and deep-crimson), A. de la Devanays (salmon-coloured, with orange spots), Maurios Vilmorin (mauve, with purple and yellow blotches), P. Duchartre

had, for this too bears slight forcing, by which its time of blooming is put forward to April, while in the open air it blossoms in June and July (according to the aspect and position of the border), thus covering the time until the open-air "Harrisii" Lilies and the speciosum group are open in July and August. Tiger Lilies (*L. tigrinum*), *L. auratum*, and *L. neilgherrense* can be had up to the end of November (the bulbs for late work being grown entirely in the shade of a north wall, when specially grown pots of the

USEFUL HARRISII LILY are the only representatives of the family until spring comes again. Most Lilies are, however, best grown without heat, a cold frame, with 6 inches of ashes at the bottom, being the most suitable place in which to cultivate them, although it is possible to do without even this slight protection, by covering the pots deeply with ashes in winter, in a back yard, or in boxes of ashes on the leads. Lilies do well in cities, even in the smoke of London, and are therefore especially worth a trial by town-dwellers. Their special needs in cultivation are as follows: First, that the bulbs should be potted immediately on arrival in this country, for which reason they should be ordered beforehand, when the horticulturist will forward them as they arrive. (N.B.—The first consignments of Lily-bulbs are usually not properly ripened, therefore, those which arrive a month later are to be preferred). A 6-inch or 7-inch pot is usually large enough for a single bulb, and these must be well-drained (the crock being covered with Moss, dipped in soot), and half-filled with a compost consisting of two-parts turfy loam to one of leaf-mould, with a little very old hot-bed stuff, soot, and sand. This compost can be procured from a horticulturist if necessary, and should be used in a half-dry state, the bulbs being heat without water through the winter. Having placed the bulb on the soil, low down in the pot, fill it up with the same until within 2 inches of the top, leaving this space for top-dressing with rich soil in the spring. The potted bulbs must now be placed in a cold frame or box of ashes and covered to the depth of 2 inches with fine dry ashes, when they will need nothing more until the spring, when they should be relieved of their covering, and watered when thoroughly dry. Air they must have as much as possible, and as the stems grow the top-dressing of old manure and a little soot may be applied to induce fine surface-roots, on which their beauty largely depends. Green-fly must be kept at bay by sponging or syringing, for it is very apt to attack Lilies in their earlier stages, and the pots should be shaded from great heat in the summer and watered regularly. One after the other the plants will open their buds, when they can be removed to the sitting-room, where they will form a charming decorative group with Ferns and foliage plants. On the care of Lilies after blooming depends their future value, and those who wish to cultivate the same bulbs during the following season must cut off the blossoms directly they fade, leaving both stems and leaves to die away gradually, the pot being placed out-of-doors in a sunny situation and supplied with water as usual, though not so frequently as when in full growth. Directly the last of the foliage is dead the Lily should be given a shift into a pot two sizes larger and treated in the same way as when it was first procured.

I. L. R.

GLADIOLI FOR A ROOM.

THESE splendid flowers have been so wonderfully improved of late years by hybridisation that few plants can now compare with their magnificent colouring and large flowers, borne on stately spikes. The newest variety of all, *Gladiolus Nancieanus*, raised by M. Lemoine, of Nancy, being a distinct type, with blossoms from 5 inches to 6 inches across, each bearing volupty blotches of rich and often contrasting colour on two of its petals, the flowers being borne on branching spikes in great profusion. These Gladioli are as hardy as the old *gandavensis* section, living out-of-doors in a sheltered spot; but they are especially suitable for pot-culture, as their fine blooms open even better in the room than in the garden, where the hot sun is apt to fade the lower blossoms before the upper flowers are open, which is not so much the case where a semi-shade is provided, so that the whole spike is open at one time. Nothing can be easier than their cultivation in pots, for they require no greenhouse, and no heat, the bulbs, which should be taken up from the ground in October, and kept in sand in a cellar or other frost-proof place until the end of February, are then placed singly, each in a pot measuring from 6 inches to 7 inches across (according to the size of the corm), placing careful drainage at the bottom, and using a light

(scarlet, toning to orange, with maroon spots), Charles Ballet (deep-purple, with white and maroon bands and blotches).—I. L. R.

LILIES FOR A ROOM.

THERE are no finer decorative plants than the Lilliums, and as those are so easily grown out-of-doors or in a frame, they should be seen much more frequently than they are in our drawing-rooms. It is not difficult to have a continuous supply of these splendid flowers from early spring till late autumn, and even in winter those who have a heated greenhouse may cultivate the beautiful White Trumpet Lily (*L. Harrisii*), which bears forcing better than most. Some of the finest in shape and colour are the speciosum family, *Lilium speciosum*, *rossum*, and *rubrum* being delicately tinted and spotted with clear crimson, while *L. speciosum Kretzeri* is a pure white Lily, quite silvery in effect, and very beautiful. The well-known *Lilium auratum*, the Golden-rayed Lily of Japan, is perhaps the most stately of the tribe, and this is fairly hardy, so that it can be grown in pots even by those who have no greenhouse. *Lilium tigrinum splendens* is another magnificent plant, tall and stately, with large orange flowers, handsomely spotted. This Lily comes in after the speciosum group are over, and can be had in bloom by retarding a few late specimens till November. Perhaps the following list of some of the best Lilies for pot cultivation may be of use in their order of flowering. After the lovely *Madonna Lily* (*L. candidum*), may be

Spiraea palmata.—This *Spiraea* is so beautiful in masses and by the waterside that it should be made careful note of by all who have streams, ponds, or lakes which are left unadorned by flowers at their margins. It is one of the finest of all hardy plants, but seldom put to its best use, which is for fringing the margin of lakes. Under good treatment it grows nearly or quite 4 feet in height, proving quite hardy, and enjoying heat a rich, well-manured, foamy soil. I wish to bring out in particular its usefulness for the edges of water, but it may be naturalized in the wilder parts of the garden, where, if grown in large groups, the effect of its crimson flowers is distinct and attractive. It is a pity to grow such a fine hardy plant so largely in pots and neglect it in the garden proper, to which it is capable of giving much beauty.

I. L. R.



Cycas revoluta as a room plant.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the EDITOR OF GARDENING, 37, Southamption-street, Covent-garden, London. Letters on business should be sent to the PUBLISHERS. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communications.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appeared.

4254.—Roses in small pots.—Will H.P. Roses grow and flower well in 6-inch or 8-inch pots?—P. R.

4255.—Cholera ternata.—I should be very pleased if some of your readers would give me particulars about this shrub?—R. C. S.

4256.—Myrsiphyllum asparagoides.—Please tell me how to grow this plant, and give also description of it, as it is quite new to me?—B. C. S.

4257.—Potignonette.—I should be obliged if you would tell me how to grow Potignonette in pots, like the market growers deal with?—D. D. AEROSTAT.

4258.—Herbaceous plants.—I should feel much obliged if you would explain what is meant by herbaceous plants, and indicate a few of the best and state flowering season?—H. F.

4259.—Carnation and Ploetea-seeds.—I have had a packet of Carnation and Ploetea-seeds sent me. Could I sow them now with any hope of their flowering next year?—H. F.

4260.—Strawberry border.—I shall be greatly obliged if any of your readers will give me directions for laying down a new Strawberry border, also hints on their culture?—STAMP.

4261.—Vines in pots.—I have some young Vines in 7-inch pots, which were struck the beginning of this year. Should they be potted again; or will they fruit in such small pots?—L. M.

4262.—Grapes splitting.—What is the cause of Grapes splitting? I have a Gros Colman Vine in a pot, and some of the berries as they begin to turn colour are splitting?—L. M.

4263.—Show Roses.—What are the best twenty-four H.P. Roses for show, and how should I prepare them for exhibition? Also the best twigs for pot culture? What manures do Roses require?—P. A.

4264.—Rose Fortune's Yellow.—I have a Rose Fortune's Yellow which grows well but does not flower. Does it require any particular treatment? It has a south aspect, and is trained up a verandah.—A. W.

4265.—Stephanotis floribunda.—I should be much obliged if anyone would give me some information as to a plant of Stephanotis which is showing fruit. Is this a rare occurrence in this country, and is the plant edible?—P. McLEARN, Ireland.

4266.—Frogs.—I shall be glad of any information about spawn from the small tree frog? I have a saucer of it in my greenhouse. I am anxious to know what food and treatment the tadpoles require and when they develop into green frogs?—C. B. S.

4267.—Christmas Roses.—Will someone kindly tell me whether I could grow Christmas Roses in a London garden to bloom in Christmas or in a conservatory (north-west aspect), and what would be the treatment? Locality, Kensington.—E. R.

4268.—Melons.—I am trying to grow Melons, and although my plants are quite healthy I find when the fruit gets about the size of a large Gooseberry they begin to rot at the eye. I am quite an amateur gardener, and shall be glad of advice.—A. C. PERRINS.

4269.—Destroying Nettles.—How can I get rid of a quantity of Nettles which have been growing for years in a bed of Rhododendron? I have tried to pull them up, but they grow again directly. I do not want to disturb the Rhododendron.—INEXPERIENCE.

4270.—Manure.—Being short of ordinary manure, would your correspondents kindly inform me what is the best artificial to use for kitchen garden purposes? Can one use Peat-Moss-litter from the stables with any good results? I should add soil fairly light.—J. N. B.

4271.—Border of Roses.—I have a border which has been utterly neglected and is very old, the good Roses having died and the Manetti stocks grown up nearly 6 feet. What is the best thing to do, to cut them back for bedding or throw them away and plant afresh?—NAPOLI.

4272.—Cutting back Hollies.—I have two clipped Holly-trees about 20 feet high, which are too close to the house and rather obtrusive in growth. I should like to cut about two-thirds of them back. Can this be safely done, and at what period of the year?—JANUAR.

4273.—Clematis attacked by mildew.—Some, but not all, the Clematis on front of my house, facing south, are suffering from mildew. A fine old Wistaria is trained along the south front over them. Can this be in any way the cause of the same?—AN OLD GARDENER.

4274.—Neapolitan Violets.—Will anyone tell me the best thing to do with Neapolitan Violets that were brought from Milao last spring and planted in the open

and died away during the great drought? They are now pushing up young leaves. Should I put them in a frame to ensure blooms?—NAPOLI.

4275.—Tomatoes curling up.—I should be obliged if anyone will tell me why the leaves of my Tomatoes in greenhouses are beginning to curl up? There is a good lot of fruit on the plants, plenty of root-room, and they have had proper quantity of water. The lower leaves are all pinched back to the first joint.—E. GAZZ.

4276.—Best Self Carnation.—I am pleased to find the cause of the Self Carnation advocated in GARDENING. "A. H." would confer a favour on many of your readers by giving the names of a dozen or more of the best selfs for the garden. They must be non-bursters, of robust habit, good form, and colour.—R. T. L.

4277.—Clematis dying.—Two fine purple Clematises of mine appear to have died this year. They grew splendidly and were covered with blooms, and just as they (the blooms) were about to open they suddenly began to wither and died rapidly, for no reason that I can discover. Can anyone explain this or tell me what to do in the future?—C. S. O.

4278.—Building a Tomato-house.—I am going to build a lean-to Tomato-house. How wide and how deep should the bed be? I want to get large fruit. Should the leaves be stopped at a joint or let to grow? I have some fruiting plants in small pots, and some in larger pots; they are not doing so well as those in small pots. I keep all side-shoots out?—CONSTANT READER.

4279.—Rose Reine Marie Henriette.—I purchased the above roses this spring, and planted it in a cool greenhouse border. It made four or five shoots about 3 feet in length. What should be done to these as regards pruning? Should they be trained in at full length, or should they be cut back? If so, to what length and when? Also is this a good Rose for such a house?—EMIN.

4280.—Early Strawberries under glass frames without heat.—In the place I am taking at Mitcham I shall have a south-west slope, and think Strawberries would do it. What is the best sort for early treatment in this way? When should plants be put in, and when should frames be put over them? Is there any advantage in using pots in preference to planting in ground?—ASH VALM.

4281.—Vines in cool-house.—I have three Vines in cool-house, and some time ago something took the foliage and began to turn them yellow. The leaves looked scorched. I regarded it as red-spider, so I began to syringe every night with clear water, and have done so until now. Should I keep on syringing them now, as the fruit is beginning to colour? What should I do to the Vines when the fruit is off to cleanse them thoroughly?—H. W.

4282.—Laying out a garden.—I have an acre of land in south Durham on which I have built a house, and would be very grateful to you for advice as to the best and most profitable way to lay out the garden for fruit, best kind of trees and bushes to put in, distance apart, time for planting, &c. The land is about 10 miles from, and 100 feet above, the sea. It is away from smoke. Soil is rich and sandy 18 inches thick, with a sand-bed underneath.—J. R., Middleborough.

4283.—Heating frames.—I am going to heat six brick frames, which are in a row touching each other. Total length and width, 50 feet by 7 feet. I should be greatly obliged if any of your readers will kindly tell me the best boiler to get, and whether I ought to use 4 inch or 2-inch pipes? I want the frames for Cucumbers and for raising bedding plants. I should like to be able to keep up a heat of 60 degs. in winter at night. Should like to know the cost of heating same and the best firm to go to?—E. GAZZ.

4284.—Poultry destroying garden.—Being an old reader of your paper I venture to ask your advice. I have a small garden, and being a great lover of flowers, I spend all my spare time and money on them; but my neighbours keep poultry, which are always tearing everything to pieces, and no matter how much I complain it still goes on. As last I gave notice I would kill all I found on my place, but they say I will have to pay damage. Could you tell me if I may kill, or what course I should take?—J. C. JONES.

4285.—Old Vines.—What is best to be done with old Vines? They are about sixty or seventy years old at least, and have been badly managed several years back. They were formerly grown on the long-rope system, but are now in a very confused state. In places, several feet of old canes are blind. The borders also in a very bad state and sour. I am in favour of cutting out old Vines and planting young ones, but my master thinks lifting, root-pruning, &c., would do. They can have very few roots in a sodden border?—T. H.

4286.—Treatment of fruit-trees.—I have some young Peach and Apricot-trees growing in my garden trained on to the wall. They are making a lot of young shoots, some about 1 1/2 feet long. I should like to know how to treat them? Should I cut them back to induce side-growth to keep the tree well furnished from the bottom, or should they be all trained in at full length? The strong shoots of this year's growth on the Peach-trees are throwing out side-shoots near the top, and I am afraid if they are left their whole length that the tree will get bare underneath.—EMIN.

4287.—Eucalyptus globulus.—I have three plants of Eucalyptus globulus, about 4 feet high above the pots. They were reported about five weeks ago and are growing well. They are now outdoors, with the pots sunk in the ground. In winter they will have to stand in a greenhouse facing nearly south-west. I want to dwarf them and make them more bushy. Please advise me as to its treatment, soil, &c. Can they be grown from cuttings or only from seed? The above plants were raised from seed and were neglected in their early growth. I want to get a few dwarf plants from them.—A CONSTANT READER.

4288.—Ivy on walls.—What course Ivy to turn from wall instead of clinging to them as usual? Round my house in North Cheshire I have a number of Ivies, including Emerald Gem, Angularis aurea, Caswoodiana, and Margaria argentea. These are planted on north, south, and west walls, built with ordinary bricks and mortars. All these plants are strong and healthy and in vigorous growth, but the shoots, although well supplied with suckers, curl

from the walls. My gardener carefully nails them up, but allow about another 6 inches of growth they again curl away and twist into knots.—LIV.

4289.—Odontoglossum nebulosum.—Will you tell me when O. nebulosum should flower? In "Williams' 'Orchid Grower's Manual'" it says "with the new growth." Does this mean like O. citreolum, and if so is similar treatment necessary, keeping it dry till the spikes appear? I have O. citreolum and always flower it well, but am not successful with O. nebulosum. I have two or three mature pieces which are in the best condition and made good growth for two years, but have not bloomed. This year's growth is now advanced, but I have seen no sign of flower. I grow them cool. Advice will be much esteemed.—T. P. WARREN.

4290.—Mealy-bug on Vines.—I have four young Vines (Black Hamburg and Madresfield Court) in their second year of bearing fruit which are badly infested with mealy-bug. The bunches are so infested with the white fluffy insects as to necessitate each berry being out of and wiped. The joints and shoots of the Vines also show the bug. Last year each Vine was allowed to carry two bunches, and they were affected in a similar manner, but in a less degree, and after the leaves decayed the bark was peeled off and the stems dressed with Gishurst compound once, but nothing more was done. Is there any certain cure, or will it be advisable to take out the Vines and plant others?—SUBSCRIBER.

4291.—Tomatoes.—I have some Tomato-plants growing in 12-inch, 11-inch, 10-inch, and 9-inch pots respectively on the front shelf of an unheated lean-to greenhouse, south aspect. They are growing vigorously on single stems, and have about six trusses of fruit and bloom on them, but none ripe, and the top ones are not set. Would these plants bear well and the fruits ripen if I train them up the roof, or should I stop them? Also should the blooms be thinned out? I water them once a day with liquid-manure alternately, and syringe them two or three times a day. I close the house at night, giving a little air top and bottom. I have given them a top-dressing once. Is my treatment right?—CONSTANT READER.

4292.—Cutting Yews.—I should be much obliged if someone would answer a few questions as to the best method of cutting Yews, and also if I am most anxious to plant some in an old formal Jacobean garden? Supposing I bought a number of well-grown, bushy plants, of, say, 4 feet in height, would it be possible to cut them into any simple shapes, such as pyramids, large balls, cubes with ball tops, and so forth, and, if so, how should I set to work? Should they be cut at once, and as they grow kept trimmed into the shape required, or would it be better to leave them entirely untouched until they have grown to the necessary height, which would be from 6 feet to 8 feet? Of course, in pruning the latter course one would be obliged to cut into and remove a lot of old wood with no foliage on it, and I should like to know if the bald patches thus made would be green next year?—K.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

4293.—Petunias (F. J. F.).—The Petunias are not uncommon, although rarer than many other kinds. They are of no particular value.

4294.—Mildew on Roses (C. W. Vincent).—Your Roses are affected with mildew, from which very few varieties are quite free. Dust the leaves with flowers of sulphur, which is an excellent remedy.

4295.—Manuring flower border (Beginner).—Mulch the border with well-decayed manure and lightly fork it in; but unless the border is really impoverished it is best to leave it alone, as the plants are likely to get much disturbed, if not killed, unless great care is taken. Do this work before planting the bulbs.

4296.—Unhealthy Maiden-hair Fern (A. C. P.).—It is evident that the roots are wrong. Perhaps the plant requires re-potting. If so, repot into a mixture of loam and peat. Drain the pots well and water carefully. Should be done in time after potting. Too much moisture or old country air would also make the young fronds go in the way described.

4297.—Dahlias eaten (Briarwade).—Judging from the flowers sent, asparagus are responsible for the mischief. Put a small flower-pot, with a little hay in the bottom, on the stake, and the pests will crawl into this at night. In the early morning they can be easily captured. Bees-sticks placed about amongst the leaves form also a very good trap; but the flower-pots are the more reliable.

4298.—Roses (Puck).—We have inserted some of the queries under the proper column. You could grow Roses well in a bed facing south-west; good, well manured, deep soil is the best for the plants. You will get as much information from GARDENING as anywhere; ask questions when you are in doubt. The time to plant Roses is October or November. They must not be out about.

4299.—Red-spider (Anzlow).—The last enclosed shows that your Vines infested with red-spider. You have kept the roots too dry and not ventilated the house properly. Give water more freely, and the house must be kept moist, so that your plants will have no cause to fear pest. We should syringe walls with clear water. Put water on the pipes and also dust the leaves. Persevere with these remedies. For the other, hang a few rather arrow-headed bottles about filled with syrup or some sweet substance. This is found an excellent trap.

4300.—P. opogating "Geranium" (Mrs. Scott).—"Geranium" may be struck now. Cut the shoots just under a joint, and insert in a pot or box filled with light soil. They will strike either in the open or in a greenhouse. Do not give too much water. Put a few crocks in the bottom of each pot. Buds may be kept in boxes through the winter; store them when quite dry. Frost must not reach them; select also a cool place. October is the best month for bulb planting for spring; or late in September. Order what you require at once. See article on bulbous flowers in GARDENING, July 29.

4301.—Growth of Dext-moth (W. A. Bois).—The growth you sent are the caterpillars of the Dart-moth (Agrotis segetum). They all had legs; I could not find

one without them. They are very difficult, or rather troublesome, to destroy, as any insecticide loses its strength in soaking through an inch of soil; but watering with soapy water is useful, as it brings the insects to the surface, when they can be picked up by hand. The soapy water must be freely used, honing round the plants, as turning the plants out of their shelter in any other way, and picking them up is the most practical plan.—G. S. S.

406.—Sand wasps (No Name).—The wasp-like insect you sent me one of the sand wasps (*Mesochorus arvensis*); they are very useful insects, as they destroy a great number of flies, and had evidently come into your room in search of them. These wasps make their nests in sandy banks and similar dry places; they fill the cells, of which the nest is composed, with dead flies. An egg is laid in each cell; when the young grubs hatch from these eggs they find themselves surrounded with an ample supply of food. These sand wasps, of which there are many kinds, should never be destroyed, for the number of small insects which they destroy is very large. Some species collect web silks, others aphides, others spiders, and so on.—G. S. S.

NAMES OF PLANTS AND FRUITS.

*. Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the EDITOR of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C.

Names of plants.—J. Burden.—1, *Chenopodium rubrum*; 2, *Trifolium maritimum*; 3, *Glucium luteum*.—C. Wilks.—1, *Lithochrois leptophylla*; 2, *Anemone adianthifolia*; 3, *Microlepis coehra*; 4, *Diplasium decussatum*; 5, *Onoclea sensibilis*; 6, *Anchitaea virginica*.—C. E. F.—1, *Sabbiosa arvensis*; 2, *Hieracium aurantiacum*; 3, *Hieracium pilgeri*; 4, *Salicaria dubia*.—David G.—1, *Acideta densa*; 2, *Cattleya Gaskelliana*, ordinary form; 3, *Odoothlogium grande*; 4, *Cattleya Bowringiana*.—C. Young.—1, *Saccolabium Bismar majus*; 2, *Cattleya Schottfeldiana*; 3, *Laelia elegans*.—T. Herriott.—1, *Dendrocaulis adiantoides*; 2, *Lomaria discolor*; 3, *Asplenium lucidum*.—H. Cottam.—1, *Armeria vulgaris*; 2, *Stachys sylvatica*; 3, send again. —H. Rowlett.—Cannot name such miserable bits and without numbers. —G. Bickley.—1, *Cattleya Bowringiana*, a very good dark form; 2, *Cattleya granulosa*.—H. Foster.—1, *Phalopsis antennifera*; 2, *Mitella Morellana*; 3, *Laelia Schilleriana*.—Erin.—Please send specimen; cannot name from mere description. The Periwinkles are evergreen. —A. K.—*Clethra alnifolia*.—Dick.—1, *Veronica speciosa*; 2, Please send in flower; 3, Next week. —E. M. E.—We cannot distinguish the substance from seaweed; such things occur so near the sea. Perhaps seaweed has been used in or near the garden for some purpose. It is best not undisturbed. —Mrs. Bartlett.—We are sorry that the flower sent was shrivelled. Please send another specimen. —H. Hughes.—*Maxillaria sp.* —H.—*Delphinium albiflorum*.—T. Hill.—The white one is *Galage officinale alba* (the White Goat's Rue); and the crimson one, *Oewego Tea* (*Monarda didyma*). —Dolgray.—*Rosa Caupion*.—No Name.—1, *Double Snowwort* (*Achillea ptarmica* f. pl.); 2, *Cuscuta Epiphora*; 3, *Astragalus major*; 4, Next week. —F. A. S.—Cannot tell from a single specimen. It looks like *Mary Morris*. —F. M. H.—*Spermannia africana*, we presume, but you must send flowers; it is impossible to be certain of a name from leaves only. —S. C. Austin.—*Hibiscus sylvaticus* (the Syria Mallow).—T. W. Selby.—*Chilensis Yellow*.—Mrs. O'Reilly.—1, *Rudbeckia californica*; 2, shrivelled; 3, next week; 4, *Bocconia cordata*; 5, *Dicentra eximia*; 6, *Tropaeolum coccineum*. —Names of fruit. R. B.—1, *Apple Greenstein*.—H. E.—1, *Calluna*; 2, *Burberry Pippin*.—Rev. E. C. Diaz.—*Apple Herwarden*.—Spice.—*Apple Irish Peach*.—Mrs. O'Reilly.—Apparently *Strawberry Pippin*, but it may be some local kind.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

Horberry.—We do not know of such a work. —Stamp.—We do not recommend any special trader. —J. Shering.—Please send fruit; it is impossible to tell the name of the variety from leaves only. —J. G.—Please see answer to "Stamp." —Mrs. Scott.—A volume of GARDENING will answer as well as any manual for amateur gardeners. We shall be pleased to answer any questions. See short Editorial Replies. —G. C.—See the advertising columns. We do not recommend any special matter, but they differ greatly. —Some of the *Amaryllis* are sweet, but they differ greatly. Keep the bulb by all means. —H. J. Tomlin.—Please see advertising columns.

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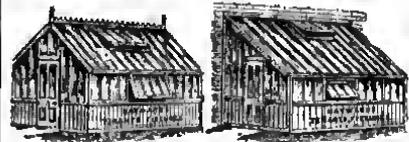
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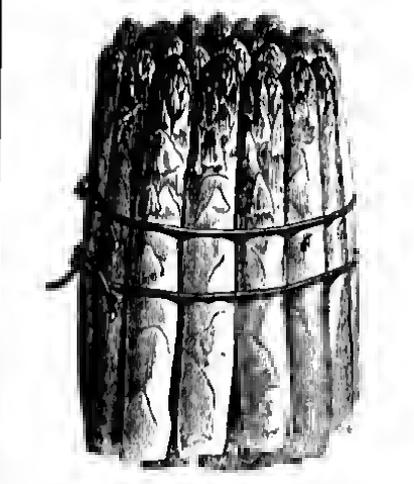
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 do. *Nestor* and *splendens*
Arnica montana
Andromeda fastigiata and *Veronica pinguifolia*
Androsace lanuginosa
Anemone alpina sulphurea
 do. *Pinnatifida*
 do. *japonica*, pink and white
 do. *Japonica*
 do. *nanoceros* (forms of)
 do. *Pulsatilla*, the Pasque Flower
 do. *ranunculoides* and *A. thalictrifolia*
Angreecum caudatum
Anagallis arvensis
Anthriscus silvestris
 do. *Boissierianum* and var.
Antirrhinum, group of
Aquilegia Scutellaria
Arctostaphylos
Arenaria balearica
Aristolochia elegans
Aster scris
 do. *Amellus* and *A. linearifolius*
 do. *Stracheyi*
Auricula Golden Queen
Auricula, group of
Azalea Deutchae Paria
 do. *Hoxe*
Beaufortia splendens
Beauveria grandiflora
Begonia Haugiana
 do. *Johni*
Begonia, two tuberosus
Benthamia fragifera
Berberis vulgaris asperina
Besleria elegans
Bignonia speciosa
 do. *Tweediana*
Bilbergia vittata
Blandfordia Cunninghami splendens
Bonarea conferta
 do. *froides*
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Boronia heterophylla
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Bouvardia President Cleveland and *B. Mrs. R. Grece*
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Briers, Scotch
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Buddelia Colvillei
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Cesalpinia japonica
Calanthe Veitchii
Calanthe, hybrid
Calceolaria, a new race of
Callisarpa purpurea
Callistemon rigidus
Calochortus flavus
 do. *Kennedyi*
Caitha leptosepala and *Alyseum montanum*
Camellia reticulata
Camellias, two new Japanese
Campanula pusilla var. *crispifera*
Canna Louis Thibaut and *Victor Hugo*
Carnation Harmony
 do. *Betton Rose*
 do. *M. Hergendland Müll. Rousaell*
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Cattleya Fendalliana
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Cercus Lemairi
Cerinthia retorta
Chilomenanthus fragrans
Chionodoxa Lucilla var. *gigantea*
Chrysanthemum America and *O. Lady Brooks*

Chrysanthemum Elaine and *Soleil d'Or*
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 do. (single) *Jane* and *its yellow var.*
Chrysanthemum, Japanese *Anemone-flowered*
 do. two hardy
Cineraria aurita
Cistus crispus
 do. *formosus*
 do. *Isidarius* var. *maculatus*
 do. *purpureus*
Clarkia elegans fl.-pl.
Clematis Stanley
Clorodendron Kämpferi
 do. *trichotomum*
Cilanthus Dampieri marginatus
Coburgia trichroma
Coleogyne cristata maxima
Coelvolulus mauritanicus
Cornus Bonas
Cosmos bipinnatus
Crataegus lanacatifolia
Crinum Powellii
Crocus, group of autumn
Crossandra undulata
Cyclamen Coum and *C. Atkinsii*
 do. *repandum* and *Rosa alpina*
Cypripedium aculeum and *O. pubescens*
 do. *Chamberlainii*
 do. *Dominicanum*
Cytisus nigricans
Daphne Genkwa
 do. *Meserum autumnale* and *Orydonia japonica* *Moerhousii*
 do. *Meserum* var.
Dendrobium Phalaenopsis Schroederianum
 do. *thyrsiflorum*
Dianthus alpinus and *Erodium macradentum*
 do. *neglectus*
Dictamnus Fraxinella var. *alba*
Dietes Huttonii
Digitalis, spotted variety
Dimorphotheca graminifolia
Dias racemosa
 do. *Veitchii*
Echium callithyrsos
Elaeagnus parvifolia
Elaeagnus cyanus
Eomsoon chionantha
Epidendrum macrochilum album
Bremneri *Bungelii*
 do. *robustum*
Erica hymenalis and *E. h. alba*
 do. *propendens*
Erigeron aurantiacus
Erythronium pumilum and *Sedum spatulifolium*
Erythronium Dens-canis
Eucalyptus leucocylon
Eucharis amabilis
Forsythia suspensa
Franciscana calycina grandiflora
Fritillaria aurea
 do. *Melagris* var.
Fuchsia dependens
 do. *triphylla*
Genista sibirica
Gentiana bavarica and *Aquilegia glan-dulosa*
Gerbera Jamesoni
Geocora cardinata
 do. *longiflora*
Geum minimum
Gladiolus, new hybrid: 1, *La France*; 2, *L'Alsace*; 3, *Maquis de Fer*
Gladiolus sulphureus
Gloriosa superba
Olexifolia
Orythia hincinthina
Habenaria militaris
Haberica rhodopansis and *Campanula turbinata*
Habrothamnus Newellii
Hamamelis arborea
Helenium autumnale pumilum
Hellianthemum algaryense
Hemerocallis Dumortieri
Heuchera sanguinea

Hibbertia dentata
Hibiscus Hugeli
 do. *Rosa-sinensis fulgens*
 do. *Tritium*
Humeumannia fumariifolia
Hyacinthus aureus
Hybrid Sweet Briars
Hypericum oblongifolium
 do. *elypticum*
 do. *triflorum*
Illicium floridanum
Impatiens Hawkeri
Impatiens Hornstallii
Iris aurea
 do. *bistrioides*
 do. *Habitio*
 do. *ochroleuca* and *I. Monspur*
 do. *parviflora*
 do. *pavonia* and *I. pavonia caerulea*
 do. *sustata*
 do. *tingitana*
Imone Andreae
Ixora Westi
Kempferia rotunda
Biphenia aloides var. *glaucescens*
 do. *esulescens*
Laelia albida
Lathyrus grandiflorus
Leschenaultia biloba major
Lewisia rediviva and *Micromeria Piperella*
Lilium canadense, red and yellow forms
 do. *Henryi*
 do. *japonicum*
 do. *nepalense*
 do. *nepalense* var. *ochroleucum*
 do. *speciosum rubrum*
 do. *superbum*
 do. *Sovitzianum*
 do. *Thunbergianum* *Alice Wilson* and *Van Houttei*
Limonium Humboldtii
Linaria alpina and *Phyteuma humile*
Linum arboreum
Lonitca sempervirens mifer
Luculia gratissima
Magnolia conspicua
Malva lateralis
Marica oerulca
Maxillaria Sanderiana
Miltonia spectabilis and var. *Morrelliana*
Mina lobata
Monarda, new hybrid
Mutis Clematis
 do. *decurvata*
Myosotidium nobile
Narcissus Broussonetii
 do. *triandrus* var. *albus* and *N. cyclamineus*
Nelumbium speciosum
Nemesia strumosa var.
New Narcissus: 1, *Albertus*; 2, *Seagull*; 3, *Seedling Pheasant-eye*
Nymphaea Maritima (Canary Water Lily)
Odontoglossum Harryanum
 do. *Wattianum*
Olearia insignis
Oncidium Oreana
 do. *Jonsonianum*
 do. *Phalaenopsis*
Oncocyclus Irises: 1, *Gates*; 2, *Lorteti*; 3, *Lujo*
Ornithogalum nutans
 do. *pyramidalis*
Orobanchaceae
Ostrya magnifica
Oxalis Bowliana
Oxera pulchella
Oxytropis Lambertii and *Acantholimon glumaceum*
Paeonia albiflora *Adrian*
 do. *decora elatior*, *P. lobata*, *P. anemoneiflora*
 do. *Moutan* var. *Reina Elizabeth*
 do. *Venus*
 do. *Whitleyi*
Paeony, single white *Meutau*

Panicle (tufted) *Duchess of Fife* and *Hartree*
 do. *Quaker Maid* and *Jackanapes*
Pansy (tufted) *Violetta*
Papaver orientale
Pastiflora caerulea *Constance Elliott*
 do. *raemosa*
 do. *Watsoniana*
Paulownia imperialis
Phalaenopsis gloriosa
Phlox Drummondii (some good vars. of)
Phyllostachys deltoidea
Plingulca grandiflora and *Viola pedata*
Pink Her Majesty
Polygala Chamomorus purpurea
Primrose College Garden seedling
 do. *Oakwood Blue*
Primula floribunda
 do. *imperialis*
 do. *mutina* and *Epilobium obovatum*
 do. *Sleboldii*, white and light vars.
Prunus Pissardi
 do. *trilobus*
Ranunculus pyrenicus and *Omphalodes Lucilla*
 do. *pyrenica alba*
Ranunculus Lyalli
Reinwardtia tetragynum
Rhododendron Ceres
 do. *kowense*
 do. *multicolor* hybrid
 do. *niagariense*
 do. *raemosa*
Rhododendron, Hybrid *Java*: 1, *luteo-roseum*; 2, *Frimrose*; 3, *Jasminiflorum* *sanctum*
Rosa Indica var.
Rose Anna Ollivier
 do. *Comtesse de Nadailles*
 do. *Innocente Piroia*
 do. *Jean Perret*
 do. *Laurette Masmy*
 do. *Mme. de Watterville*
 do. *Mme. Nabonnand*
 do. *Marquise de Virena*
 do. *Marie van Houtte*
 do. *Mrs Paul*
Hudbeckia purpurea
Ruellia macrantha
Saccolabium bellum
Sarracenia, new hybrid
Saxifraga Boydii
 do. *Portreei*
Scabiosa caucasica
Schubertia grandiflora
Senecio macroglossus
Sunilacina olivacea
Snowdrops and winter *Aconita*
 do. eight kinds of
Solanum Sesforthianum
Stanhopea platytrachis
Sternbergia lutea and *S. angustifolia*
Stigmaphyllon elliptum
Streptocarpus Galathei
 do. vars. of
Streptocarpus, hybrid
Stuekia pteris *Camellia*
Swan Pass. Hill, Stasler, Mrs. Eckford, Orange Prince, and *Dorothy Tennant*
Tea Rose Corinna
Tuslotrum anemonoides and *Saxifraga coccia*
Thunbergia grandiflora
 do. *laurifolia*
Tufted Pansies: 1, *Ravenwood*; 2, *Eden*; 3, *Isis*
Tulpa Pansy Sylvia and *Beale Clark*
Tulpa vitellina
Tulpa, nid garcon
 do. *southern* (T. *australis*)
Tydeus Mma. Holca
Urocoina poudica
Vanda tores
Wahlenbergia pumiliflora
 do. *saxicola*
Waldsteinia trifolia
Xerophyllum asphodeloides
Zauschneria californica
Zephyr Flower (*Zephyranthes Atenasae*)
Zephyranthes candida
Zygopetalum crinitum

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GARDENING ILLUSTRATED.

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ROSES.

MANURES FOR ROSES.

Now that the planting season will soon be here, a few notes upon the manures most suitable for Roses may be welcomed. I am certain that many soils have been injured as far as the Rose is concerned by injudicious applications of a manure that was unsuitable. For example, if the soil is naturally hot and dry, or of a sandy and porous nature, I would advise you to use neither soot nor guano. These have a great tendency to dry the soil yet more, and it is only in stiff and strong soils that they are really beneficial. On land of the last-named character these two manures are not to be despised. When planting Roses upon light and dry soils, such as is now under notice, it will be much better to use some cooling manure, and also one that will retain moisture. I would recommend a mixture of well-decayed cow-manure and stable-manure. If these are thoroughly rotted and turned over a few times they will benefit such soil more, and in a far more permanent manner, than soot or guano. A little agricultural salt incorporated with any mixture applied to very light land is decidedly beneficial. I well remember once having a large bed of Roses upon the site of some Apparagus beds that had been frequently manured with salt. These plants grew away more freely and later during the following summer than some upon the opposite quarter and where no salt had been applied. Used carefully, salt is an excellent and cheap manure: it keeps the soil cool and moist. I am a believer in the benefits accruing from a thorough mixture of manures, but if tied to one manure for Roses and upon an ordinary soil I should unhesitatingly choose pig-manure. This is very powerful and lasting, and if lightly forked in when used as a top dressing, or a few ashes be mixed with it before application, the unpleasant odour will be neutralized. Some apply lime and night-soil to this manure, but these disseminate so much of the valuable ammonia that I always use ordinary soil or ashes. Night-soil can be put to no better use than trenching it well into the ground when forming a rosery. Here its fertilizing and lasting qualities will be seen for a long time, and when dug in no unpleasant odour results. Woollen-waste is a very useful manure for stiff soils of a clayey character. I have found it a very cheap and lasting manure. Fish-manure, on the other hand, is very evil-smelling and powerful, soon exhausted, and by no means cheap except in a few favoured localities. For general work, a mixture of decayed cow and horse-manure is the best. This should be turned over frequently, so as to avoid any white and drying heat in the centre of the heap, and also to secure all the moisture from urine or rain. Bone-meal is an excellent artificial manure. Roses are hungry plants, but they want steady and constant feeding to secure good growth and flowers; not excitement, with its consequent sappy growth, followed by a relapse through the soil having been impoverished with artificial manures. Bone-meal, however, with woollen-

waste, rags, swoopings from the shoeing-forge, &c., mixed in small quantities with thoroughly decayed manure, will suit all soils equally well and form a good mixture for Roses. P.

4383.—**Rose Reine Marie Henriette.**—I will answer the latter part of your question first, by saying that the above Rose is by far the best red variety for a greenhouse that I am acquainted with. It invariably comes a good colour under glass, while it is one of the finest blooming climbers we have, and produces most handsome foliage. Train in your shoots at full length, and when they have flowered in the spring remove the older growth, and encourage more long rods to form. These will probably reach double the length next year, and provide a proportionate quantity of bloom.—P. U.

4375.—**Border of Roses.**—Probably the Roses have been growing where they are for many years. If so, dig the lot out in November, and trench the ground, adding a liberal dressing of rich farmyard-manure. Pig-manure is also good for Roses. Select all the plants that are good enough to be replanted, throwing the stocks away, and any Roses that are quite worn out. Some good decayed loam or rich soil from another part of the garden ought to be placed around the roots. Some of the better Roses should be purchased to make good the losses that have been sustained. Roses do far better when they are removed and replanted every second or third year.—J. D. E.

4368.—**Rose "Fortune's Yellow."**—Your plant is in a favourable position, and as it is growing well it should also flower satisfactorily. Perhaps you make the mistake of pruning it. Strong growing Roses are more often than not spoiled by injudicious pruning. Let your plant grow just as it likes, and do not touch it with the knife, except to remove any wood that may have got killed by frost in the winter. There is nothing prettier than this Rose when allowed to grow and bloom at will.—P. U.

—This Rose does require great care in pruning, but in other respects it thrives under the same conditions as other Roses, when the position is warm enough. On the south front of Colonel Serle's house at Fitzroy, Taunton, it succeeds admirably, and last year, from the end of March to the end of April, produced hundreds of fine blooms. Indeed, I never saw this Rose in such good condition before in the open air. With regard to the pruning, quite two-thirds of the shoots should be cut out directly the flowers are over, and in the case of a weak plant, all the growth made during the summer should be nailed or tied in. If, however, the young growth is crowded, the weak shoots should be thinned out at the end of September. If your plant does not flower under this treatment you may safely conclude that the position is not warm enough to ripen the wood.—J. O. O.

4367.—**Show Roses.**—As you do not name any particular class of Roses, and as it is easy to select twenty-four good exhibition varieties from both the Hybrid Perpetuals and Tea-rose divisions, I propose choosing twelve from each.

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Hybrid Perpetuals: A. K. Williams, Charles Lefebvre, Horace Vernet, Mrs. J. Laing, Alfred Colomb, Victor Hugo, Marie Beaumont, Dupuy Jamin, Camille Benardin, Louis Van Houtte, Her Majesty, and Duke of Edinburgh. Twelve Teas: Maréchal Niel, The Bride, Catherine Mermet, Souvenir d'un Ami, Perle des Jardins, Comtesse de Nadallac, Anna O'livier, Mdam. Hoeta, Jean Ducher, Niphetea, Innocente Pirola, and Françoise Krüger. The secret of getting good exhibition blooms is to secure sound growth without coarseness, and to keep the side buds thinned away from the main bloom as soon as ever they can be handled. Twelve good pot Roses are included in the following, the main colour of which are given: Niphetea and Souvenir de S. A. Prince (white); The Bride and Innocente Pirola (creamy-white), Angustine Guinoiseau and Madame Beaumont (blush); Madame Lambert and W. F. Bennett (red); Isabella Sprunt and Perle des Jardins (yellow), Madame Faloot and Sunset (orange and apricot), Souvenir d'un Ami and Catherine Mermet (soft-pink); Françoise Krüger, Jean Ducher, and Doctor Grill (salmon-buff).—P. U.

4358.—**Roses in small pots.**—With careful cultivation you may grow H.P. Roses successfully for several years in 8-inch pots, but it will be as well for you to understate at starting that everything depends on the kind of management the plants get, also on the selection of varieties. You will find some difficulty in keeping in vigorous health some of the dark-coloured Roses, such as Charles Lamb, Victor Hugo, and E. Y. Tea. At best they are indifferent growers. You will, however, find such bright-coloured Roses as Charles Lefebvre, General Jacqueminot, and Duke of Edinburgh answer your purpose admirably. Supposing the plants come to hand in the autumn established in 6-inch pots, let them be shifted at once into others 2 inches larger, and about Christmas prune all the growth back to the third eye. The subsequent treatment must be guided by the purpose for which they are required. If they are to be forced into flower early, they must be repotted every year early in August, having two-thirds of the old soil shaken away from the roots and fresh supplied. If they are to flower in an ordinary greenhouse temperature the repotting may be done in December. Earlier potting is necessary in the case of forced plants, as if the roots have not got a good hold of the new soil the plants will make growth, but give few flowers. If you want early blooms you had better not select such full-petalled flowers as La France and Violette Bouyer. Mrs. J. Laing is the type of flower you want, others equally good being Ulrich Brunner, Centifolia rosea, Mme. O. Luizet, Jules Margottin, and John Hopper.—J. O. O.

—Yes, the sized pot you name is the one generally used by market growers. All you want to secure is a fairly rich and loamy soil; to provide good drainage, so that plenty of water can be given while your plants are growing without making the soil stagnant.—P. U.

Sweet-scented Rose.—In article 4237 on Roses, your correspondent, "P. U.," while no doubt justly complaining of the behaviour of La France, says: "Though as initially scented, we can also qualify in this respect." Will be kindly if you will quote La France in particular.—J. L.

GARDEN WORK.

Conservatory.

Fuchsias planted out to the borders are still very beautiful with the drooping branches heavily laden with flowers. Plumbago zapensis (pink and white), are also forming a charming mass and will continue flowering until it is necessary to begin reducing growth to fit in light for the winter-flowering plants. Lillineum auratum and inoffolium, Heliotropes, and Petunias, add to the beauty and fragrance of the house. Tea Roses, when planted out, are nearly always in evidence, and when one has a roomy house to deal with, I like to plant out the roses and let them strike out. Myrtles are charming for filling in dark corners, either planted out in pots or tubs. Outlings of these and Hebeides will strike oow; both of these plants will root in water. The other day I was in a handsome conservatory, and taking up a small bottle lying in a slanting position on the stage, I noticed it contained a Myrtle cutting with white roots, already formed in the water. This is a very simple way of striking outtings. The bottle was a small phial that would hold about an ounce of water. In this the Myrtle cutting had been dropped a month or so ago, and it was now ready for potting. One anything be easier or simpler? Other things, including flowers, might be rooted in the same way, though the success of the potting I do not after roots are formed the better. The time is close at hand now for potting up plants such as Salvia Eupatoriums, &c., which were planted out in spring to make growth. If the plants have grown strongly it will be better to pass the spade round them at oow, just to sever a few of the principal roots, so that when lifted the plants may feel less check. It is important when the potting up takes place that the plants should stand in the shade till new roots are formed, and the sooner the better. Make preparation for housing Azaleas and other things which have been placed in the open air. If Palms and foliage plants are left out outside long after the date, the leaves will be torn by the wind, and a disfigured Palm-leaf hangs on a long time. If Camellias are permitted to get dry now, the buds will surely fall. A little weak eot water will be good for them now, also for Azaleas and other things with pots full of roots, but the liquid-manure, whatever it is made from, should be used with care. No fire should be required yet, and the lights may still be left open at night.

Stove.

The plants in this house will soon be worth looking at again. I think stove plants always show up best in the winter, when the days are cold, and the Poinsettias and Euphorbias are filling the house with a glow of scarlet. But there are still Rhododendrons to the stove. Allamandas, Dipladenias, Vines, Rhododendrons, and other things are still nicely in bloom. Anything tender to cold frames will soon have to be brought back to the stove, and in the meantime, cover the plants at night with mats. No fire will be necessary now or cold nights, at any rate. Shading will hardly be required now. It will be better to give a little more air than shade overhead. The external air in the autumn is different to what it is in spring. It is warmer and has a ripening effect upon the growth. An effort should be made to clear out mealy-bug and other insects before winter, and the plants which have been taken out to recruit and ripen are brought back. Gardenias have been taken to the greenhouse to ripen growth. But when brought into the warm house again the insects will soon show their partiality for them unless they are cleared out now. There are insecticides that will destroy mealy-bug, if the mixture can be made to reach them, but there must be a peroxide of iron, and I am not in favour of peroxide or any other oil or spirit which is very powerful, and at the same time will not bleed with water. After all, the old remedy of soft-soap and water are equal, as is depicted in all insectaries where cleanliness carries weight. Insects of all sorts and sizes like to be quiet and peaceful.

Chrysanthemums.

There is a good deal of tlyng to do now; top-dressing opening out so that the growth may get formed a bit. Watering and other outlying details take up a good deal of time. The Chrysanthemum grower on a large scale has no leisure. When his is not watering or tlyng, he is either the evening or taking the plants, or in tlyng, or in the shoots, or otherwise carrying out necessary details that will bring success to the future. It is very important that the plants never suffer for the want of water. A good proportion of the strongest plants will require water twice a day in hot weather. Liquid-manure may be given twice a week.

Orchard-house.

Peaches and Plums from which the fruits have been gathered will be better placed outside now to complete the ripening. Orchard-house outtings to pots fit to sell with the present manure for big Chrysanthemum bloom, at which the late Fuchsias and Plums are gathered, the trees can be taken out, the house receive a clean down, and the Chrysanthemum can be taken in before frost comes. If any of the potted trees require larger pots the autumn, just as the leaves are ripening, is the best time to do it. Good sound loam, with a very little old manure, perhaps the manure may take the shape of bone meal. At any rate, a little enrichment of the soil is necessary on potted trees, even though rich top-dressings and liquid stimulants are used.

Cold Frames.

I dressy others are doing as we are in utilizing to the fullest possible extent the cold frames. Cyclotenus, Primulas, Chierarias, are daily demanding more room. Hence Begonias and soft things reared in heat, and which were brought out to ripen, have to be moved back to the greenhouse or stove. This space is required for striking outtings of many things. For instance, I want to strike a lot of evergreen shrubs, and I must have frames for the work.

Window Gardening.

Fuchsias which have done flowering place outside to ripen. A few outtings of anything good may be taken. They will root now in a north aspect. Zonal Geraniums

alums* must not be overwatered. Keep Cutuses out in the sun a little longer; nut much water will be required oow. Pot a few early-flowering bulbs, such as early flowering Hyacinths, Scillas, Snowdrops, Tulips, and Narcissus. When these bulbs are kept long out of the soil they deteriorate.

Outdoor Garden.

Now very beautiful the common kinds of creepers—Ceanothus, Creepers, the Crimso Nasturtium, and others—are when trained past the stem of small trees, such as Laburnum, Theophrastus, Prunus laurocerasus, &c. They are especially useful in new places, where filling up stuff is peculiarly valuable. Another matter that might be noticed now is the value of annuals in large masses in oow gardens. Very few perennials will bear the pressure of thick planting for immediate effect, and neither is it necessary, as hardy annuals and roots of berdy herbaceous perennials can be bought cheap, and not only is the place furnished cheaply and rapidly, but most effectively where a little taste is brought to bear. Save seeds of good strains of annuals, biennials, &c., and put in cuttings of tender plants to produce stock for next year. The tender plants used for carpet-bedding, the Oleus, Alchoranthers, and Iresines, will strike oow if cuttings of the young shoots are taken, and planted in pots or boxes in a frame which is ventilated for about an hour every morning, and for the remainder of the time kept close and shady. Buds of roses and ornamental trees generally will take well now, as the late rains have made the bark work freely, and it is now to attempt to bud unless the bark runs freely. It is full late to layer Carnations, unless the layers are to remain on the old plants till spring, and this late work I do not recommend.

Fruit Garden.

There is always more or less trouble with wasps in a dry, hot season, but the plague is worse than usual this year. If fruit is to be preserved a serious effort has doubtless been made in most places, and this effort will have to be continued till they are got rid of. Destroying the nests is the best course to adopt, in connection with the use of bottles half filled with beer and sugar. These bottles of syrup may be hung up anywhere where wasps frequent. Inside Vine borders must not be permitted to get dry, at any rate until the Grapes are perfectly ripe. Vigorous vines which are not over-cropped will continue to make laterals, and these should be removed when they can be rubbed off with the finger and thumb. The recent heavy rain will be a great help to the Apple and Pear crops, and if the wood and lollage of the trees are not too much crowded there should be fine crops of fruit. We have had a splendid time to make our Strawberry plantations, and after the exhausting summer more of the old plants than usual will be destroyed. Cherry and Plum stocks will work oow, as will also Apples and Pears. The Malice to durg-beds will require a little help from new dung. Careful watering and ventilation will be necessary, and if the canker makes its appearance over the affected part with fresh hot lime at once, and cover it as often as is necessary. The disease comes in the shape of a damp brown gangrene on the main stem. Remove runners from Strawberries to pots for next year's forcing.

Vegetable Garden.

Canillifers may be sown up to the end of the month in warm situations. If sown in a frame September will do. Another sowing of hardy kinds of Lettuce may be made to stand the winter, and this will pretty well complete the outside seed sowing for this season. Mustard and Cress will soon be sown under the shelter of glass—first, under handlights, and when the weather becomes cold in a warm house or Cucumber-house. Cucumbers for autumn or winter forcing may be planted now. Strong plants only should be used, and do not plant nearer than six feet. Winter Cucumbers are often raised by thick planting. Use only fresh, open, torily soil. The hills need not be large to start with, as fresh soil can be added oow. I always like, even when there are pipes for hot-water, to have a foot or so of manure over them, and for some years oow we have used the German Moss-litter manure, and never had better crops. Plant French Beans to warm pits for autumn bearing. This out the growth of Tomatoes in the open air, and stop at leaders, so that the whole crop may be expected. As for Chrysanthemums to pots, one may keep the water-pot going among them all day long, at least where a large collection is grown. The propagation of bedding plants ought to begin full swing; it is much the best plan to get plenty of outtings in good time, while the sun still affords plenty of heat, and get them well established before winter sets in. It has been getting all the "Geranium" outtings possible in the open ground, as I find they strike in this way with much greater certainty and less trouble than in pots or boxes; but it is getting rather late for this now.

Work in the Town Garden.

At the time of writing the weather is again extremely hot and dry, and watering occupies a large part of the time. Tomatoes in full bearing, especially when growing in pots or a limited quantity of soil, seem to take and indeed require almost unlimited supplies of moisture, under present circumstances, and though contrary to the treatment I usually advise, in our climate at least, I now find it advisable to damp down the house freely twice a day—morning and evening. The structure is, however, very light and airy one, and gets the sun all day long, while the ventilators are over entirely closed, eight or day, at this season, and there is not a trace of disease in consequence. "Geraniums" Fuchsias, Begonias, and other plants in full bloom to pots also require to be abundantly and frequently watered. Newly-layered Carnations also must be kept moist, and several kinds of bedding plants outside enjoy an occasional thorough soaking, when the time and water can be spared. As for Chrysanthemums to pots, one may keep the water-pot going among them all day long, at least where a large collection is grown. The propagation of bedding plants ought to begin full swing; it is much the best plan to get plenty of outtings in good time, while the sun still affords plenty of heat, and get them well established before winter sets in. It has been getting all the "Geranium" outtings possible in the open ground, as I find they strike in this way with much greater certainty and less trouble than in pots or boxes; but it is getting rather late for this now.

tings of Double Petunias, Heliotropes, Verbenas, Marguerites, and even Fuchsias, will root freely enough now in well drained pots or boxes of sandy soil, placed in cold frames, and kept moderately close, moist, and shaded. Bouvardias ought not to be potted any more oow, unless any of the shoots show for bloom, and this is not wanted yet, or they are wanted to flower very late, when the point of each shoot may be nipped out once more, not later than the end of this month. It is not of much use to keep the double-flowering kinds back so much, as they will not bloom at all freely after about October, so better let them go now, and retard the single varieties. The beautiful and fragrant E. Humboldtii corymbiflora also blooms naturally in the late summer and autumn, and must not be stopped any more. Finish layering Carnations, and keep all moist. Repeat Persian Cyclotenus, and keep them cool, moist, and in light shade. Obtain and pot a batch of Roman Hyacinths, and Paper-wives and other Narcissus for early flowering. B. C. R.

THE COMING WEEK'S WORK.

Extracts from a garden diary from August 20th to September 2nd.

It is making a good deal of growth, especially the Dijon Tass. Some of the long shoots of the standard plants have been shortened a little. A few of the shoots that will break away will carry late blooms, and be useful. The early-budded Briars have the lvs loosened, and all shoots have been rubbed off the stocks. Put in outtings of bedding plants of various kinds; shall continue this work, as outtings can be obtained through the greater part of September, as a large stock is required. Increased our stock of Tainted Fanlies, with the view of doing more with them next year. Carnations also are being propagated more largely, both from outtings and layers, and the early-budded Briars have the lvs loosened, and all shoots have been rubbed off the stocks. Put in outtings of bedding plants of various kinds; shall continue this work, as outtings can be obtained through the greater part of September, as a large stock is required. 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INDOOR PLANTS.

TUBEROUS BECONIAS AS BASKET-PLANTS.

A very beautiful basket-plant is the Tuberous Begonia when such varieties as pendula, which has naturally a pendent habit of growth, are selected. Too little use is made of this flower for filling baskets in stove and greenhouse, and all thought seems centred on it as a garden flower. But we have seen many charming baskets filled with this variety, and they are a decided relief from the majority of things used for the adornment of the plant house. We have on many occasions referred to their cultivation, and it is, therefore, unnecessary to do so on the present occasion, but we may remark that the Tuberous Begonia is especially well adapted for those who have small houses, as they are inexpensive, easily grown, and look bright over a long season. Many things associate well with them, such as Ferns,

with vigorous side-shoots can be had if space is given them always to prevent their being drawn up weakly, but the plants even then cannot be kept dwarf. *E. citriodora* is very similar in leaf and growth to *E. globulus*, except that it does not run up so high, and has not that exquisite glaucous tint in the leaf so clearly defined as in the case of *E. globulus*. Cuttings of any variety of the Eucalyptus family do not strike readily. Even when the plants are cut down close to the soil, the shoots resulting quickly assume their natural tendency.—S. P.

TABERNÆMONTANAS.

This is an interesting genus to which my attention has been drawn by "J. Cromer," who lately sent me a spray of a plant with rich yellow flowers, but they quickly fall, so that if they are to be kept upon the truss a wire should be attached to them. This kind is *T. grandiflora*. Now there are several of these plants which well deserve attention from the amateurs having small stoves in which to accommo-

donble, of medium size, and pure white. They are very useful for personal decoration, as they go well with Maiden-hair Fern, and better than Gardenias for this purpose, because they do not emit such a fulsome perfume. It does not require much pruning at any time.

T. CAMASSY is a plant with large flowers, and much larger leaves than the preceding. Its flowers are double and pure white. It is useful for bouquet making, or to adorn the hair.

T. GRANDIFLORA forms a neat compact shrub, and I would recommend it to decorate the stove in preference to any other purpose. The flowers are very freely produced. They are single, and a rich deep yellow in colour. J. JARVIS.

4323.—*Musa* from seed.—The best way to get *Musa Cavendishi* is from suckers, carefully taken off before growth becomes too advanced, and potted in pots that will only just hold them, then repotted from time to time until they bloom and fruit. *M. Cavendishi* bears at the height of about 6 feet, while some of the other kinds do not flower under 12 feet or 15 feet. The soil they grow best in consists of two-thirds rich loam from rotted turves, and one-third of well-rotted manure. They require a warm corner of the stove.—H. B. I.

4387.—Heating frames.—To maintain a temperature of 60 degs. through the winter in all weathers you will want a considerable length of piping, and a 4-inch will occupy too much of the space, you had better use 3-inch. Two rows of this size (both flows) along the front, and a single pipe as a return along the back, will give you all the warmth required. For such a purpose I should use a dome-shaped cast-iron boiler, which requires no brick work in setting. No doubt your frames are facing south. If so, have the boiler fixed at the east end, near to the front corner.—J. C. C.

Use a 2-inch flow along the front of the frames, and a 4-inch return—or two 2-inch pipes will come to just the same thing—along the back. I expect you will want some bottom-heat as well in part of the frames at least. If so, put in three 4-inch pipes—two flows and a return—in a small chamber, with corrugated iron and Cocoa-nut-fibre over. Supposing there is equal to 100 feet of 4-inch piping altogether, an independent upright "Star" or "Gem" boiler will heat it steadily and well.—B. C. R.

4361.—*Pot Mignonette*.—I think one of the secrets of market growers' success is the firm way in which the soil is rammed into the pots. Good heavy loam slightly enriched with old manure rammed firmly into the pots, the seeds sown thinly, and the weakest plants afterwards drawn out, leaving about four in a 6-inch pot, will yield good results.—E. H.

4360.—*Myrsiphyllum asparagoides*.—This is an evergreen climbing greenhouse plant. It is easily raised from seed, and in appearance not unlike the ordinary Chickweed of the garden. It is much used for personal adornment. If "B. C. S." wishes to grow it for that purpose some vertical wires should be provided for the growth to climb to, or the numerous shoots that spring up from the crown get so entangled that it is a difficult matter to separate them.—J. C. C.

4369.—*Stephanotis floribunda*.—There is nothing unusual in this plant showing fruit. Many instances are yearly recorded. The fruit is not edible, and only useful for the value of the seed for raising a stock of young plants, not that they are any better than those raised from cuttings. It is perhaps easier to grow plants from seed than cuttings, but they are not any better for flowering purposes. If the plant is not strong and the seed not required, I should remove the seed-pod, as it will only weaken the plant in consequence of the strain upon its resources.—S. P.

—The fruiting of this plant is not a rare occurrence. The fruit is not edible. Have nothing to do with it in this way.—E. H.

—I have seen this plant bearing fruit occasionally, but the occurrence, caused no doubt by the intense heat and drought, is not at all common. I have never heard that the fruit is edible, and should recommend its being allowed to ripen and produce seed.—B. C. H.

Drawings for "Gardening"—Readers will kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruits and vegetables for the purpose of illustrating our magazine. The drawings should be engraved in the best manner, and will appear in due course in the magazine.



Tuberous Begonia as a basket plant.

leopalis, Ivy-leaved *Pelargonium*, variegated *Eulalia*, and other well known subjects. All may be cultivated with success by amateurs, and for window-boxes also they are well adapted. The illustration shows well the beauty of the Tuberous Begonia as a basket-plant, and displays a certain gracefulness of habit not seen in those in the open.

4391.—*Eucalyptus globulus*.—The natural tendency of this Gum-tree is an upward one, therefore it is most difficult to keep them dwarf and bushy; even when the point of the leader is pinched out when the plants are but a few inches high, they quickly make other growths upwards. It is so very easy to grow that it seems to be a waste of time and space to keep them over the winter, except plants 6 feet or 8 feet high are required for hedging purposes or otherwise. Plants 5 feet high can be obtained by the month of August if seed is sown early in February in a gentle heat, afterwards hardening them off and keeping the plants close to the glass to prevent their being drawn up weakly. Those

date them. They are very easy to grow, and yield a profusion of flowers. They succeed well potted in a mixture of loam and sandy peat. The pots must be drained well, and I have found, too, that *Tabernæmontanas* like rather small pots; in fact, they give a large crop of flowers when the plant becomes somewhat pot-bound. They should have a slight pruning every year to keep them in order. In general appearance they resemble the Gardenias, and may be treated in a similar manner. The following kinds are all well deserving the attention of everyone having a stove-house, and I should be glad to see many of these good old kinds become popular again.

T. BARTERI is strong-growing, with large leaves, and from the forks of the branches it produces bunches of large funnel-shaped flowers, which are five-lobed and pure white. This plant requires to be cut back every season a little in order to prevent the specimen becoming thin and scraggy. This makes more young wood, which produces flowers.

C. PURONARIA, PL. 12 is of compact growth, and an abundant bloomer. The flowers are

UNIVERSITY OF CHAMPAIGN

ORCHIDS.

EPIDENDRUM ATROPURPUREUM AND ITS VARIETIES.

This is a plant with a wide range in South America, and that may account for the variation in colour of some of the flowers sent me by "Andrew Cochrane," which he tells me came from Caraccas; but I am sorry to find you have not got the pure white form. All are more or less highly coloured. The variety popularly known in English gardens as *macrochilum roseum* has the flowers smaller than the normal form, and there are several others. It would appear to have been first found by Humboldt, and it was named by Willdenow *E. atropurpureum*, and the name was published as *macrochilum*; but although this name has become the more popular amongst gardeners, it cannot supersede the one first published. One or two inferior kinds occur in this large genus, which are unintentional mimics in growth. When you may be thinking you are picking out a nice plant of the species called *atropurpureum*, you get a variety having a very dull, small-flowered kind. To grow these plants aright, they must be cultivated so that their roots can ramble free in the air. I generally like to use blocks of wood for them, using good-sized blocks, and binding them on with copper wire, placing some Sphagnum Moss about their stems and roots. Keep the atmosphere moist during the growing season, for they are very fond of moisture during growth, but after this has ceased much less will be required. Do not over-dry them; indeed, I have seen more injury arise from this being done too severely than any cause. Some require a very warm temperature, others will only grow in the coolest and most moist place, but the kind we have now under consideration thrives best during the growing season in the Cattleya-house or an ordinary stove. During the resting season it may be removed to the cool-house. These remarks apply to the plant here mentioned, many of the kinds making a tall reed-like stem, requiring attention in the way of watering at all times of the year.

E. ATROPURPUREUM is the plant frequently called in gardens *E. macrochilum album*. It has ovoid bulbs, some 3 inches high, bearing usually two leaves, which are leathery in texture, of a dull, greenish hue, and about a foot in length. The flower-spike springs from the top of the bulb from between the leaves, and grows erect to about 18 inches or 2 feet, bearing about seven or eight flowers or more. Each is upwards of 2 inches across; the sepals and petals are similar in size and shape, incurved somewhat, leathery in texture, and of a dull brown, bordered with a greenish-yellow. The large lip is pure white, being rosy-purple near the base. The flowers are stout in texture, so that they remain in full beauty for several weeks.

E. ATROPURPUREUM ROSEUM is frequently to be met with under the name of *E. macrochilum roseum*, and it is the plant of which my friend "A. C." sends me several flowers, the one marked 3 being about the best. This is known as the *Boas del Dragon*, or *Dragon's-mouth*, by the residents in Guatemala. It is for the most part rather smaller in size than the above-named typical kind. The sepals and petals are of the same colour, but the lip is of a rosy-purple, having a deep-rose coloured blotch at its base.

E. ATROPURPUREUM RANDIANUM is a somewhat newer kind, that has been found in a new neighbourhood, that is at a place called Tefé, on the banks of the River Amazon, and other spots. It differs from other varieties in having flowers slightly superior in size to even those of the typical plant; but they are of the same stout texture. The sepals and petals are broader and of a greenish-brown, margined with light yellow, the large lip being white, with a deep-rosy purple blotch at the base. All these plants are superb ornaments to the stove or the Orchid-house, and last a long time in full beauty.

MATT. BRAMBLE.

ORCHIDS IN A VINERY.

HAVING a vinery about 20 feet long and 12 feet broad, but unheated, I determined to put a "Syphon" gas-stove in it, and try to grow a few Orchids. I owe a debt of gratitude to the gentleman who writes under the title of

"Matt. Bramble," for all that I know about Orchids comes from reading his advice on the subject. My plants have cost me on an average two shillings each. At first, of course, they are small, but in a very few years they increase greatly, not only in size, but in value. All the care they get is to be watered once in ten days or so in the summer, and less frequently in the winter, and in the spring, summer, and autumn I wash their leaves with a soft sponge once in two months. The windows of the house, top and sides, are opened every day, except in frosty weather, at eight, nine, ten, or eleven a.m., according to the time of year, and closed again at three, four, or five p.m.

THE FLOOR of the vinery is kept constantly damp, even in the most severe frost. In December, 1892, and in January, 1893, the evaporation from the damp floor gathered on the inside of the glass roof, and there froze into a solid sheet of ice every night for several weeks, not melting each morning until ten a.m., and sometimes not until eleven a.m., yet the Orchids did not seem any the worse, and in due course have flowered this year very finely. One of them, *Coclogyne cristata maxima*, had ninety-six large blooms open at once in March, and remained four weeks in full beauty. I enclose you a list of the Orchids which I have in this cold house, and which have no shading at all, except what they get from the leaves of the Vines. Fifty or sixty pounds of ripe Orapes is a very pleasant adjunct to the beauty of the Orchid flowers; besides this I find that *Tuberous Begonias* and *Olexiinas* thrive very well in this house. I never water overhead, but place the pots in a pail of tepid water until well soaked. It seems to me that a very great deal of pleasure can be derived from a very small outlay, and with very little trouble or expense after the first outlay. I am not sending you this account in a spirit of boasting, but in the hope that some who Iain would, but yet fear to try, may be encouraged by my experiences. The following is the list of Orchids in bud or in bloom during the excessively cold weather of December, 1892, and January, 1893: *Odontoglossum Rosae majus* (lasted fifteen weeks), *O. Edwardi* (lasted four weeks), *O. Cervantesi* in bud, *Cypripedium insigne* in bud, *C. Maulai* (lasted five weeks), *Coclogyne cristata* in bud. This is a full list of Orchids in vinery in addition to the above: *Cypripedium barbatum nigrum*, *O. Schlimi*, *C. grandiflora superbiens*, *O. macranthum*, *C. apotabile*, *C. calceolus*, *O. venustum*, *O. Sedeni*, *Calanthe Veltchii*, *O. veratifolia*, *Cattleya citrina*, *O. Mossii*, *O. Mendeli*, *Coclogyne cristata maxima*, *C. speciosa*, *Cymbidium eburneum*, *C. Lowianum*, *Dendrobium nobile*, *D. thyrsiflorum*, *D. chrysotaxum*, *Lelia anceps alba*, *Phaius grandiflorus*, *Lycaste Skinneri*, *Cochlidia vilesanica*, *Odontoglossum Alexandri*, *O. Rosae majus*, *O. maculatum*, *O. pulchellum*, *O. pnicellum majus*, *O. grande*, *O. citreum*, *O. triumphans*, *O. Uro-Skinneri*, *Dendrobium densiflorum*, *Sophranitis grandiflora*, *S. violacea*, *Oncidium flexuosum*, *O. sphaerolatum*, *Trichopilia suavis*, *Psecocheia olivina*.

ORCHID LOVER.

4378.—**Neapolitan Violets.**—You may obtain a few flowers from the plants in the spring if they are carefully taken up towards the end of September with a good ball of soil attached to the roots and planted in a cold frame in gritty soil, keeping the plants close up to the glass. No artificial heat is necessary during the winter, simply protecting the foliage from frost by covering the glass with mats and the sides of the frame with long manure or leaves, so that the roots are not frozen. Violets during winter do not require much moisture at the roots, just enough to maintain the soil moist, but they enjoy abundance of air. Directly the thermometer out-of-doors stands above 35 degs., pull the lights entirely off the Violets. A mounding of decayed leaves an inch or so thick laid on the soil between the rows will assist the growth for the next month. The soil should not be allowed to become dry, so as to check the growth of the new leaves that are now appearing above the soil; but these should be encouraged to grow freely, so as to make up somewhat for the time lost in allowing the plants to suffer so severely during the recent drought.—S. P.

Put them in the frame, but not yet. Let them grow, and, if possible, get the buds opened, and plant in frame in September, towards the end of the month. It was a pity the plants had not been dipped with mulch and water during the drought.—E. H. KIRK

FRUIT.

4385.—**Vines in pots.**—The pots are too small, and probably the canes are in the same condition to fruit satisfactorily. As it is too late now to do any good by shifting them into larger pots, you had better let them remain as they are until the winter. Early in December cut them down to two eyes, and a month later shift them into pots 14 inches or 16 inches in diameter. If they are grown on in these pots next year, and the canes trained near the glass, they will give a crop of fruit the next season.—J. C. C.

—The young Vines should be repotted into 10-inch flower-pots, using good retentive loam, well enriched with decayed stable-manure and half-inch bones. Pot firmly, and if the Vines are well managed good fruiting canes can be produced from eyes put in about the end of January or early in February. I have had such Vines strong enough to well fill 11-inch and 12-inch flower-pots with roots. Seven-inch pots are not large enough to fruit Vines in. I have seen a few nice bunches obtained from 9-inch pots.—J. D. E.

—Seven-inch pots are too small for fruiting Vines, if the Vines are very strong. Shift at once into 10-inch pots. It not likely to make fruiting-cases this year the 7-inch pots might do for this season, the Vines in be out down in winter, and a fruiting-rod to be grown next year.—E. H.

4372.—**Melons.**—I am afraid you commenced too late in the season to prove successful with Melons. Amateurs should get their plants set out on a warm hot-bed by the middle of May. It is too late now for them to do any good this season. From the information you send I think you have given them too much water, and allowed the growth to get overcrowded. Another year do not stop the shoot on which there is any fruit forming, but lift it well up to the light, so that the sun and air may assist in fertilising the flower.—J. C. O.

—The young Melons were not, in garden phraseology, set, or the fertilisation had been imperfect, and the fruit failed to swell. This might arise from more than one cause, the most likely one being planting in soil which is too light and too rich, which has produced great growth. Melons do best in rather heavy loam, made firm.—E. H.

4364.—**Strawberry border.**—Now is a good time to set about the preparation of the land for a Strawberry plantation. It is a mistake to defer the planting until the winter or even during the spring. Plants put out before the end of September will produce a fair crop of fruit next season; but those planted later will not do more than become established in the ground for another year. Commence by trenching the soil 18 inches deep, keeping the top spit still on the surface. The ground should be liberally manured; nothing is better than half-decayed farmyard manure. This should not be buried too deeply, or its goodness will be lost before the roots reach its vicinity. Choose showery weather for planting, and carefully lift the runners from the soil where they were rooted, planting them carefully with a trowel so that the roots are not cramped, but spread carefully out in all directions. The rows should not be less than 2 feet apart, and the plants 18 inches in the rows. The kind of soil and the manner of growth is, however, important; in some localities the plants make so much more foliage than in others that more space is necessary. Keep the plants free from weeds, and the soil regularly stirred between the rows. Except for the purposes of forming a collection, a great number of varieties is neither advisable nor necessary. *Vicomtesse Hériotte* de Thury is about the best of early sorts. *Sir J. Paxton* as a main-crop variety and *Waterloo* as a late bearer are about all that are necessary to give a full supply of fruit the whole season.—S. P.

4385.—**Vines in a cool house.**—I suspect the cause of the leaves becoming yellow is owing to the roots becoming too dry, or it may have been the work of the red-spider, although there is a difference between the changing to yellow from drought and to a rusty brown from the work of this insidious pest. Either cause will bring about the damage to the leaves—in any case, the loss of foliage is injurious to the Vines. Thoroughly soak the border, whether it is an inside one or not, with clear water, wetting every particle of soil where there is a root. In the evening, after a hot day, thoroughly syringe the foliage with clear water, using some force to

the underside of the leaves. If the foliage exhibits an improvement in colour cease syringing for a few nights. When the Orapes are cut well syringe the Vines with Tobacco-water, soft-soap, and a small quantity of sulphur added, choosing the evening for the operation, thoroughly washing the leaves the next morning with clear water. Repeat this dose several times, even if the leaves should appear to be cleaned from the insect.—S. P.

CORDON-TRAINED FRUIT-TREES.

ALTHOUGH the cordon form of training fruit-trees may not excel other modes of training, there are circumstances connected with it which render it peculiarly well adapted for certain



Rednettle du Canada Apple.

purposes, particularly Pears on walls. In this case its advantages are manifest; the trees not only come into bearing quicker than when fan-trained, but one is able to grow a tolerably large collection of varieties in a limited space—a particularly valuable feature belonging to this mode of training, for in but few places is a large hulk of any particular variety required. Five or six dozen fruits of such large sorts as Doyenné du Comice will suffice for the majority of people. The old adage, "Those who plant Pears, plant for their heirs," is no longer applicable to this improved form of fruit culture. In saying this, I do not mean that cordon-trained trees are more certain bearers than any others, because they are not. Our climate is such that no form of trained tree escapes its influence. Therefore, as regards securing regular crops, one form of training is about as good as another; but the fact that the trees come into bearing the third and fourth year after planting, and that the cordon plan admits of a wider choice of sorts, is sufficient to stamp its merits. Even away from walls cordon-trained trees are much better than pyramids, and why they should be so is not difficult to explain. One word, in fact, clears the matter up—viz., shelter. I maintain that a cordon-trained tree whose branches are not more than 18 inches from the ground gets a great deal more shelter from surrounding walls and other objects than a pyramid from 6 feet to 10 feet high; and this difference as regards shelter is sufficient to explain, as I have said, why cordon Pears bear more regularly than pyramids, and the same remark is equally applicable to Apple-trees trained in the same way. In the matter of stocks for Pears, the character of the soil must influence the decision. In a strong soil, fairly retentive of moisture, the Quince is no doubt the best stock, as it promotes early fruit-bearing; but in other kinds of soils the Pear-stock is more reliable where a judicious system of root-pruning or lifting is practised. Many prefer the Quince as a stock where the soil soaks it, and when they have come to understand how to treat it in particular cases, on account of its reducing the vigour of the branches; but we have proved in our own practice that, when judiciously handled, the Pear-stock can be made to produce a fruitful tree nearly as soon as the Quince. The direction in which the branches are to be trained is a point on which there is some difference of opinion, some preferring the oblique, and others vertical training. The oblique form has, however, a better appearance than the vertical when the trees are trained against walls.

In regard to pruning this form of tree, I do not agree with persistent pruning. I am satisfied that that system does not increase fruitfulness. In my own practice I go over the trees twice during the summer with pruning nippers. Early in July the leading shoots are nailed in, and all the others are shortened back, so as to leave about 1 foot in length of the young wood. In the case of vigorous trees they soon rush into growth again, and send out two or three young shoots from the points of the young wood that was headed back. By doing this we preserve the buds close home, so to speak, intact, and at the same time make the appearance of the trees presentable. About the end of August I again go over them. This time I cut the shoots that before were topped back to a spur. If after this there is any disposition in the tree to form any flower-buds on the spur, there is time enough for it to do so; but I do not prune with the idea that I can always place a fruit-bud where it is wanted. If a tree is managed in a rational manner, that is to say, if the roots are fairly well nourished, and any excess of vigour checked by judicious root-pruning, it will always produce more fruit buds than it can mature fruit. With respect to the management of the roots of cordon trees, if they are Pear-trees on the Quince and form a single cordon, we may be sure that the soil will soon get full of roots, and that what goodness it contains will soon be exhausted. It will, therefore, be necessary to keep up fertility by rich dressings of rotten manure spread on the surface. This is best laid on now, so that the rain may wash what nutriment it contains down to the roots, and unless the soil is naturally holding in its character, trees growing on the Quince-stock will want assistance in dry weather in the way of watering. Now espalier and cordon Apples and Pear-trees should be planted near the edges of walks. Plant them the same as other trees, and they will require some stakes or other supports to train the branches on. This type of tree produces very fine fruit, and is especially useful for small gardens. The first season it is necessary to keep the trees quite free from insect pests, and on no account overcrowd the growth. Pinch off the growth with, if possible, the finger and thumb, which is better than a knife. Stopping promotes fruit-buds at the base of the spurs. There is then less need for pruning in winter. Four very good Apples for growing as cordons or espaliers are White Calville and Reinette du Canada, two very good cooking varieties; and for the dessert, Cox's Orange and Ribston Pippins. J.

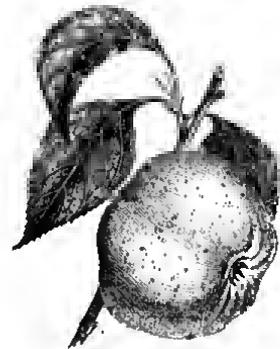
4834.—Early Strawberries.—The use of glass frames will, of course, hasten the ripening of the fruit if you attend to the ventilation and give the roots of the plants sufficient water. Noble is the earliest of all the large-fruited kinds; but if you prefer flavour to size you had better select King of the Earlies. With regard to planting, if you can get early runners that were laid in pots they would give you a few fruits next year if planted at once. I observe, however, that you do not take possession of the garden until Michaelmas, so you had better defer planting until next spring. Before planting mark out the space your frames will cover, and set out the plants so that the frames will cover a certain number without injuring any.—J. C. C.

4394.—Mealy bug on Vines.—This insect is about the worst that Grape-growers have to contend with. It is possible to cleanse the Vines, but much persistence is absolutely necessary to acquire the end in view. The hunches may be cleaned by thoroughly washing them with clear water, applied with force through the syringe in the evening. It can be more effectively done after the Orapes are cut, however, if one person holds the bunch firmly in a downward direction, and the second forces the water amongst the berries, the mealy-bug will be forced out of its lurkings. If the syringing is done two hours before the Grapes are required for use, the berries will dry in that time, if the hunches are hung up where the air can pass through them. After the Grapes are all out the Vines should be thoroughly washed with Tobacco-water and soft-soap. One pound of Tobacco paper, thoroughly well soaked in hot water, to 1½ lb. soft-soap, will suffice for twenty

gallons of warm water. Repeat this dose in a week's time, and thoroughly wash the Vines every night with clear water also. When the leaves have fallen, and the Vines pruned, remove any loose pieces of bark that would provide a hiding-place for the mealy-bug. Thoroughly scrub the canes with hot-water and soft-soap at least three times during the dormant period of Vines. When new growth commences to push the following spring, some few hunches are sure to make their appearance. At once these should be killed. Nothing is better for the purpose than Fir-tree-oil, diluted with water at the rate of one part to three, just touching the insects with a small brush. Inconstant attention throughout the whole of the growing season will reward the cultivator with clean Orapes, if the Vines have not absolutely cleaned themselves, and without the risk of employing insecticides that are dangerous in inexperienced hands.—S. P.

4389.—Old Vines.—Your suggestion of replanting the viney with new canes in a properly prepared border is undoubtedly the correct one in preference to attempting to renovate the old Vines. If a new border has to be made for these it is far better to make it for the young canes, because these latter will exceed so much better than the old Vines put into a new border. Whether you plant new Vines or renovate the old ones do not make the border too deep—2 feet 6 inches of soil, with 9 inches of drainage is ample. Arrange the base of the border in such a manner that surplus water runs to one side to be carried away by a properly-laid drain, thus preventing stagnation of the roots by too much moisture laying about them. Over the drainage lay a single, freshly-cut turf to prevent the fine soil running down among the drainage, and thus choking the passage-way for water. Do not add fermyerd-manure to the soil; but half-inch bones at the rate of ½ cwt. to every load of compost. If the soil be heavy add charcoal and old lime rubble freely. If freshly-cut turf is employed for the border do not cut it up too small, pieces 4 inches square being fine enough. The border should be made when the ingredients are in a fairly dry state, so that it can be trodden down firmly, which could not be done if the soil was wet, for fear of its caking together. Any time during the autumn or winter is a suitable period for making a new Vine border. The month of February or March is a good time to plant new canes. If the border is an outside one it should be covered to prevent it becoming too wet before the roots are running into it, thus causing the soil to be an inert mass. If the old Vines are retained cut several of the rods off close to the junction from where they spring, and thus encourage other shoots to push into growth and make stout canes.—S. P.

— It will pay better to take the old Vines out and plant young ones, doing the work at once. Still, we know old Vines have a good deal of recuperative power, and if



White Calville Apple.

the roots are carefully lifted, and a good border made for them, there is no reason why they may not recover. The Vine is a long-lived plant, and under good management all things are possible.—E. H.

4390.—Treatment of fruit-trees.—When young-trees are planted in even moderately rich soil they invariably make a quantity of gross growth. The strongest shoots should be cut out entirely at once, provided there are

(others near to them) will retain the shape of the tree; and if these latter are comparatively weak, as compared to those so strong they will be preferable to the stronger ones. Train all the shoots as thin as space will admit—quite 4 inches should be allowed between them; where the growth is strong 6 inches is not too much from one shoot to its neighbour. When they are retained cut numerously the leaves of one shoot overlaps those of its neighbour, thus preventing perfect maturation of the wood; without this latter it is useless to expect a full crop of fruit. Any lateral growths upon the current year's shoots should be cut off at once, thus giving more space to the main shoot. It will be well to root-prune the trees the first week in October. Cut a trench 3 feet from the stem as deep as roots are found, covering all cleanly at the side of the trench nearest to the tree, paring the end of each with a sharp knife to induce them to make fibrous roots. With this check, and the shoots trained thinly, a full crop of fruit may be expected next year.—S. P.

4366.—Grapes splitting.—Defective treatment is the cause of the berries of all Grapes splitting. Some varieties, though, are more subject to this than others, notably Malheur Court, which is a thin-skinned variety. In the case of Gros Colman I should say the soil has been allowed to get too dry several times, thus giving a direct check to the swelling of the fruit. Are the berries affected by rust, which is distinguished by a rusty appearance of the skin, which injures the tissues, preventing the berries expanding properly, and causing them to crack in consequence? Are you sure the variety is Gros Colman?—S. P.

—Irregular watering will cause Grapes to split. If the vines had been allowed to get dry at the root, and then heavily watered with stimulants, the skin would split from the sudden pressure.—E. H.

THE KITCHEN GARDEN.

AUTUMN-SOWN ONIONS.

WHEN well cared for, autumn-sown Onions are a very useful crop, as they commence to come in, or at least are large enough for use during the spring if varieties suitable for the purpose are selected. They also form the main crop for summer use, and are valuable far into the autumn when well ripened and stored. By the spring months the main crop of stored Onions will be over, and if preparation is not made now, or at least from now until the end of the month, or according to the district, Onions will be lacking when they are really required for daily use. Indeed, where the main spring sowing partially fails through unforeseen circumstances, such as from the depredations of the Onion-maggot, mildew, or, indeed, very late ripening, it is essential that autumn-sown Onions should not be overlooked as a means of keeping up the supply. Occasionally one hears of failures through frost during the late winter or early spring months, but such losses rarely occur. I think the failure of autumn-raised Onions may fairly be attributed to too early sowing, coupled with a loose soil, those being just the conditions to favour a stronger and earlier growth than is necessary for their successfully combating severe or prolonged frosts when these should happen to be of undue severity. What is needed for their successful growth is a well-drained soil.

THE soil should also be in a fertile and well-pulverised condition. It is rarely that the maggot attacks Onions which are sown at this date, so there need be little fear of injury from this cause. It will be noticed that a rather gritty soil makes the best seed bed, and on stiff clay land it will be found very advantageous to add some other matter to assist in getting the soil into this condition. Coarse sand, burned refuse, and such like material are the best and more likely to favour a successful growth. Another source of failure with these autumn raised Onions in private gardens is on account of the seed bed not being in a sufficiently exposed position. Very often it is in close proximity to trees, and as the leaves from these fall they blow amongst the Onions and smother them up. Autumn-raised Onions follow well on land recently cleared of early Potatoes or Cauliflowers, and the soil has been well prepared for these or peas, or after manuring, very little assistance will be needed

in this respect. It must not be inferred, however, that poor soil will give equally good results, and if there should be the least idea of the soil wanting in fertility, then ought the site to receive a dressing of well-rotted manure. In either case, whether the soil requires manuring or not, a dressing of sifted burned refuse and soot should be applied direct to the surface previous to levelling down and drawing out the drills. The soil must be equally trodden over so as to form a firm surface, this being preferable to rolling.

THE SEEDS if sown thinly will germinate evenly, and the seedlings will not require thinning in the least until fresh growth starts in the spring. Surface-hoeing must take place directly the young Onions are visible, this keeping down weeds. When kept clear the air circulates freely among them, and a slight surface stirring will impart a healthy growth, and such as will withstand frost. Different districts have certain times for sowing, and what would be early in one district would be quite late enough for another, and vice versa. In the northern districts the first week in August is none too early, and in the south from the middle to the third week. In either case this will give time for the seedlings to appear well above the soil before the wet days of autumn are upon us. Those of the

TROPICAL section are generally selected for autumn sowing, a good selection of Giant Rocca being perhaps the best for general use. It is mild in flavour, grows to a large size, and is also a tolerably good keeper when harvested well. This is most important when the bulbs require to be kept as long as possible; consequently it will depend upon how this part is carried out whether they will decay quickly or not. The Early White Naples and large Italian are also good kinds of the same section; the former, besides growing up to a useful size quickly, is also a good kind for drawing young during the winter. The White Spanish and also Dauver's Yellow may also be sown now, although it is seldom these are selected for the purpose. This reference would not be complete without a note being made of that excellent little Onion the Queen. It must not be classed with the former, but is most useful in case of emergency if the ordinary kinds are likely to be short the following spring. Instead of sowing in the open with the large kinds, select a sunny border where the soil is fairly light, rich, and also tolerably firm. Shallow drills should be drawn 7 inches or 8 inches apart and the seeds sown thinly. The young plants will grow quickly and be found valuable early in the spring. A.

TOMATOES OUT-OF-DOORS.

THIS has been an exceptionally favourable season for Tomatoes, as they enjoy plenty of heat and bright sunshine, provided the requisite moisture at the root is supplied. One of the greatest drawbacks to the successful outdoor culture of this popular fruit is the shortness of our summers, as it is rarely safe to plant out even against walls until the month of May is half gone. This year one might have safely put their plants out early in April, as we had no frost of sufficient intensity to hurt plants that had been well hardened off by exposure, and where they were got out early, and a liberal supply of moisture given during the intense drought that prevailed up to June, there are now fine crops in various stages of ripening. Should the weather continue favourable, we may reasonably hope for even late crops to ripen well, as I have picked ripe fruit from self-sown plants that are carrying fine crops. Thus far Tomatoes, like Potatoes, show no traces of disease, the weather having been so fine that it looks as if our climate had for the time settled down to something like they get in the fruit-growing regions of California, where the great secret of success is irrigation. If we are likely to get seasons anything like the present, it will be a remunerative thing to go in much more largely for a sufficient supply of water, so that crops may be copiously supplied. J. G. H.

4374.—Manure.—If peat-litter manure obtained from the stables, it may be freely used in any part of the kitchen garden. It has been used for over ten years, and has no hesita-

tion in saying that its fertilising properties are greater than that of stable manure where straw has been used for bedding the horses. The reason of this, I believe, is owing to the spongy nature of the peat, which absorbs the water, retaining the fertilising properties contained in it.—J. D. E.

4395.—Tomatoes.—The treatment appears right, except that too much syringing is done; some of the best growers never syringe at all. The roots are kept moist, and occasionally liquid manure is given, but the soil is not kept in that saturated state thought necessary by some persons. In a house none too well ventilated too much moisture is a sure precursor of Tomato disease. It is a good plan to give the trusses of bloom a gentle tap about the middle of the day to assist in the dispersal of the pollen, and thus ensure a perfect set. Neither the flowers nor the fruit need thinning, except for exhibition purposes; for ordinary use or for market thinning need not be practised. Continue to train up the leader, removing all side shoots as they appear, but do not denude the plants of too much foliage. This is no easy to give the fruit that flavour and substance to entitle them to being reckoned of high-class quality. Upon the first appearance of disease in the leaves, which is a small black speck, lose no time in dusting the parts affected with brown sulphur, and keep the surroundings somewhat dry.—S. P.

—The treatment described is all right so far; the plants, especially those in pots, require a lot of water this tropical weather. They will, of course, do better if trained near the glass than at a distance from it, but as in an unheated house they will not probably do any good after the middle of October, at the latest they should be stopped about the end of this month, and not allowed to make any further growth.—B. C. R.

4382.—Building a Tomato house.—The width of the bed depends upon the number of rows of plants you intend having, or can find room for. For a single row or bed a foot to 18 inches wide will be quite sufficient, for two rows it should be 2½ feet or 3 feet, and for three 4 feet to 5 feet. The depth may be 18 inches or 2 feet, including drainage, but if the subsoil is naturally porous, do not drain it any more. What do you mean by "stopping the leaves at a joint?" If cutting back the leaves themselves is meant, all the lower ones can be shortened to the last pair of (large) leaflets as soon as the plants become strong—say 3 feet high. If the plants do well, they will fruit all the way up without any stopping, but if weakly stop them beyond the fourth or fifth truss.—B. C. R.

4379.—Tomatoes curling up.—It is only the older leaves that curl; it is quite natural for them to do so, and no harm will result. I regard it as a kind of indication that the plants are doing well indeed—that is, of course, if they are healthy in all other respects.—B. C. R.

White African Lily.—The blue-flowered *Agapanthus umbellatus* is familiar to most gardeners, but although the beautiful white-flowered varieties are by no means new, one does not often see them, yet they are quite as easy to grow, and the flowers are truly white, not milky-white. There are three or more distinct forms—namely, *albus*, *albus maximus*, *albus albilorus*, and *caudatus*, but they evolve themselves into practically one for all general purposes, this being *maximus*. This is a variety thoroughly worthy of good attention, and in a large tub has an exceedingly fine aspect. The flowers are produced in very large umbels, and the individual blooms far exceed in size those of the ordinary type, whilst they are of the purest white, excellent for cutting. If only one white-flowered variety is desired, this may be chosen, and as regards cultivation few things are more easily grown either in large pots or tubs, but they have a very quaint, old-world look in tubs, whilst under such conditions they may be placed either in the conservatory or, during the summer months, in the open ground, at which time it is necessary to give plenty of water. In the winter they may be taken under cover, and if no other place is available store them in an outhouse. Good loamy soil is the most suitable, as starvation treatment, which the common kind often undergoes, will not bring forth the best results, and flower-spikes to perfection.—V. C.

freely. As soon as the young plants were large enough to prick off they were planted in boxes, and I have grown them in flower pots during the present season because I was not sure whether they would flower out-of-doors. They have been out since May, and would have flowered well in the open garden had they been planted out in May. A few of them will not flower, but most of them will do so.—J. D. E.

4319.—Box.—Prepare the site of the intended line of Box by digging, breaking the soil up well, leaving the surface level. Then tread it down firmly, applying the same amount of pressure all along the line. Rake it perfectly smooth and even; stretch the line along from end to end and draw it tight; this will show the low places if there are any. Make up the inequalities of surface by adding fresh soil, and then heat it down with the back of the spade. Rearrange the line in the required position, and out set the trench from 4 inches to 5 inches deep, according to the size of the Box, so as to have a clean, hard surface to lay the Box against. Dress the Box by cutting off the long roots, and trim the tops quite even. Pull the Box into fair-sized pieces, and in planting hold in position with one hand and use the other to place the pieces in the trench, covering the roots with earth as the work proceeds, pressing it in firmly. Leave about 1½ inches of the Box above the ground. Return the soil against the edging with the spade, and tread it down firmly by passing the foot along with the toe against the edging. The gravel, which should have been turned back, will then be replaced. When the other side of the path has been planted in like manner a sprinkling of fresh gravel and the roller will make a neat finish. If Box is planted in dry weather water should be given till the roots begin to start.—E. H.

4328.—Pansy seedlings.—An east border against a house would be a very good situation for Pansies. The seeds of the Pansies should be sown in July, so that they may be ready to plant out in September where they are to flower, or small plants put out now would become stronger and give flowers earlier in the year. They should be planted in deep rich soil, well manured. It would be too late to plant them in spring for early flowering. Borders on the east side of a house are frequently much exposed to winds. A draught is caused by a fence on one side and the wall on the other. The east wind rushes down in the winter and early spring, but if sheltered from this draught they will do very well.—J. D. E.

It does not much matter what position these occupy; but the blooms will come larger and brighter if in a partially-shaded spot. The time of planting is also immaterial; it must depend entirely upon the stage of our seedlings. Pansies invariably bloom in the spring and early summer, and are perfectly hardy.—P. U.

4284.—Carnations, &c.—The difference between Carnations, Pinks, and Dianthus has been fully explained in these columns in previous numbers. The Pink is a garden flower has been produced from a distinct parentage. *Dianthus plumarius* is the reputed parent of the Pheasant Eye or exhibition Pink of the florists; but some sorts have a nearer relationship to *Dianthus deltoideus*. The growth of Pinks is more slender than that of Carnations, and if planted together in the borders the Pinks produce their flowers very nearly a month earlier than the Carnations. *Dianthus caryophyllus* is the parent of the Clove Carnation and Pinks, and as they have been cultivated in English gardens for at least three hundred years, they have taken on a great variety of form and colour, and the florists for exhibition purposes have divided them into sections. They place the bizarre Carnations first; the colours are scarlet and maroon on a white ground, or purple and pink on white. The flukes have but one colour on a white ground, and these are scarlet, purple, rose, and pink. The softs are one colour throughout—rose, pink, scarlet, orimson, purple, yellow, white, &c. Pinks are white, with a margin to the petals of various widths and colours; sometimes there is merely a thin, hair-like line of colour, at other times the margin is an eighth of an inch wide. The colours are deep red, rose, red, purple, rose, and scarlet.—J. D. E.

4362.—Herbaceous plants.—This term signifies plants that die down every year. Herbaceous Phloxes, *Michaelmas Daisies*, and so forth. I have repeatedly given lists of the best things in GARDENING, but here are the names of

a few plants to commence them. Those that bloom in the spring would comprise the *Adonis vernalis*, Rook Madwort, *Alyssum saxatile* (a beautiful flower, a mass of yellow in the spring months), *Anemones* of various kinds, *A. nemorosus* in variety, *A. apennina*, *A. fulgens*, *A. pulsatilla* (the Pasque-flower), *A. sylvestris*, the various forms of *Candytuft* (*Arabis*), the Thrift (*Armeria vulgaris*, very good for edging); *Aubrietias*, not forgetting the rosy-flowered *A. Leichtlini*, *Cheiranthus Marshallii* (Marshall's Wallflower), the Lily of the Valley (very pretty if not planted too thickly and in a shady spot), *Dielytra spicata* (the well known Lyre-flower, very good in a light soil and not too exposed a position), the *Cantianella* (where it can be well established), the spring *Heliolebas* (beautiful things), forms of *H. atro-rubens*, &c.; *Forget-me-nots*, the bulbous *Dog's-tooth Violets*, the *Winter Aconites*, the violet-scented *Iris reticulata*, *Daffodils* (in variety), *Dwarf Phloxes*, *Crown Imperials*, *Primulas*, *Saxifrages*, *Soillas*, or *Squills*; particularly varieties of *S. campanulata*, *Tulips*; not forgetting the orimson-flowered *T. fulgens* and *Tufted Peneies*. As regards the summer-flowering, get *Achillas*, the *Peal*, *Hollyhocks*, *Alstroemeria aurea* (if you have a warm, light border), *Chrysanthemum* (*C. latifolium*) summer-flowering, *D. Iphigenia*, *Oreopsis lanceolata*, *Campanulas*, *Funkias*, *Scarlet Lychnis*, *Cladolus*, *Perennial Columbine*, *Sanflowers* (particularly *Helianthus multiflorus maximus*), *Herbaceous Lobelias*, *Eryngium planum*, *E. Olivarianum*, *E. giganteum*, *Lythrum roseum*, *Evening Primroses*, *Herbaceous Phloxes*, *Galega officinalis* and white variety, *Pyrethiums*, *Roses*, *Sedum Sieboldi*, *Gypsophila paniculata*, *Cerastiums*, *Pinks*, *Diotamnus*, *Senecio pulcher*, *Tufted Pansies*, *Dahlias*, and annuals of many kinds.—C. T.

4377.—Clematis attacked by mildew.—It is difficult to say what is the cause of plants being attacked by mildew; but it is usually very prevalent at this season of the year. *Roses* in the open garden are usually badly attacked with it in August. They are very bad this year, owing probably to the greater dryness of the soil about their roots. The *Wistaria* growing over the *Clematis* would have the effect of keeping them dry, and hence they would be more liable to be attacked by mildew. *Wistaria sinensis* itself does not suffer from the attacks of this parasite. The best way to get rid of it would be to dissolve about two ounces of soft-soap in a gallon of hot water; mix with it about a quart of a pound of powdered sulphur (flowers of sulphur), and well syringe the affected parts with it. The sulphur soon sinks to the bottom, but it can be kept in solution by syringing into the water each time of drawing it out.—J. D. E.

4381.—Clematis dying.—It is not easy to tell why the *Clematis* should go off in the way described. Possibly something is eating them at the root. If dead, lift them, and see if there is anything radically wrong in that quarter. Possibly the soil is very poor. If the plants were put in late this spring and have not been freely watered, but permitted to carry a heavy mass of bloom, that will account for failure.—C. T.

4371.—Christmas Roses.—I should think that you would succeed well with the Christmas *Roses*, but not so well as in the country. The *Helebores* require moisture and shade. You may plant now in a deep vegetable soil. Get good clumps, and let them develop into bread, spreading masses. If you require flowers to cut, you must when the buds appear place over each clump a hand-light, which will afford the needful protection from fog, wet, and frost. I once had a small plot of Christmas *Roses* near London which did exceedingly well. The soil was fairly rich, and the plants in a half shady, moist position. Each year they gave a fine lot of flowers. *Alfifolius* is the earliest in bloom, but at Christmas *St. Brigid* and *maximus* are the best. The flowers are very pure. You need not grow the plants all the year round in pots. The best way in dealing with those for the conservatory is to lift good clumps from the open when in bud, and transfer them to large pots, or better still baskets filled with *Cocconut* fibre. Keep them in the warmest end of the greenhouse, and you will be rewarded by a fine display of bloom. The next year select other clumps, as they will not bear this forcing treatment two seasons in succession.—C. T.

TREES & SHRUBS.

BEAUTIFUL FLOWERING SHRUBS.

THE usual occupants of the average garden in the way of shrubs are *Privet*, *Laurustinus*, *Laurels*, and *Box*, which have a monotonous, depressing effect when used too freely. One would think from their frequency that it was a matter of necessity to use these evergreens or put up with vacant forecourts, but there are many beautiful flowering trees and shrubs quite as easy to grow, and not afraid even of the smoke and dirt of town gardens.

One might take the *Barberries* as examples of shrubs too little seen, although of extreme beauty, carrying throughout the winter a rich profusion of orimson fruits. The most popular is *B. Darwini*, then we can use the common *Barberry*, *B. vulgaris*, *B. dulcis*, which bears small yellow flowers, followed by ruddy fruits, and the hybrid *B. stenophylla*, all worthy of a place in the smallest garden. It is not possible, of course, to cram all the good things into a limited area, and of *Barberries*, our selection would be *B. Darwini* or *B. vulgaris*, obsoleting from the *Evergreen Barberries*, or *Mahonias* as they were formerly called, the rich, hrenzy-leaved *B. aquifolium*, the leafage of which is excellent to associate with out flowers, *Daffodils* and *Chrysanthomums* in particular. All the *Barberries* will grow freely in ordinary soils, and make a brilliant picture of colour in the winter. Against a wall the *Crataegus pyracantha* or *Fiery Thorn* is very beautiful, the best variety, because producing a freer display of berries, being the orange-fruited *C. Lelandi*. Its rich-green leafage and brightly-coloured fruits are remarkably beautiful in association, and the milky-white clusters of flowers in the summer months possess much attraction. But this is not the only *Thorn* that is of value in the garden. The *Thorns* are, perhaps, the most interesting and charming of garden trees; their picturesque growth, hardiness, vigour, and extreme beauty adapting them for the smallest plot. What exceeds a healthy tree of the double crimson variety, or *Paul's Double Scarlet*? Whilst the range of varieties may be extended, embracing pinks, carmine, and white, but, as a rule, after the *Fiery Thorn*, the selection will have to be limited to one, and that the orimson form of our Common "May." Then we have the *Cockspur*, *Washington*, and *Scarlet-fruited Thorns*, all necessary in a large garden, but must be omitted from small places if a variety is desired.

How seldom one sees a *Catalpa* in gardens, yet it is a splendid tree where there is space for it to spread out and reveal its true character. *C. higuonioides*, or *C. eyringifolia* as it is also called, is the commonest type, its large leaves of great beauty; and then we get in August the *Horse Chestnut*-like flowers, charmingly spotted and very attractive to the eye. I know town gardens in which this North American tree thrives to perfection, and it succeeds better if provided with shelter, and the position is moist. The glorious old

JUDAS TREE has for hundreds of years figured in English gardens. It makes a picturesque growth enriched with purplish-rose flowers. I have seen this old favourite in town gardens, and in the suburban seat of Mr. Leopold de Rothschild, at Gunnersbury, there is a noble example clambering over a wall, for it may be made to embellish a wall, as the *Wistaria*, as well as grown in the form of a low tree. It must be a poor garden and soil that will not grow the quaint, old-fashioned *Cercis*. Brilliant and delightful to look upon when in fruit is the *Cotoneaster*, and on a bank or shrubbery margin the common *C. microphylla* will be quite at home, clothing the bare places with its wiry growths and small leaves, lit up during the winter season with scarlet berries. Sometimes there are stone steps in gardens which it is desired to hide, and the *Cotoneaster* is exactly suited for such a purpose, growing in ordinary soil and positions. It is quite a dwarf, spreading shrub, clothing otherwise bare, unsightly spots with beauty. It appears fashionable to grow upon certain choice old garden trees. Take the *Cydonia* or *Quince*, for example, a picturesque and charming tree, more thought of, perhaps, for its yellow fruits to give flavour to preserves than of its beauty as a lawn tree, its heavy masses of bloom a picture of beauty, the heavy, rich yellow fruits filling the air with

their pungent odor. If such trees were troublesome to grow we should not express surprise at their scarcity in new gardens, but they will thrive in ordinary soil and positions. One often finds many very charming flowering trees and shrubs in a common shrubbery, a kind of arrangement in which free and graceful shrubs are planted so thickly together as to spoil their true beauty. It is impossible to see their proper character, huddled up in this way, putting in a variety of things from Quincea to Mock Oranges. Each tree, shrub, or flower, should tell its own tale, and please by its beauty of form and prodigal display of blossoms. A very interesting class is formed by the Brooms, and *Cytisus scoparius* *Andreas* is very fine. We get a rich association of colour, yellow against velvety crimson, and it is quite hardy, exceptionally free, and a delightful garden shrub. Very beautiful in late May is the White Spanish Broom (*Cytisus albus*), its slender stems smothered with white flowers, a perfect mass, and such an effect may be gained easily, as the Spanish Broom is not difficult to grow, if the soil is fairly light. This reminds me that the Yellow-flowered *Genista praeox* is just as free, every shoot being hidden by the soft-toned blossom, with scarcely a leaf visible. It is such

fection. Covered with flowers in April is *Forsythia suspensa*, the shoots hung with the richly attractive blossom, a brilliant mass of yellow. This is a half-shrub, and may be grown against a wall, permitted to scramble over a sunny bank, or trained in the form of a bush. One of the most beautiful beds I have seen was of this *Forsythia*, the shoots trained over a few sticks placed in the beds for support, and covered with golden bloom, hung gracefully on the slender shoots. One may cover a low wall with it, as in the case of the *Jasminum nudiflorum*, the winter-flowering *Jasmine*, that blooms in the late autumn and winter. The Californian *Garrya elliptica*, is also a winter-flowering shrub, its light-green coloured catkins appearing in profusion during the "dark" months of the year. It is not of vivid colour certainly, but the green catkins are of quiet beauty, and may be cut for filling vases indoors. A good hue of it is an interesting winter feature, but the usual way is to plant this shrub against a wall, where its rich green foliage and abundant catkins are well displayed. I have further notes to make. V. C.

4376.—Cutting back Hollies.—Variegated Hollies that are 20 feet high will not

THE CATALPAS OR INDIAN BEAN-TREES.

THOSE who know the American Catalpa will recognise in the accompanying illustration a very fine specimen of *C. bignonioides* in full flower. As may be seen, it has long since attained maturity, and shows plainly the handsome wide-spreading head which an old Catalpa always develops when growing in a suitable soil and climate and in a sheltered spot, so that its head is uninjured by high winds. There is, in fact, no freer object on an English garden lawn than an old Catalpa, as it is beautiful in leaf and highly attractive through harvest time, when, as a rule, it is covered with a profusion of loose white flower clusters, which, in warm climates, are succeeded by a crop of long seed-pods, which look like attenuated French Beans, hence the name Indian Bean-tree. The rapid growth of this tree is a great point in its favour, for from the seeding stage to the flowering period, which occurs under favourable circumstances at from twelve to eighteen years of age, it grows on an average from 1 foot to 18 inches a year, so that in twenty years the tree has reached its full height, which in this country rarely exceeds 40 feet, unless the tree is drawn up by others. When at full height the tree develops laterally and continues to form the broad, rounded head shown in the illustration. Like other large-leaved trees, the Catalpa needs a deep, free soil for rapid and luxuriant growth, and though it will sometimes thrive on poor soils and exposed dry spots, it is never seen to such perfection as in deep, moist soil, such as the rich alluvial soil on the banks of rivers or lakes. This accounts for the existence of the magnificent Catalpas one sees in the valley of the Thames, where probably more old Catalpas can be found than in any other locality throughout these islands. The Catalpa is peculiarly a tree for very small gardens, because it never grows very large. It is, in fact, one of the few medium-sized trees that can be planted on a small lawn, and as a town tree has few equals, being, like the Plane and the Fig, especially adapted for withstanding the impure atmosphere of towns. The fine specimens we see in London, the Temple Gardens, the squares about Bloomsbury, for instance, quite prove this, and no doubt the tree is benefited by the extraneous and warmth of the atmosphere of a town affords, which tends to ripen the young wood, rendering it less liable to be killed in winter. It is fortunate that the Catalpa is one of the last trees to come into leaf in spring, for if it were early it would always be overtaken and damaged by late frosts, which, indeed, is the case occasionally. The common kind of Catalpa is the North American *C. bignonioides*, also called *C. syringifolia*, or Lilac-leaved, which was introduced to English gardens in 1726. Probably the oldest trees of it that exist here are those about London, notably in the Fulham Palace Gardens, it being one of the choicest favourites of the tree bishop, Bishop Compton, so that it is one of the earliest exotic trees introduced. *C. speciosa* differs from the other in being more erect and taller, with leaves more pointed. The flowers are larger and almost pure white, whereas in *C. bignonioides* they are tinged with purple, and spotted with yellow. The point that makes *C. speciosa* most valuable to us is its more hardy constitution, more rapid growth, and the fact that it flowers a fortnight earlier. The other two Catalpas are *C. Kampferi*, a native of Japan, and *C. Bungei*, from China. Both are modern introductions, and as far as we are able to judge from the largest trees in this country they are not likely to rival the American kinds. W.



Indian Bean-tree (*Catalpa bignonioides*).

cheap, easily-grown, and useful shrubs as these that one wants to encourage in gardens, a complete contrast to the evergreen Box or formal Laurel.

THE COTTAGE GARDEN often boasts of greater beauty than more pretentious plots, and we think it is through a mistaken notion that the things so beautiful in the country are unsuitable for the outskirts of large towns. The *Daphne Mezereum*—more often called the Mezereon—is a very easily grown shrub, the branches covered with purple bloom in early spring, the flowers scenting the garden. Two or three good bushes of this shrub are very beautiful, and in mild years the flowers open before February is over. Let the soil be light and the position sunny, then we may expect the *Daphne* to make our hearts glad with its sweet-smelling flowers, followed by crimson berries. The crimson-flowered *Escallonia macrantha* is a well-known shrub, but must in all northern districts be grown against a wall, either in the southern counties it may be placed freely in the open. I remember seeing very fine bushes of this delightful shrub in the Queen's Garden at Osborne, and visitors to the Isle of Wight who are interested in shrubs and flowers may enjoy themselves to their heart's content in the little island, as in the balmy air plants thrive to per-

stand a rough and ready treatment like younger ones. They have arrived at that age when all the specimens I have met with, even when growing under favourable conditions, decline in vigour. At the same time I see no reason why you should not deal with them in the way you suggest, providing you do the work well. The best way of doing this is to give the roots a top-dressing at once, either a layer of rotten manure, 6 inches thick, or half that depth of rich soil. The effect of this will be that the branches will break stronger when you prune them. With regard to the later operation the middle of March is soon enough. I advise you to reduce the height three feet, not two-thirds their length. One-third is as much as I can be responsible for. Even then the whole of the branches should be dealt with alike, heaving, of course, some regard to the form of the trees. The trees will be somewhat ugly after the operation, but it will only be for a few months.—J. C. C.

—The best time to cut back Hollies is in June. They might be cut back now, but they would not break before spring.—E. H.

Weevil destructive to Beech.—Referring to my letter two or three months ago concerning the injury done to the Beech by weevil, I find the name of it is *Orchestes piceae*. It has done much mischief in this neighbourhood, and it would be interesting to know if the same *O. piceae* is in other parts of the country. I can plain of it.—E. L. A.

4359.—*Choloya ternata*.—This is the Mexican Orange-flower. It is not a really hardy shrub—that is to say, it cannot be recommended for gardening of every kind. But it is surprising to see that even in northern districts, where there is shelter, it will live out unharmed. If, however, your garden is right in the south you may plant the *Choloya* without fear of destruction by frost. It grows quickly, and the white fragrant flowers, so richly scented as the Hawthorn, are in bold relief to the masses of deep-green leaves. Cuttings strike readily in the spring, and may also be put in now. One meets with more specimens in Devonshire than in any other county, but it is essential to give the shrub

shelter, therefore it succeeds best against a wall. A bush of it is very charming, and select a sunny spot to get the growth well ripened. The hardier the growth, so much the better chance the shrub has of weathering the storms of winter.—C. T.

— This is a very effective dwarf shrub for a warm situation. It produces white fragrant flowers abundantly; even small plants flower. Here, in the eastern counties, we find it necessary to plant it against a wall; but in the south or west it would, I have no doubt, do very well in the border. Give it a little leaf-mould.—E. H.

4392.—Ivy on walls.—Apart from the fact that the varieties named are not so well adapted as self-clinging kinds to walls as the Irish Ivy, for instance, the present summer being so hot and dry is not at all favourable to ivies supporting themselves, owing to the scarcity of moisture in the bricks. After several days of successive rains the stems of Ivy plants can be seen thickly studded with white succulent roots, which is conducive to the clinging of the branches to the walls, but seldom has this occurrence been observed this year. There is nothing "ivy" can do but tack the shoots to the walls as they grow, and well soak the soil with water.—S. P.

— The best way to induce Ivy to cling is to encourage it to do so from first planting. When once naturally begins it has to be followed up and is rarely satisfactory. The plan I adopt is to peg the plants down close to the base of the wall after planting, and then they cling from the start and never need the slightest assistance in this respect.—A. H.

— Are the shoots affected with black-fly or similar pests, which would account for their behaviour? It is singular, as all the varieties named grow well, especially Emerald Gem. The only way is to keep them well watered, but if the growth is not vigorous, one could account for it.—C. T.

4393.—Onting Yews.—Better plant the Yews and give them two or three years to get established before the cutting is begun. Yew-trees will break out of old wood any time.—E. H.

HOUSE & WINDOW GARDENING.

CHINESE SACRED LILY (NARCISSUS TAZETTA) FOR A ROOM.

This is a favourite window plant, for it grows so quickly and bears such a mass of sweet-scented blossoms, that it is specially suited to room culture, besides being suitable to grow in water, if preferred. The bulbs should be procured directly they arrive in this country from China (usually early in December), and they only require eight weeks to produce their blossoms, so that they may easily be had during the depth of winter. Place them in shallow bowls, four or five bulbs in a group, with a few stones to prevent them from falling about, and a little charcoal in sticks to keep the rain-water, which should be preferred to hard water, pure. The bulbs should stand in a dark place for ten days to form their roots before starting their leaves, and they may then be transferred to the window of a sunny room with a moderate fire, where they will grow rapidly. They must not be placed in a sharp draught, however, and the morning brushing out, which necessitates both the door and window of the room being open at once, is the cause of many failures, for the owner, coming down to a comfortably warmed room at breakfast-time, fails to consider that the temperature was arctic at seven o'clock that morning, and the plants probably exposed to the full force of the wind. To avoid this danger, room-plants should be sheltered with double newspaper, which can easily be made into a sort of bell-shaped cover by the use of a little wire, over which the paper can be pasted. This prevents dust from accumulating on the leaves, and keeps out the dangerous draught, if placed over the plants at night, besides saving them from the possibly freezing effect of a sharp frost during the night. The only other safe plan is to take valuable plants into a warm bedroom at night, replacing them in the window after the morning arrangements have been completed.

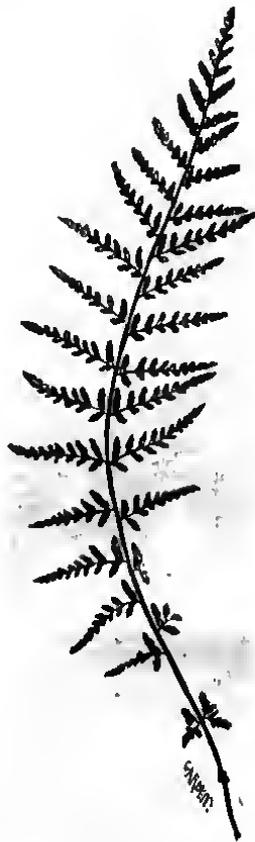
I. L. R.

Roman Hyacinths for a room.—These are the earliest of all the bulbs to open their blossoms, and their graceful white flowers, fragrant, and delicate appearance, are very welcome visitors during the dark winter days. The bulbs should be procured at once, and potted

early for early blooming, putting from three to five as closely as possible in a 5-inch or 6-inch pot near the surface, and using light sandy soil, which should be fairly damp when used, when the bulbs will not require more water for three weeks. After potting they should be placed out-of-doors, standing on a layer of fine coal-ashes, and covered with the same material to the depth of 2 inches. In about three weeks' time the green points of the Hyacinth will be visible on removing the covering of ashes, and the pots may then be taken into a sitting-room, where the bulbs will quickly unfold their flowers. Bulbs potted in August blossom in November. Relays may be easily arranged by potting the bulbs at intervals during autumn.—I. L. R.

DATURA SUAVEOLENS (BRUGMANSIA) IN A ROOM.

This handsome plant, bearing large white trumpet-shaped flowers of delicious fragrance, grows so quickly to a large size that it is seldom used for room decoration. Yet it is so easy to obtain blossoms on a small specimen,



Lastrea sancta.

and these plants are so highly appreciated in the drawing-room for their handsome appearance and sweet scent, that those who have large Brugmansias should not fail to supply themselves with plenty of young-flowering stock. To do this successfully, the sturdy little shoots, which grow low on the stem of a thoroughly healthy plant, should be selected (slipping them off with a little heel), and placed singly in light soil and sand (equal proportions of each), in thumb-pots. These are best placed over a light bottom-heat, in winter, but must be covered with a bell-glass, or an ameteur can put a tumbler over each, and stand them in a sunny window at this time of year, shading them with newspaper from eleven o'clock at first. They will quickly form roots if kept damp and rather close, but the glass must be taken off and dried with a cloth daily, raising it slightly after the first day or two so as to admit a little air, which can be gradually increased. Those who have set up that most useful thing, a "cutting-box," will place their Datura cuttings

in it and find them do well—a "cutting-box" being only an ordinary wooden-box, such as can be procured at the grocer's for a few pence, about 18 inches deep, and any ordinary size according to the number of pots it is to contain. There should be a layer of fine ashes at the bottom of it, from 4 inches to 6 inches deep, and two or three pieces of broken glass to cover it; these are preferable to one whole pane as they can much more easily be arranged to give gradual ventilation if it may be needed. The "cutting-box" may stand in a window where sunshine will warm one side of it, but it must be shaded with a piece of newspaper while the sun strikes on the glass, until the cuttings begin to grow, when they can be gradually inured to both air and sunshine, and are then ready for a shift. To return to the Datura slips; they should be potted on rapidly, giving small shifts and rich soil as soon as roots are formed, growing them close to the glass, with plenty of warmth. Before they are 6 inches high, the flower-buds which were formed in them, when taken off the parent tree, will begin to show, and with thorough support in the way of liquid manure or soot-water, it is possible to have a plant of this kind not exceeding a foot in height with five or six blooms on it at once. Daturas will blossom well too in the winter if given an intermediate temperature, and are then most valuable for decorative purposes. Cuttings can be struck at the present time on the above lines if given heat during winter; otherwise it is better to wait until the early spring, when they can be grown on quickly without much fire-heat. No insect pest, such as green-fly or red-spider, must be allowed to infest them; constant syringing is the best remedy for this.

I. L. R.

Anemones for a room.—Few of our spring flowers are more charming than those of the Anemone family, whether we speak of the wild Wood Anemone or the more gorgeous varieties in cultivation. These are so numerous, and embrace such various tints, every shade of scarlet, white, yellow, violet, and even sky-blue (Anemone apennina, the blue Wood Anemone), being represented amongst them, that a collection of the varieties would be worth having, the Riviera, Ireland, France, Holland, and many other countries contributing distinct yet lovely Anemones. They are all hardy, and can be grown best out-of-doors, their pots sunk in a bed of ashes when needed for a room, so that they can be lifted into position when in flower, and replaced at any time in their ash-bed directly their blossoms are over. Any ordinary compost will suit them, with a little leaf-mould and sand, and they do not require more water than the rain provides until they begin to throw up their blossoms in the early spring, when they should on no account be neglected. A mulch of half-decayed leaves over them during the severe weather will be useful.—I. L. R.

FERNS.

LASTREA SANCTA.

THE Fern of which an illustration is given was raised from spores received from Jamaica. It has never been plentiful, but is elegant, and well deserves a place in every collection. It may be grown in a pot, or planted out in a Wardian case. The fronds vary from 3 inches to 9 inches in length, and are somewhat thin in texture; the segments are finely cut, and rich deep-green in colour. If grown in pots it should be confined to a somewhat small-sized pot, as its roots do not appear to like much soil about them. It grows freely in a mixture of peat, leaf-mould, and sand. A good supply of water to the roots is beneficial, but sprinklings over the fronds with water from the syringe are apt to turn them black. A somewhat close and moist atmosphere is necessary for the plants, and to get the full beauty of the delicate fronds.

J.

4391.—Calined bones and leather.—The calined bones are excellent; mix the floor and dusty part with the soil, in the proportion of a 6-inch potful to two bushels of soil, and use the larger pieces as drainage. About the leather I am not so sure, and should advise caution in using it, though I once had the care of a variety in which a quantity of this material was contained in the soil, and on the whole the plants grew remarkably well. Let it on a small scale first.—H. C. R.

Blush are known as Japanese reflexed. John Doughty is an inquirer of the "Queen" section, a sport from the original Queen of England, and is the same as Mr. Robert Mudie. La Ohlani I do not know; perhaps you mean La Chloise, a dark crimson Japanese flower? Any buds that form now should be "taken"; if they were rubbed off the blooms produced from the shoots made consequent on the removal of the buds would be late, and the flowers would be small. H. W. Tucker, John Doughty, Maiden's Blush, and Val d'Auderré showed buds at the early part of the month I should rub them off, and wait for the next. The shoots on these sorts will have advanced somewhat already.—E. M.

NAMES OF PLANTS AND FRUITS.

Names of plants.—*J. W.*—The *Celandine* (*Chelidonium majus*).—*J. Mc. Leish*.—1, *Aspidium bulbiferum*; 2, *Lomaria nuda pulcherrima*; 3, *Litobrochia uncaelata*; 4, *Cystopteris Fontinalis*; 5, *Polypodium angulare perississimum*; 6, *Selaginella citrinella*.—*C. Cameron*.—1, *Rhynchospora alba*; 2, *Cyperus alternifolius*; 3, *Elymus scicolaris*; 4, *Onoclea sensibilis*.—*J. B. R.*—*Tradescantia procuba*.—*C. R.*—*Periploca grœca*.—*O. Arbuthnot*.—1, *Erechtia serrulata*; 2, *Rumex* (*Banarrizina officinalis*).—*W. H. R.*—*Phalox Cooksoni*.—*Aubors*.—*Silvery-leaved Poplar*.—*Belle Vue*.—*A. Catesium*, probably *C. Bungeoides*; but it is difficult to tell from a small dried flower. —*Amateur*.—*Onocidium laetivium*.—*Pills*.—The *Hawkweed* is *Hieracium aurantiacum*.—*G. H. S.*—*B is Baby*. The others we do not recognize. —*W. H.*—Do not recognize it. It is a most objectionable colour, and not worth growing. —*W. Lloyd Jones*.—Do not name florists' flowers. It is impossible to be correct. —*A Constant Reader*.—*Campanula carpatica*.—*J. W. A.*—*One of the Correas*.

Names of fruit.—*F. Richardson*.—*Apple Wellington*.—*C.*—The fruits were not only rotten, but positively objectionable through being packed in a carbolized box. Seed decent example, and we shall be pleased to name them. —*R. E. G. L.*—1, *Pear Beurre d'Algeron*; 2, *Cox's Orange Pippin* Apple; 3, *Fearo's Pippin*; 4, *Probably Galin*.—*D. D.*—The fine red Apple is *Emperor Alexander*. (A) *Pear Napoleon*. (B) *Marie Louise*.—*A. B. H. J.*—The old Five Crown Pippin. —*X. Y. Z.*—1, *Warner's King*; 2, *Harcourt*.—*F. D. S.*—*Apple Red Astrachan*.—*Burton*.—*Williams' Bon Chrétien*.—*H. P.*—1, *Williams' Bon Chrétien*; 2, *Napoleon*; 3, *Fondante d'Automne*.

Name of vegetable.—*J.*—*Potato*, probably *White Beauty of Hebron*. It is not easy to tell from a single tuber, they run so much alike.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

Mrs. Blackett Ord.—The decayed Peaches are probably due to a want of lime in the soil. Incorporate lime with the staple. —*A. L.*—Please send specimen of leaf. Your description is too meagre. —*One in a Fix*.—Fork them up, as the weeds are then thoroughly eradicated. —*J. Clark*.—Many thanks for your list, but we have already given the names of very fine varieties. —*H. S. C.*—It is the result of the severe drought and ascessive heat. You must water the plants liberally. —*Rat*.—We think *Tropœolum tuberosum*, or some other kind is intended. —*W. M.*—Yes, the leaves would do very well. They are not the best for the purpose, but will do to mix with the others. —*Nevies*.—Do you mean under glass? It is too late to plant now in the open. —*Creditor*.—Of course you are wrong. A collection of 12 kinds, or merely a collection, signifies distinct varieties. —*K. L. G.*—You get the plants cheap. —*Guy Attwood*.—The Peaches look all right, but they are eaten by wasps, or some other pest. It is the variety that is at fault. One fruit was tasted was ripe, and of very poor quality. —*W. Thomas*.—We are not sure that the work has been revised, and, if it has, not by the gentleman mentioned. It is rather a cumbersome volume. Before purchasing tell us what form of gardening you require information on. If you require the book simply for the library, purchase it. —*A Novice*.—Better get some good clumps, if possible. They are not expensive. Plant them in the autumn. —*R. C.*—Gather the fruit about mid-September. You can easily tell whether they are ripe by the way they part from the stalk. —*X. Y. Z.*—Due to the intense heat. About 45 degs., not less, for the hour.

BIRDS.

4451.—*Goldfinch mule*.—I have a Goldfinch mule, six years old. Two years since, when moulting, I observed a bare yellow, wart-like spot at root of tail, which has so remained till this season it has spread all over the back. Can you suggest cause and remedy? It is fed on *Cheary*-seed and *Capern's Mixture*, and seems quite well and really, singing as usual. —*D. R. LAMP.*

4462.—*Bullfinches losing new feathers*.—Will you tell me the reason of my young Bullfinches losing their feathers? They are about 3 months old, and were just changing their colour, but now all the feathers are coming out of breast. The skin is very red, and they scratch themselves with their feet as if something bit them, but cannot see anything. They are kept very clean, and are fed on *Hemp*-seed and green *Groundsel*, &c. Advice what to do with them will be welcome. —*CONSERVAT READERS.*

"Gardening Illustrated" Monthly Parts.—*Price 6d.*, post free, 8d.
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"Gardening" Photograph Prizes.

LIST OF AWARDS.

We have to thank our readers for kindly sending so many interesting photographs, to which we have done our best to do justice. The competition was brought to a close too early to allow of outdoor flowers and fruits and vegetables being studied, and, therefore, in the next column will be found further prizes offered for certain classes of things during the present season. A few words as to the causes of failure. These were mainly a want of clearness and, in many cases, excessive blackness, and sometimes from the photos having little or no relation to gardens or gardening. Some have failed, too, from sending photos of very common things, such as *Lilium auratum*, of which we already possess a good many hundred photographs. For the rest, we have to thank most heartily the successful competitors, who sent us many beautiful houses and gardens, beginning with the forty beautiful studies of country houses, by the winner of the prize in this section.

COUNTRY SEATS AND GARDENS: The Prize is awarded to *Mr. John L. Robinson, R.H.A., Architect & C.E., 193, Great Brunswick Street, Dublin*, for a noble series of photographs of old English country houses.

GENERAL GARDEN AND PLANT PHOTOGRAPHS: First Prize to *Miss E. A. Willmott, Warley Place, Great Warley, Essex.*

Second Prize to *Mrs. Martin, Bournbrook Hall, Birmingham.*

Third Prize to *Mr. J. C. Smith, Nandana, Penrith.*

FLOWERING PLANTS: First Prize to *Miss E. A. Willmott, Warley Place, Great Warley, Essex.*

Second and Extra Prize to *Mrs. Newman, Hazelhurst, Haslemere.*

BEST GARDEN FRUITS: First Prize to *Mr. Norman Blake, Belford.*

BEST VEGETABLES: First Prize to *Mr. Norman Blake, Belford.*

EXTRA PRIZES:

Mr. J. T. Hopwood, 5, Bury Street, St. James, S.W. Photographs of fine old country houses. *Miss E. A. Willmott, Warley Place, Great Warley, Essex.* Two photographs of country houses.

Miss Mabel Oaisford, The Grove, Dunboyne, Ireland. Two photographs of *Olustor Rose* and group of *White Martagon Lilies*.

Mr. G. P'aneon, 32, Winalade Road, Upper Clapton. Two photographs of *Forns*.

Miss Armstrong, 5, Olifton Terrace, Monkstown, Dublin. Two photographs of groups of *Roses* and *Madonna Lilies*.

Mr. C. Mayor, Holmwood, Paignton, Devon. Four photographs of hardy fine-leaved plants.

Dr. Hemphill, Oakville, Clonmel, Ireland. Photograph of view in his garden and *White Currants*.

Miss Clara M. Wardlow, 62, Emors Park, South Norwood. Two photographs of *Madonna Lily* and *Purple Iris*.

Miss Ellen L. Cole, Elmfield, Streetbam, S.W. Photograph of *Beurre d'Amanlia Pear*-tree in full bloom, and *Maiden's wreath* on lady's head.

Mr. Baden Benger, Kuntstorf, Chester. Four photographs of *Lilium speciosum*, *Lilium tosta-cum*, *Cactus*, and *Delphinium*.

Mr. W. Bell, Leicester. Three photographs of *Silver-leaved Begonia*, *Panoum variegatum*, and view in a fernery.

Miss Edith Thompson, Stobars Hall, Kirkby Stephen, Westmoreland. Two photographs of *Sweet Williams* and *Clematis Albert Victor*.

Mrs. Martin, Bournbrook Hall, Birmingham. Two photographs of *Epiphyllum truncatum* (pink), and the *Royal Fern*.

Mrs. Stafford, Waldeck, The Ridgeway, Enfield. Photograph of *Trachelium cœruleum*. *Mr. Martin J. Harding, Lexden Gardens, Shrewsbury.* Two photographs of porch *Roses* in full bloom, and *Carnation*.

Major Arthur Terry, Walton-on-Thames. Photograph of *Pelargonium*.

Miss Crose, Clarkton Road, Wisbeach. Photograph of *Evergreen Honeyuckle* over porch in small garden.

Mr. Isaac Bealey, Mount Pleasant, Hazelgrove, near Stockport. Two photographs of view in *Tomato-house* and of *Cucumber-house*.

Rev. Henry J. Fuller. Photograph of garden of the *Vicarage, Bexley*.

Mr. S. Bowen, Lansdowne, Millbrook, Jersey. Photograph of *Wistaria* in a Jersey garden. *Mrs. J. W. Simcox, 20, Waterloo Street, Birmingham.* Photograph of *Kelway's Delphinium*.

Mr. J. Mayle, 133, Parliament Street, Derby. Two photographs of *Plum Cishorne* and *Fig Brown Turkey*.

Miss Lucy Bethell, Newton Kyme, Tadcaster. Two photographs of country houses.

Mr. F. M. Rammel, 34, High Street, West End, Sittingbourne. Three photographs of fruit.

Mr. James Sharp, Fiechden Cottage, Tenterden. Photograph of vegetable.

NEW PHOTOGRAPHIC COMPETITION FOR 1893.

Owing to the early date at which our prizes were announced to be sent in this year there was not time to properly take many kinds of outdoor fruits, flowers, and vegetables: therefore we offer further prizes for these things, to be competed for during the present year; allowing till the end of November for the work.

Class I.—FLOWERING PLANTS.—A prize of FIVE GUINEAS to the sender of the best collection of photographs of flowering plants grown in the open air or under glass. This series may include flowering trees and shrubs of all sorts.

Class II.—BEST GARDEN FRUITS.—A prize of FIVE GUINEAS for the best collection of photographs of any of our good garden fruits: Grapes, Peaches, Apples, Pears, Plums, or any other fruit grown in Britain. Fruits should not be crowded in dishes if good and clear photographs are sought.

Class III.—BEST VEGETABLES.—A prize of FIVE GUINEAS for the best collection of photographs of best garden vegetables. The object of this is to get fair representations of the finest garden vegetables under the old genuine names. We do not want to exclude real novelties when they are such. In all cases the name of the variety should be written on the back of the photograph.

Class IV.—AUTUMN FLOWERS AND LEAVES.—A prize of FIVE GUINEAS will be given for the best series of photographs of autumn flowers and leaves in the house in a out state for vase, table, or other kind of indoor decoration.

WHAT TO AVOID.—*Out flowers or plants should not be arranged in vases with patterns on them. Backgrounds should be plain, so as not to come into competition with the beautiful flowers. Figures of men or women, barrows, watering-pots, rakes, hoes, rollers, and other implements, iron railings, wires, or iron supports of any kind, labels, and all like objects should be omitted. Dwarf flowers are ineffective when taken directly from above. The camera should be brought low down for such. All photographs should be mounted singly, and not several on a card. The photographs should not be less in size than 5 inches by 4 inches. The following are the rules to be observed by all competitors:—*

In any of the departments, if no collection of sufficient merit be sent in, no prize will be awarded. All competitors not winning a prize will for each photograph chosen receive the sum of half-a-guinea.

These photographs may be of objects in the possession of either the sender or others; but the source whence they are obtained must be stated, and none sent the copyright of which is open to question. There is no limit as to

number, and no fee to pay. The Editor is to have the right of engraving and publishing any of the chosen photographs.

Number.—The name and address of the sender, together with the name and description of the object shown, should be plainly written in ink on the back of each photograph.

Trials.—All communications relating to the competition must be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C., and the class for which the photographs are intended should be marked on the parcel, which must also be labelled "Photographic Competition." All competitors wishing their photographs returned, if not successful, must enclose postage stamps of sufficient value for that purpose.

POULTRY & RABBITS.

QUERIES.

4453.—Fowls ailing.—Will "Doulting" kindly tell me the reason of my fowls making a curious noise, like a cough, and is there any remedy, or is it best to kill them? They are in good condition and have laid very well for the last five months.—IVY BANK.

4454.—Breed of poultry.—Would "Doulting" kindly answer these questions? 1, What is the best breed of poultry for table only? 2, What are the best breeds for table and laying purposes? 3, What breed makes the best mothers?—B. C. M.

REPLIES.

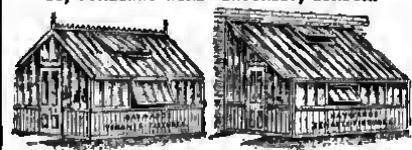
4313.—Chickens losing feathers.—"E. B.," I expect, refers to fullgrown fowls, not to chickens of the year, for it cannot be possible for chickens to be losing their feathers on and off for a year—that is, after they have reached their full size and adult plumage, because they are then arrived at maturity, and are therefore cooing and hens as the case may be. If I am right in my surmise, the loss of feathers is due to the plumage being attacked by the birds themselves—in other words, they have taken to the habit of feather-eating. The information supplied by the querist confirms the view I have taken. I always look with suspicion upon fowls which are kept "in runs at the bottom of a garden, and in a town," even when they are well supplied with food and green stuff, and are otherwise well-managed, because fowls have nothing to do when kept in confinement. They are therefore likely to resort to bad practices merely for the sake of something to occupy their attention. It is in this way that feather-eating mostly begins. Active fowls are those which are most addicted to the practice, and my impression is that the habit is sometimes transmitted from parent to offspring. I have also known hens to be most inveterate feather-eaters one year and not to trouble about it the following season. As regards a cure, I can recommend nothing which will be permanent in its effect. Cutting the edge of the upper part of the beak will check the fowls, but as soon as the horn grows it must be again trimmed. Supply the birds with green stuff; dig over their runs and bury the corn so as to give them trouble to find it, and anoint the bare patches with vaseline. The scot and butter dressing answered because of the bitter taste imparted by the former ingredient.—DOULTING.

4317.—Powl with a red skin.—I should expect a fowl of any breed to show a red skin if his feathers were plucked off by another bird or by himself, as the constant irritation produced by the skin being pulled would be certain to leave its mark. It is scarcely likely that this is the cause of the legs turning, and I attribute the latter to the age of the cock. All fowls change their colour slightly as they grow older, and this applies as much to the skin as to the feathers. The bright yellow legs are never shown off so well in after life as in a bird's first season. I advise "E. L. T." to let matters take their course. He can do no good with dressings of any kind.—DOULTING.

Stale bread for fowls.—Where fowls are kept stale bread should never be allowed to be wasted or be thrown into the pig-tub. It should never be permitted to become mouldy, or even hard, but as soon as it becomes evident that the bread will be unacceptable to human beings put it in the fowl-house and pour holling water over it. The next step will be to mix meal with the soaked bread, and give the whole as the morning feed to the laying hens. Stale bread soaked in beer or milk is a good change for chickens, but soaked in water is bad. It will not however, do any harm to old birds, but rather the reverse.—D.

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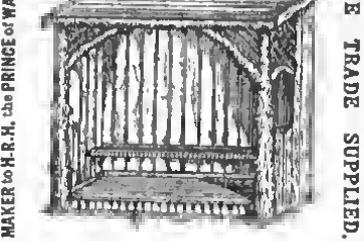
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vernalis
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Allananda grandiflora
 do. *violacea*
 do. *Williamsi*
Alstromeria hybrid
Amaryllis Belladonna
 do. *Nestor* and *splendens*
Amelanchier canadensis
Andromeda fastigiata and *Veronica pin-*
gulfolia
Androsace lanuginosa
Anemone alpina *alpinurea*
 do. *Fannini*
 do. *japonica*, pink and white
 do. *Japonica*
 do. *nemorosa* (forms of
 do. *Pulsatilla*, the Pasque Flower)
 do. *ranunculoides* and *A. thalio-*
troides
Angrewium caudatum
Antigonon breviflorus
Antirrhinum stramonifolium
 do. *Rothschildianum* and *vars.*
Antirrhinum, group of
Aquilegia Sciarrii
Arotella aculea
Arenaria balearica
Aristolochia elegans
Aster soris
 do. *Amellus* and *A. linariifolius*
 do. *Stracheyi*
Auricula Golden Queen
Auricula, group of
Asioles Deutscha *Perla*
 do. *Here*
Beaufortia splendens
Beaumontia grandiflora
Begonia Hispanica
 do. *John Heal*
Begonia, two tuberous
Benthamic fragifera
Berberis vulgaris asperma
Bossera elegans
Bignonia speciosa
 do. *Tweediana*
Bilbergia victoriana
Blandfordia Cunninghamii splendens
Bomarea conferta
 do. *froncosa*
 do. *ocinata*
Boronia theophrasti
Bougainvillea spectabilis
Bouvardia President Cleveland and *B.*
Mrs. R. Green
Brier, Austrian Copper
Briars, Scotch
Browallia Jamesoni
Euddeia Colvillei
Eurtonia scabra, villosa and *Johnstonia*
lupulina
Cassipoula japonica
Calanthe Veitchii
Calanthes, hybrid
Calceolaria, a new race of
Calliandra purpurea
Callistemon rigidus
Calochortus fervus
 do. *Kennedyi*
Caltha leptosepala and *Alyssum mon-*
tanum
Camellia reticulata
Camellias, two new Japanese
Campanula pusilla var. *coelestis*
Canna Louisa Thibaut and *Victor Hugo*
Garnation Harmony
 do. *Ketton Rose*
 do. *M. Bergandi* and *Mlle. Roussell*
 do. *Quoon*
 do. *Tree*, Mrs. A. Hemaley
Carpenteria californica
Celastrum Bungei
Cattleya Percivaliana
Celastrum crotcha
Ceroia siliquastrum
Cerous Lomairi
Cerinth retorta
Chimaphilus fragrans
Chionodoxa Lucilla var. *gigantea*
Chrysanthemum America and *C. Lady*
Brooks

Chrysanthemum Elaine and *Soleil d'Or*
 do. *single*
 do. (single) *Jane* and its
 yellow var.
Chrysanthemum, Japanese *Anemone-*
flowered
 do. *two hardy*
Cineraria surita
Cistus crispus
 do. *formosus*
 do. *laciniosus* var. *maculatus*
 do. *purpureus*
Clarkia elegans fl. pl.
Clematis Stanley
Clerodendron Kempferi
 do. *trichotomum*
Olianthus Dampieri *marginatus*
Coburgia trichroma
Corydalis cristata maxima
Corydalis mauritanicus
Cornus Koster
Cosmos bipinnatus
Crataegus tuncetifolia
Crotonum Powell
Crocus, group of autumn
Crossandra undulata
Cyclamen Goum and *G. Atkinsi*
 do. *repandum* and *Rosa alpine*
Cypripedium acule and *C. pubescens*
 do. *Maunierii*
 do. *Dominianum*
Cytisus nigricans
Daphne Genkwa
 do. *Meseroun autumnalis* and *Gy-*
donia japonica Moorloosel
 do. *Mazoremi* var.
Dendrothium Phalaenopsis Schroederi
 do. *thyrsiferum*
Diathus alpinus and *Erodium macra-*
sculum
 do. *neglectus*
Dietamnus Praxinella var. *alba*
Dietos Huttani
Digitalis, spotted variety
Dimorphotheca graminifolia
Dioscorea
 do. *Veitchii*
Echium calthyrum
Elaeagnus parvifolia
Elaeocarpus cyanens
Etiocoen chionantha
Epidendrum macrochilum album
Eromurus Bengali
 do. *robustum*
Erica byssina and *E. h. alba*
 do. *pendens*
Erigeron aurantiacus
Erythronium purpureum and *Sedum spatul-*
ifolium
Erythronium Dons-candis
Eucalyptus leucocylon
Eubaris smaxonia
Foraythia suspensa
Francosca calycis grandiflora
Fritillaria aurea
 do. *Melegris* var.
Fuchsia dependens
 do. *triphylia*
Genista atnensis
Gentiana bavarica and *Aquilegia gian-*
dulca
Gerbera Jamesoni
Gesnera cardinalis
 do. *longiflora*
Geum minimum
Gladioli, new hybrid; 1, *La France*; 2,
L'Alaico; 3, *Masque de Fer*
Gladiolus sulphureus
Gloriosa superba
Gloxinia
Grillina bysanthina
Habenaria militaris
Haberica rhodopneala and *Campanula*
turbinata
Habrothraunum Newell
Hamanella arborea
Helenium autumnale purpureum
Hellianthemum algerense
Hemerocallis Dumortieri
Hemshere sanguinea

Hibbertia dentata
Hillebrandia Hugeli
 do. *Rosa-sinensis fulgens*
 do. *Trionum*
Hunnemannia fumerifolia
Hyacinthus aureus
Hybrid Sweet Urtica
Hypericum elongifolium
 do. *elypticum*
 do. *triflorum*
Illeceum seridanum
Impatiens Hawkort
Ipomoea Horsfallii
Iris aurea
 do. *biatrifolia*
 do. *Histria*
 do. *ochroleuca* and *I. Monapur*
 do. *palifolia*
 do. *parviflora*
 do. *pavonia* and *I. pavonia coccinea*
 do. *caulosa*
 do. *tingitana*
Ismeus Androana
Izora Westi
Kempferia rotunda
Kuiphoia aleolis var. *glaucoacens*
 do. *caulescens*
Lailia eibilia
Lathyrus grandiflorus
Leschenaultia biloba major
Levia reditive and *Micromeria Pipe-*
rolia
Lilium canadense, red and yellow forms
 do. *Henryi*
 do. *japonicum*
 do. *nepalense*
 do. *nepalense* var. *ochroleucum*
 do. *spectosum rubrum*
 do. *superbum*
 do. *Sovistlanum*
 do. *Thunbergianum Alice Wilson* and
Van Heutli
Limncharis Humboldtii
Linaria alpine and *Phyteuma humile*
Linum arboreum
Louleera sempervirens minor
Luoulia gratissima
Magnolia conspicua
Malva laterifolia
Malva coccinea
Maxillaria Sanderiana
Miltonia spectabilis and var. *Morollana*
Mim lobata
Mouhotia, new hybrid
Mutisia Clematis
 do. *decurrens*
Myacotidium nobile
Narcissus Eroussonetti
 do. *triandrus* var. *albus* and *N.*
cyclamineus
Nelumbium speciosum
Nemesia stramonium var.
New Narciss: 1, *Albatross*; 2, *Seagull*;
 3, *Soeding Pheasant's-eye*
Nymphaea Maritima (Canary Water Lily)
Odonoglossum Harryenium
 do. *Wettianum*
Olearia insignis
Oncidium Green
 do. *Jenolanum*
 do. *Phalaenopsis*
Oncocyclus Irises: 1, *Gates*; 2, *Lortett*;
 3, *Lupina*
Ornithogalum nutans
 do. *pyramidalis*
Orobanchaceae
Oxalis Bowleana
Oxera pulchella
Oxytropis Lamberti and *Awantholimon*
glumaceum
Paeonia albiflora *Adrian*
 do. *decora elatior*, *P. lobata*, *P.*
anemonesifera
 do. *Moutan* var. *Heine Elizabeth*
 do. *Venus*
 do. *Whitley*
Peony, single white *Moutan*

Pansies (tufted) *Duchosa of Fife* and
Hartree
 do. *Quaker Maid* and *Jackanape*
Pansy (tufted) *Violetta*
Papaver orientale
Pastiflora coccinea *Constance Elliott*
 do. *racemosa*
 do. *Westoniensis*
Paulownia imperialis
Phalaena gloriata
Pilox Drummondii (some good vars. of)
Phyllocactus dolosus
Pinguicula grandiflora and *Viola pedata*
Pink Her Majesty
Polygala Chamassurus purpurea
Primrose College Garden seedling
 do. *Oakwood Blue*
Primula floribunda
 do. *imperialis*
 do. *minima* and *Epiobitum oboor-*
datum
 do. *Sieboldii*, white and light vars.
Prunus Pissardi
 do. *trilobus*
Ramondia pyrenaea and *Omphalodes*
Lucifera
 do. *pyrenaea alba*
Ranunculus Lyalli
Reinwardtia tetragynum
Rhododendron Ceres
 do. *kwonosa*
 do. *multicolor hybrid*
 do. *niagariensis*
 do. *ramosum*
Rhododendron, Hybrid *Java*: 1, *Inter-*
rosorum; 2, *Primrose*; 3, *Jumial-*
forum serminalium
Rosa India var.
Rose Anna Gllivier
 do. *Comtesse de Nadeillac*
 do. *Innocente Pirola*
 do. *John Forcet*
 do. *Laurito Madmy*
 do. *Mme. de Watteville*
 do. *Mme. Naboussud*
 do. *Marquise de Virene*
 do. *Marie van Houtta*
 do. *Mrs. Paul*
Rudbeckia purpurea
Ruellia macrantha
Saccobolium bellinum
Sarracenia, new hybrid
Saxifraga Boydii
 do. *Fortunei*
Scaevola caucasia
Schubertia grandiflora
Senecio macroglossus
Senilcina olorosa
Snowdrops and winter *Aconita*
 do. *slight kinds* of
Solanum Sesfortianum
Stanhopea plicyerna
Stenobergia lites and *S. angustifolia*
Stigmaphyllon elliptum
Streptocarpus Gaphni
 do. *rare* of
Streptocarpus, hybrid
Sweet Pea, *Illif*, *Stanley*, *Mrs. Eckford*,
Orange Prince, and *Dorothy Tennant*
Tee Rose Corina
Tachium anemoneiflora and *Saxifrage*
caesi
Thunbergia grandiflora
 do. *insipifolia*
Tufted Pansy: 1, *Ravenswood*; 2,
Edith; 3, *Rother*
Tufted Pansies *Sybilis* and *Bessie Clark*
Tulipa vitellina
Tulips, old garden
 do. *southern* (*T. australis*)
Tylosa Mme. Heine
Ureoclinia pendula
Vanda toros
Wahlenbergia pumilliflora
 do. *saxifolia*
Waldsteinia trifolia
Xerophyllum asphodeloides
Zauschneria californica
Zephyr Flower (*Zephyranthes Atamaeo*)
Zephyranthes caudata
Zygopetalum cristatum

GARDENING ILLUSTRATED.

No. 756.—VOL. XV.

Founded by W. Robinson, Author of "The English Flower Garden."

SEPTEMBER 2, 1893.

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BALSAMS AND THEIR CULTURE.

I HAVE seen at flower shows very good plants of Double Balsams, which is evidence that a favourite flower of forty years age still has admirers. In such things as Zonal and Ivy-leaf Pelargoniums, Begonias, Gloxinias, &c., the Balsam, a mere tender annual, has found formidable competitors, yet none of these plants give just the firm of merit which attaches to the old favourite. None have that tree-like habit of growth in miniature which the Balsam shows; none are so easily raised from seed, and in so short a time none give less trouble; and perhaps it is for some of these reasons that the Balsam is now less grown in gardens than it was many years ago. Happily, whatsoever the nature of appreciation exhibited for the flower, at least it has not entirely staid still in its development. We never had finer or more varied Balsams than we have now, and plants that, if well grown, have sturdier habit and bloom so profusely. The Balsam gradually developed doubleness as well as compact sturdiness from out of single flowers and a loose habit of growth, through semi-double flowers that seem to those who recollect them as poor indeed compared with the splendid double flowers that present good strains produce. Whatsoever may be the taste for single flowers of various kinds as compared with double ones, at least no one ventures to contend that single-flowered Balsams are either meritorious or beautiful. We have them now so double-flowered that it is doubtful whether they can ever be excelled in that respect, especially as for our stocks we must ever be dependent upon seed, and the intensely double flowers are rarely fertile, the seed-pods being generally produced from smaller flowers of the same plants. The forms

CAMELLIA-FLOWERED AND ROSE-FLOWERED as applied to Balsams practically differ only in name. They are intended to indicate one large double character of the flowers of any fine strain, and these certainly do bear close resemblance, if not quite in size, at least in appearance, to good double Camellia blooms, or, as some may think, to Roses. Balsams have three distinctive characters in colours or markings. There are the pure self, the stripes or flakes, and the spots or blotches. Why these spots or blotches should come is a feature which probably can only be determined by a close study of Balsam physiology, but it is not at all a common feature in flowers. Stripes or flakes, on the other hand, are common enough, though, perhaps, in Carnations more than in any other flowers. I might have included an intermediate speckled section of which a variety from France, once known as Solferino, is a good example, but these forms are combinations of the striped and spotted forms after all. None are more beautiful than the selfs, especially the fine whites, carmines, scarlets, crimsons, mauves, violets, &c. Next in beauty are the purple, scarlet, and carmine grounds much spotted with white. The others of striped or speckled forms are pleasing, just as fancy tints may be liked otherwise. Still, a dozen of the best colours and markings give enough to satisfy

anyone, and a good selection is best ensured by purchasing seed in ever such small quantities in separate colours. Usually the continuation of a good variety is maintained by saving seed from the best forms separately, for it is found that Balsams sport very little and generally reproduce their kind with constancy. When Balsams are grown for ordinary greenhouse decoration, there is perhaps less of importance in variety than there is if grown for the production of exhibition plants or for bedding. Not every gardener understands the value of Balsams as bedding plants, and yet in their season, if well done, they are very beautiful. They do not require a soil that is too rich, and they like it to be tolerably firm. If a raised bed be planted, and not too stilly or regularly, there should be a carpet of some dwarf plant, such as a blue Viola, which would afford a good contrasting base to the more bizarre colours of the Balsams. I have found, after many years' experience of growing

BALSAMS OUTDOORS, that it was better to dibble the plants out, so as to somewhat, at the first, restrict the roots, than to first pot them singly, and to turn them out from the pots into the ground with all their roots in full activity. Plants so treated, and especially in rather fine loose soil that was manured, would develop excessive growth, especially of side-shoots, and, in fact, do anything but bloom well, hiding what flowers were produced in an excess of leafage. When that form of growth happens it is well to lift the plants from the soil with a fork, so as to check root-action and to replant again at the same time, severely thinning the side shoots. But it is better still to prevent that growth by transplanting direct from the seed-pans, the plants being first well seasoned by exposure, into the open ground, and when bloom begins there is little fear of too much short growth resulting. In any case, a little pinching or thinning will seen at all right. I have often found much reason to admire the exceeding beauty of a fine mixed strain of Balsams so grown, and have wondered that they have not been widely utilised for bedding. Even if only dibbled out singly or in trebles into ordinary mixed plant borders, they are beautiful also. Balsams are in their early or seedling stages very much injured by being kept in close places, and are thus drawn out of natural form just when ample light and air are so essential to the production of a stout, sturdy childhood. From the moment the plants are 2 inches in height they need ample light, and should also be kept as near to the glass, whether in a house or frame, as is possible. When pricked off singly into pots, as of course they must be if intended for pot culture, the stems should always be kept somewhat hurried in the cell, and that has to be done at every fresh potting, for not only does it tend to keep the plants dwarfed, but the stems emit roots which help also to sustain the plants in their later growth. Balsams do not require excessive pot-room, and the best of plants, of good height and breadth, and in profuse bloom, may finally be had from pots not more than 8 inches across the top. When the soil is of the right sort—a mixture of three-fourths

STRONG TURFY LOAM and the rest of cow-

manure and leaf-soil—it is surprising how it will sustain the plants, and being gross feeders, they can, when fully rooted, be well sustained by frequent waterings of liquid-manure. I have found a couple of bushels of clean horse-droppings put into a coarse bag and placed in a tub containing twenty gallons of water to furnish capital liquid-manure for Balsams, and it is of a kind that can be oft repeated when the first bagful of manure is exhausted. A little eot may also be advantageously mixed with the liquid. Really good exhibition Balsams should be about 30 inches in height and 24 inches through, each plant carrying a dozen at least of stout branches all covered with large double flowers and good leafage. Such plants are not temporarily beautiful. They give at least from eight to ten weeks of beauty, and that is not at all a bad product for tender annuals whose ordinary lives rarely exceed six months. A.

A note on Gallardias.—The Gallardia is one of the more important plants in flower during the late summer and autumn months. It succeeds best in a light soil, and produces flowers with great freedom. One wishes that there was a little greater variety in the colouring, the colour varying from crimson to self yellow, such as Vivian Grey. The plants like a warm, fairly light soil, and under such conditions they will continue to bloom over a long season, whilst the flowers are very useful for cutting. I notice that they are being grown not only in both small and large gardens, but also in the parks of London and other cities. It is not difficult to raise them from seed, and if the seed is sown at once, plants will be obtained in autumn, which will about one year old bloom freely. Sow the seed in the open, selecting not too open a spot, but where the ground is well prepared and moderately rich. Amongst the seedlings there will be naturally many inferior things which may be weeded out, retaining only those of fine colour. The two principal colours are crimson and yellow, usually associated in the flowers, edged with the latter tone, this varying greatly in depth. I have lately seen, however, departures, getting into more of rosy tint, so that in time the range of colouring will be extended. Get good seed, and then you may rest assured that the "strain," as it is called, will not be disappointing. The plants suffer in winter if not in a well drained soil, but by having a good stock of seedlings a supply is always on hand. A popular name for the Gallardias is Blanket-flower, not inappropriate, by reason of the woolly nature of the gay-coloured blooms.—V. O.

4431. — *Lilium auratum*. — Without knowing the condition the flower-stems were in when they were cut down I cannot say positively whether it was wrong to cut them down or not so early in the season. This much I may, however, say, that the stems should be allowed to die down before they are removed. If those you have had the stems cut down when they were green, you may depend upon it the bulbs have been weakened by it. Under any circumstances the proper treatment is right, so that if they fail it will not be your fault.—J. C. C.

GARDEN WORK*

Conservatory.

Mignonette may be sown any time during this month for blooming after Christmas. Make the soil very firm, and use good loam, mixed with a little old manure. See that the drainage is free. One of the chief factors of Mignonette growing is good light, made sure by raising it high with the pots. On this head, the seeds are sown thinly. Place the seed-pots in cold frame and keep just moist. Thin the young plants to about four or five in a pot, leaving, of course, the best. It is now time to check the growth of Salvia, Eupatoriums, and other plants turned out to make growth, with the view to lifting in September, towards the end of the month, or earlier if frost is expected. The check is best given by cutting the roots round with a spade, so as to leave a well just large enough for a 9-inch pot. Large plants may require larger pots, but it is as well to keep these things in as small pots as can be done conveniently. The early bulbs will now be making some progress in root formation. Let them remain plunged outside till the pots are well filled, and then there will not be much trouble. The general collection of forcing bulbs, Hyacinths, early Tulips, and Narcissus of various kinds should be got home as soon as possible. Single Hyacinths are best for growing in water, and they are also best for forcing in pots. The best result is obtained when the bulbs are potted early and allowed to remain in water till the time of flowering is given. Cinerarias, Primulas, Cyclamens, and other plants usually flowered in moderate-sized pots should have a shift before the plants get pot-bound. We grow a good many of these in 5-inch pots, but, of course, 6-inch pots are not large enough for good-sized specimens. Plants for forcing may be shortly potted up. We usually strike cuttings early from forced plants in heat, pot off, and plant out. When established the best of these, to the required number, are lifted and potted up towards the end of September. Mrs. Sinking is one of the best varieties for this work. Hard-wooded plants must be placed under cover before the autumn rains set in. They are all right so long as the weather continues warm, but, exposed to a sharp autumn frost, the flower-buds will probably suffer. If there are any signs of thrips on Azalea rest them cleaned at once by syringing or dipping. Azalea Mollis and Deutzia gracilis must be potted up shortly for forcing. Cactuses in cold pits or frames must be well exposed to ripen the growth. Gradually reduce the water now, so as to get the growth well matured, and there will be a harvest of flowers in due time. Continue to reduce diluting plants as anything goes out of flower, and encourage growth in Fibreal Tropaeolums and any other plants which has any effectiveness in the winter.

Unheated Houses.

At the present time this house is gay with Tuberosus Begonias, Fuchsias, and Lilies of various kinds, all of which may be kept through the winter in a resting and dormant state without artificial heat. The pots will be plunged in Cocoa-fibre, or before frost set in paper covers specially prepared will be placed over them. For winter decoration there are bushes of Laurustinus, Andromeda floribunda, Jasminum nudiflorum, nice little bushes, and Gold and Silver Bunnymus, and several berry-bearing plants, including Perpetua speciosa.

Ferns under Glass.

Use as little shade as possible now. All permanent shading, such as whitewash, &c., should be washed off; strong soda ash or potash will be placed over them. For winter decoration there are bushes of Laurustinus, Andromeda floribunda, Jasminum nudiflorum, nice little bushes, and Gold and Silver Bunnymus, and several berry-bearing plants, including Perpetua speciosa.

The North House

can be cleared now for the Aralae and hard-wooded plants generally. Up to the present this house has been most useful in keeping flowering subjects back, but the brilliant sunshine made even north houses better than usual. Lappagerias, both the white and red varieties, do well in the north house. Make a good border of rough peat, with a few rough pieces of old tarry loam mixed therewith, the border to be well drained with broken bricks, and should be at least 2 feet deep. The Lappagerias may be trained up the wall and then under the roof. It would be a pretty sight to see a house well furnished with Lappagerias, and the flowers would be valuable.

Stove.

Assuming that the house has been thoroughly cleaned with soap and water, the woodwork should be painted if necessary. These houses are not painted often enough inside. Drops from a roof in bad condition often damage a tender plant, and besides, a coat of paint is one of the best aids to the getting rid of insects, especially that pest, mealy-bug. Shade will not be required now, and trees must be kept going regularly. After the house has been cleaned, the plants which have been moved in either house for the summer must be brought back, some of which must be thrown away. It is a great struggle sometimes to throw out old favourites, but plant growers must not indulge in sentiment. There are young plants coming on which must have room, and so the old plants must either be thrown away or otherwise disposed of.

Frame Culture.

Late Melons will require new linings to help the bottom heat, and warm coverings will be required at night. The plants in frames are not making so much growth now, and there will be less scope for pinching and pruning. Cucumbers in frames may be carried on till the end of October by the aid of warm night covers and linings of warm manure round the frames. Give all the air possible at night in Cinerarias, Primulas, and Cactaceae. The

* In cold or northern districts the operations referred to under "Garden Work" may be done from a fortnight later than those indicated with equally good results.

night dews refresh the foliage, and they get sturdy and robust. Of course, frost must be guarded against. Several frames will be full of cuttings now, and so soon as the cuttings are rooted air must be given freely, and if at all crowded the pots must be opened out.

Chrysanthemums

must be opened out a bit. This can be done by taking a plant here and there out of the line and open the oblong out. It means a little more work, but a little of the kind is beneficial, and permits the air to circulate all round them. When the plants are crammed closely together the leaves are not properly developed and hardened. The buds have not been all selected, and, as the pots are full of roots, liquid stimulants must be given three times a week.

Window Gardening.

Fern cases will still require plenty of water. Dead fronds must be picked out; the faded leaves will soon be replaced with new growth. Cuttings of plants rooted outside should now be potted up and stood in the shade to get established. Asaleas, Camellias, and hard-wooded plants generally must soon be placed indoors, in a cool light room, and watered with care.

Outdoor Garden.

Seeds of many flowering plants are ripe or ripening, and anything good should be sown. Good Hollyhocks are always worth saving seeds from. Cereations will ripen seeds in the open air this season; at least, I am watching a number of plump pods on open air plants. Of course, it is no use saving seeds from any but the very best. Cereas will ripen more seeds than usual this year, and other good things are worth looking after. It is late for layering Carnations, but any plants which have not been layered should have attention in the principle of better late than never. Rose bedding is about on a par with Carnation layering. Any trials that were not in condition earlier may be budded with every chance of success now, but do not shorten the shoots. Keep the buds dormant during the autumn and they will break strongly in the spring, and make fine heads. Grass and weeds have made rapid growth lately, and have in well kept gardens involved a good deal of work. Weedy walks are best dressed with weed killers. When dressing a walk, dry hot weather the weeds die and disappear. Dahlia will require a good deal of attention in destroying earwigs, which are very numerous this season. The growth has been rapid lately. Thinning and tying must not be neglected. Where alterations are contemplated the work may soon begin now. Workmen will get through more work now than in the short days in winter. New lawns may be laid and evergreen shrubs transplanted in September. New lawns may be sowed down now if economy is an object. Good turf is best if the lawn is required for immediate use, but the expense is more. Evergreen and other hedges may be got over again now with the shears to make them ready for the winter.

Fruit Garden.

Vines in pots intended for forcing next year will now be approaching a condition of maturity. The finishing touch may be given out to the side against a south wall. At no time should the vines be kept in pots, but be permitted to get dust dry. A plant in a pot soon gets dry. I suppose, nowadays, no one grows pot-vines without the use of artificiality. I can strongly recommend the Patent Silicate Manure either for mixing with the soil in which the plants are potted or as a top-dressing. It is cheap enough to use freely. I know nothing about its constituents, but it does not produce rank growth, its tendency being in the way of firm growth and abundant fruit-bearing. I have used it for two seasons, chiefly upon Vines and Peaches, and most assuredly I should not purchase anything unless I was satisfied with it. In making new plantations of Strawberry, except if may be for purposes of experiment, rely chiefly upon well bred sorts. It will be a long time before we lose sight of Sir J. Paxton and President James Vetch bears very fine fruit. British Queen ought not to be recommended for general planting irrespective of soil and climate, but grown in a good deep soil and a genial climate, and there is no Strawberry pays better. Let me advise all who are planting Strawberries upon dry, porous soil to be in the habit of manuring a good deal of peat, say one peat to the square yard, or of common soil—be worked into the land during the last fork over. Apples and Peas are putting on colour, and the late rains have given size, but then comes the complaint that good Apples are worth nothing, that there is no sale for them at all. I feel sure these complaints come from people who have not mastered the details of marketing. That Apples will be cheap this year goes without saying, but prime samples, carefully packed, will pay in local markets, I feel convinced.

Vegetable Garden.

Weeds are giving trouble, and must be hoed up when the sun shines and got rid of. The earth stirring will be beneficial to all growing crops. All late summer and autumn seed sowing has been a marked contrast to the spring and summer seed sowing. Seed sowing, since the change came in the weather, has grown remarkably, and the young plants will need timely thinning. It will be of no use to sow Turnips now except for the purpose of spring greens, and it hardly pays to sow for that purpose. Get the land from which the spring sown Onions have been cleared prepared for Cabbages. It is not generally necessary to dig deeply or manure heavily, as the ground is usually well done for Onions; all we do is to give a sprinkling of soot and fill it in lightly, then draw drills 12 inches apart, and set out the plants in the drills, giving a good soak of water as soon as the plants are finished. Cucumbers for autumn and winter forcing may be planted any time now. Every part of the house must be thoroughly cleaned before the plants are set out. Only strong plants should be employed. If strong plants of a free-setting variety of Tomato are set out now in a well heated light house a crop may be gathered in winter. The plants may then be shortened back, and a heavy crop gathered from the new wood in May, June, and July. They must have liberal treatment right through. A good form of the Old Red requires some beating for winter work—it acts so freely. Chill-French Beans in winter, which can be heated to a temperature of 60 degrees for winter bearing, or they may be sown in pots and brought on in Pine or Vinery forcing Houses.

Work in the Town Garden.

This has been a grand season for Grapes in unheated vinerias and greenhouses, and in the open air also. I could mention several cases in which excellent crops of Grapes have been produced in totally unheated structures, under decidedly rough-and-ready treatment, and the fruit is now nearly or quite ripe. To my mind Grapes, especially when of the Black Hamburgh or other good old fashioned varieties, thus grown in a cool and well-ventilated house, are infinitely superior to the huge overfed Gros Colmar and others now so generally seen in shops, &c., and which are in many respects better than those for a Vine are now almost entirely devoid of both substance and flavour. While the fruit is colouring the Vines cannot have too much of either air or sun, and care must be taken to remove all late or secondary growths with the finger and thumb, either pinching them out altogether, or if the foliage is at all scanty, stepping them beyond the first perfect leaf. There are few better climbers for the roof of a town greenhouse than a Vinn, and if the growth is not too thick the shade will be beneficial rather than otherwise to any pot-plants beneath, during the summer time, but these last have to be removed in autumn, for a Vinn are now so full of other things do not agree at all. Tomatoes carrying heavy crops of fruit must have abundance of moisture and liquid manure at the root during such weather as we have experienced lately. If the border is properly drained and not too deep, and the soil thoroughly porous and sweet—a sandy nature preferably—it is scarcely possible to overwater these plants under present circumstances, by far means at least. Plants in pots, now full of roots, will require watering twice or possibly thrice daily. This has so far been a splendid season for Primulas in open air, and I have seldom seen the beds looking so gay and so dead, brilliant. Begonias, where planted out moderately early, in well-manured soil, and liberally watered, are also doing fairly well, but the hot sunshine quickly causes the blooms to wither, and on this account I have been shading some of my best beds in a rough-and-ready fashion. The intense heat of last week scorched a lot of my plants, where unprotected from the sun, badly, but I dare say they will break up again from the bottom presently. As soon as either old or young plants of Chinese Primulas have recovered their roots, for as they are growing again, they must have abundance of it—the more the better—with shade from hot sunshine only; few have a correct idea of how nearly hardy these charming and, indeed, invaluable plants really are. Continue disbudging Chrysanthemums, and give the plants weak liquid-manure with a free but careful hand.

B. O. R.

THE COMING WEEK'S WORK.

Extracts from a garden diary from September 2nd to September 9th.

Gave the Violets intended for framing a good soaking of liquid-manure. Shall soon get frames ready for them, as I believe in moving those intended for early flowering not later than the middle of the month. The most useful kind for framing is Marie Louise. A number have been potted up to flower in pots. The Neapolitan is a very sweet Violet, and is usually planted in a pit where a little heat can be given if necessary. The Czar is usually grown in the open places covered with earth, and is a very early one. The variety does very well in open pots in the shrubbery. The shelter brings the bloom early, and if transplanted every two years there are always plenty of blossom with long stalks for hunching during the greater part of the winter and spring. A part of the stock is replanted every year, and these transplanted roots flower the earliest, and the plants, which have stood the second year come on later, but flower more profusely, though the flowers are hardly so fine or so long in the stalk. Shifted on young plants of Eucalyptus (Blue Gum). All sorts of virtues has attributed to this plant. There is a popular impression that a plant kept in a firing room is beneficial to health, and that flies and other insects are thus banished. I was told the other day that a Caster-oil-plant in a room banished the flies. Both the Caster-oil and the Blue Gum doubtless have their uses, but I should doubt if the presence of a few plants in a fever-haunted district, brought on by overcrowding, would have any perceptible effect or advantage. Very busy hoeing up weeds everywhere. It allowed to seed now future work is provided for a considerable time. Shall buy propagating bedding "Gentians." The cuttings will be sown in the open air. Potted off early struck Hollyhocks. Shall get them established in 4-inch pots, and then plunge in Cocoa-fibre in cold frames for the winter, planting out next March or early in April. Monthstrair are very aboy in large pots in the conservatory now. They were plunged outside till the flower spikes were showing colour. White Dahlias grown in pots are found useful for the conservatory in autumn. The pots are plunged out all summer, and will soon be placed under canvas. The varieties are chiefly dwarf Pompon and Cactus. Watered inside Peach borders and removed the trash, and gave another soak of liquid-manure to inside borders of late Vinery, and mulched the borders down with litter. The Grapes are all well on in colouring, and ventilation is left on all night now. The ventilators have been covered with scrim to keep out wasps, but the air circulates freely. A little warmth will be kept in the pipes in dull damp weather. No lateral growth will be allowed to extend beyond an inch or so. Muscats will be exposed to the sunshine to put on the right amber tinge of colour. Two Peach-trees in a mid-season house which were made rather strong wood have been root-pruned by lifting and shortening the extremities. Two trees in the same house were lifted and replanted about three years after planting, and I regret the whole of the trees were not done at the same time. There is no better way of getting the trees into a free-bearing habit. The Chrysanthemums are growing very freely now. Weak manure is given twice a week to most of the plants, but not all. It is chiefly the vigorous growing autumn-flowering varieties which are dealt with thus. These have all been top dressed, and the roots have come up and occupied the new soil. Single and still giving colour, and should be diligently sown at mid night in bundles and lanterns. Pieces of hollow Beanstalks 5 inches or 6 inches long are placed among the branches. In these the insects bite when not feeding, and are easily dislodged by pulling them out into hot water.

OUTDOOR PLANTS.

PLANTING CARNATIONS.

All who love and grow Carnations should make a point of resping as far as possible some of the advantages that the present season offers. The good of it, so far as Carnations are concerned, will go beyond the year, materially helping us through the winter, and ensuring, as far as our own efforts can, a good display for another year. Never before have I been able to begin planting in August with layers put down the same season; but this year planting was commenced during the middle of August. It was not a hasty attempt to plant a few to make a record, but a fair beginning with layers having hails of roots as large as one's fist. Planting has continued ever since, and there is every prospect of its being completed by the average usual date at which it commences. With everything so early, and layering performed a month in advance of the ordinary time, early planting followed, or should do so. My point is, that as soon as the layers are really fit for removal plant them, if possible, where they are to bloom. Six weeks from the date of layering is ample time to allow for rooting, and then the all-important thing is to get them up and put out in their flowering quarters. My advice, therefore, to all amateurs is to begin and finish as soon as you can, and then the plants will obtain such a root-hold as to be firmly anchored in the soil and able to resist all the upheaving tendencies of the frost's action. A few words as to soil. There is nothing like loam, but in a fresh state it is very much beset with the most mischievous of pests, wireworm. Ordinary garden soil will grow good Carnations. I have just planted out nearly three dozen layers of

COUNTRESS OF PARIS CARNATIONS, and they were all taken from one plant, which was grown in the soil of a vegetable garden that has been in cultivation many years. In planting I adopt a plan that I have long since proved to be beneficial to Carnations, and no doubt it in some measure helps to circumvent enemies. When the hole is dug out and the plant put in, a handful of some mixture of sand and fresh soil, with soot, wood-ashes, or any ashes from burnt refuse, is put upon the roots and around the stem. Before filling up, too, the plants are carefully watered in. In the present dry condition of the ground it would be fatal to many plants if they were not watered in. Morn surface-watering after planting, &c., is completed is altogether insufficient to reach the roots, and beneath the tropical sun that was shining during the early days of present planting, without abundant moisture at the roots, death would soon result. Another advantage of this form of thorough watering is that it is usually enough to carry the plant through till fresh rooting takes place. Amateur friends need not despair if loam is unobtainable. Dig up the ordinary soil to a good depth. If it needs manure, let that which is added be thoroughly decayed, and use soot or wood-ashes as well. Then plant early, see that they are well moistened at the root, and last, but far from least, make them firm in the ground. It is attention to and the perfect carrying out of these apparently small, but all the same most important, details that contribute so much to ultimate success. A. H.

4413.—**Nettles on a farm.**—Nettles do not usually thrive on well-cultivated ground. The roots should be gathered as the land is ploughed or harrowed. Many roots will escape, and good crops of Nettles may appear above ground next year. As soon as they do so cut them down with the hoe. They may grow again, but should be persistently hoed down as they appear. They will die out the first year if they are not allowed to make any growth above ground. They may be exterminated from pasture land in the same way. Cut them down constantly with a scythe or hook.—J. D. E.

—Keep them constantly cut down through the summer, and the roots will die for want of access to the air. It is only a question of sticking to it for a year or two. A good lad would manage it.—E. H.

4428.—**Sowing annuals.**—All the annuals named, except *Marigolds* and *Chrysanthemum* vegetum, may be sown now, though it is full late enough. Old seed-bed plants are getting quite strong.—E. H.

WHITE HAIRBELLS.

Amongst the Hairbells there are several with flowers of exquisite delicacy and spotless purity of colour, such as the variety of *C. isophylla*. This is a Campanula all should grow who love white flowers, and another that should not be passed by is the one here illustrated and known everywhere as the White Peach-leaved Hairbell, a lovely flower, invaluable for giving beauty to the garden, and most useful when out. This may perhaps be accounted the most useful of the group to which it belongs, and is entitled to a place on every border, worthy of the name, though there are many gardens from which it is absent. The double form of this has many uses, as the flowers are resette-like, and when mounted neatly on wires might be taken for small blooms of the fragrant *Gardenia*. A very good use to make of this Campanula, but one to which it is not often put, is to grow in pots, and if properly cared for, flowers may be obtained in spring if the plants are given a judicious amount of heat. At that season the flowers will have an additional freshness and beauty by reason of their tender grace and purity. Both the single and double-flowered forms are of free growth, and an easy way to propagate is by division of the roots in winter, and here I may offer a few remarks respecting



White Peach-leaved Hairbell (*Campanula persicifolia alba*.)

the culture. Neither the type nor its numerous forms present any great difficulties in this respect. One of the common faults, and most noticeable when many gardens are visited in the course of the summer, is that the plants are not divided frequently enough. When it is seen that they are becoming weakened, either through the poverty of the soil or enervated growth, we lift the plants carefully, divide them, and plant in other positions that have undergone some preparation. The tufts will then grow away with vigour, and a free display of flowers will soon follow. The best time to divide is the winter, but it may be done in the early spring without harm. Whichever term is selected, plant quickly, so that the roots are not unnecessarily exposed to the atmosphere. It is well also to remove

DECAYING FLOWER-STEMS, as by prompt attention in this respect a few blooms will appear throughout the summer and early autumn, and the strength of the plants will not be unduly taxed. Besides the above varieties there are several others that deserve recognition, and amongst them is the variety *alba coronata*, a semi-double flower, pure-white, with the outer row of petals forming a kind of frill to the bloom that renders it at once distinct and desirable. Then we have a fine variety sometimes catalogued simply as *C. persicifolia coronata*, and again as *C. p. coronata*

corulca, these having blue flowers that present a good contrast with those of its near relative. There is also a double form of this blue variety, which, if a select group of the *persicifolia* type is desired, should find a place. Another that is entitled to consideration is *P. persicifolia maxima*, which, as conveyed by the varietal name, is distinguished by its large flowers. A group of this interesting type of Campanulas would make a most interesting feature in the hardy garden. The Campanulas, though their merits are widely known, are not cultivated to the same extent as one might suppose from their sterling usefulness, great beauty, and diversity of habit. We might have many of the Hairbells in a garden without producing same. Some are most at home on the rockery, either on a jutting ledge that they can scramble over, or in a snug, warm chink or recess. Others, like the *persicifolia* group, display their characteristics to most advantage on the herbaceous border, where with other homely plants they give naturalness and great beauty to the garden during the summer months. B.

4362.—**Herbaceous plants.**—There is perhaps a little confusion in some minds as to what constitutes the term "herbaceous." But I have always been accustomed to take the broadest possible views on this subject, and should include almost everything which had a perennial character whose growth died down every year. There are, of course, evergreen and deciduous herbaceous plants, and if one was at all fussy, a distinction might be made between those which disappear under the ground in winter and overgrow; but for all practical purposes one class might contain the whole. The following list contains both: *Achillea Ptarmica plena* (July and August), *Adonis vernalis* (March), *Alstromeria aurantiaca* (July and August), *Alyssum saxatile compactum* (March), *Achusa italica* (June and July), *Anemone spinnina* (April), *A. fulgea* (March), *A. japonica*, *A. j. alba* (August to October), *Anthericum lilasurum major* (May and June), *Columbines*, *Aquilegia chrysantha*, *A. glandulosa* (May and June), *Arabis alba* (March), *Armeria cephalota* (Giant Thrift) (June), *Asperula odorata* (Woodruff) (May), *Asphodelus albus* (April and May), *Asters* (*Michaelmas Daisies*), *A. bessarabicus*, *A. dumosa*, *A. uricoides*, *A. lewis*, *A. turbinellus*, *A. Nova Angliæ*, &c., *Auhretia Hendersoni* (March), *Bocconia cordata* (Tree-Celandine) (July), *Buphthalmum salicifolium* (May to July), *Campanula carpatica*, *C. o. alba*, *C. grandiflora* (Marion), *C. grandis*, *C. latifolia alba*, *C. nobilis*, *C. n. alba*, *C. persicifolia* fl. p. *C. p. alba major*, *C. p. alba plena*, *C. turbinata*, *C. Van Houtte*, *Catananche bicolor* (July to August), *Centaurea macrocephala* (July), *C. montana* (May to August), *Chrysanthemum latifolium*, *C. semiduplex*, *Coreopsis grandiflora* (June to September), *Delphinium* in variety (June), *Dicotyles Fraxinella*, *D. F. alba* (June to August), *Dielytra spodioides* (April to May), *Doronicum plantagineum excelsum* (April), *Echinops ruthenicus* (July to August), *Eryngium amethystinum* (July), *Funkia subcordata grandiflora* (September), *Gaillardia grandiflora* (June to September), *Galga officinalis compacta* (May to July), *Geranium arvense*, *G. cinereum*, *G. lancastrense*, *G. sanguinum*, *G. sylvaticum plenum* (May to August), *Genm arvense*, *G. coccineum grandiflorum* (May to July), *Gladiolus The Bride*, *G. Marin Lemoine*, *Cypripedium panicula*, *Helenium pumilum*, *H. autumnale* (June to August), *Helianthus rigidus*, *H. decapetalus* (August and September), *Heperis matronalis alba-plena*, *Double White Rocket* (June and July), *Helleborus niger*, *H. angustifolius*, *Hemerocallis flava* (Yellow Day Lily) (May and June), *Iberis corisifolia* (May), *Inula grandiflora* (June and July), *Iris German* and others, *Lathyrus* (Everlasting Pea, white and red) (June to August), *Liatris spicata* (June), *Liliums* in variety, *Lupinus polyphylla*, white and blue (June to August), *Lychnis chalcidonica* fl. plena, *Lythrum roseum* (June to August), *Mulva moschata alba* (July to September), *Montbretia crocosmioides* (July to September), *Geothera frutescens majus* (June to August), *Pionias* in variety, *Poppies* in variety, including *Island* (nudaule) *Orientalis*, and *bracteatum* (June to September), *Phlox* in variety, early and late, *Polygonum com-*

patum, *P. cuspidatum* (July to September), *Primula rosea* and many others in shady borders, Pyrethrum in variety, including nigrescens, the large single white, flowering in autumn, *Ranunculus aconitifolia plena* (Fair Maids of France) (May), *Rodbeckia Nowmani*, *R. purpurea* (July to October), *Senecio pulcher* (July to October), *Silene grandiflora* (May to July), *Spiraea erucica* (June and July), *S. Filipendula plena*, *S. venusta* (June to August); *Statice latifolia* (Sea Lavender) (July to September), *Trollius europaeus* (Globe-flower) (April to June), *Tritoma grandis* (Torch-flower) (July to October), *Veronica Hendersoni* (July), *V. Traversi*, *Pinks* in variety, *Carnations*, &c. This list might be extended, but all the above are good and afford a wide range of season and colour.—E. H.

4425.—**Begonias in the garden.**—Both the double and single varieties thrive remarkably well when planted out in the open ground, though the intense heat of last week scorched up a lot of mine where not shaded; but the large, full blossoms of the former are so exhausting to the plants that they cannot be expected to continue in flower as long as the singles. Give them plenty of very old manure or spent hops, and a little good stimulating fertiliser, such as Thomson's, or good guano when the first flowers are getting over.—B. C. R.

—The Double-flowered Begonias, from my experience, are far better in pots than the open ground, and the reason is obvious. They require more individual treatment than they get in the open, where also the flowers, usually very heavy, although of brilliant and diversified colours, are battered about with storms of winds and rains. You must remember that the finest strains have very large flowers, and it is not to be expected that the same freedom will be shown as in the single kind. I should next year try and get some of the semi-double race, which I have noticed this season succeeding remarkably well in the open ground. These, I think, will become the double Begonias of the future. The flowers not so large and heavy as in the ordinary double kinds familiar to you, but more what florists call duplex, the centre being quite like a little rosette and the outer segments form a kind of foil to this mass of florets. But the charm of this race is that the flowers are produced very freely, and held well up so that they toll with force in the gardens. I saw a bed a few days ago which was a mass of colour, but I do not know where the varieties can be obtained. Possibly the nurserymen who deal more especially with Tuberosus Begonias will help you.—C. T.

4407.—**Gladioli from seed.**—The production of Gladioli from seed is one of the most interesting modes of cultivating this handsome autumn flower. Few of these favourite garden plants that have been improved by the skill of the gardener is so easily managed. The seed should, of course, be sown from the cross-fertilised flowers, selecting only those of good form and distinct colour as seed and pollen-bearers. The seed does not take very long to ripen, and the pods should be gathered as soon as they burst open. Lay them out to dry and label each cross with the names of both parents. My plan is to sow the seed thinly in 6-inch and 7-inch flower-pots. About the first week in April plunge the pots in a hot-bed. In a week or ten days the plants will appear. They are left in the frame just as they are, the heat gradually declines, and air is admitted freely, so that the plants may make healthy good growth. By the end of May remove the lights altogether. Attend to them with water, and by the end of September each plant will have formed a bulb. Dry them off, and in October pick the bulbs carefully out of the soil, and keep them in a dry frost proof place in a little sand until the first of March, when they may be planted out in rows 18 inches asunder and allow a space of about 6 inches between each bulb. Although the bulbs may not be larger than Peas, most of them will give a good flower-spike in August.—J. D. E.

—The raising of Gladioli from seed is not a very trying mode of propagation, and the chief joy in thus raising from seed is the anticipation of novelties, new shades of colour, something distinct from any that have previously appeared. If you have already a collection of Gladioli in bloom, the flowers must be artificially fertilised, and I select only the best from my temple of

anthers with the finger to prevent the pollen escaping, otherwise the crowns will be interlored with. The time to pick the seed-pods is when they commence to open at the top. Save the seed carefully and it will germinate successfully in the early ripening months, if sown thinly as in the usual way. Prepare sufficient 48 or 5-inch pots, crock them well, and use moderately light soil. The seeds germinate freely and readily as a rule, and the bulbs should be kept in pots through the summer, being planted out in the following March. They will for the most part bloom the same year, and then the finest for colour, shape, and other points should be selected. The soil for Gladioli should be fairly rich and deep.—C. T.

—How the seeds in boxes in a slightly heated frame in February, or in greenhouse. Harden off and prick out 4 inches apart in specially prepared bed as soon as large enough. There is no difficulty in raising Gladioli from seed, and it is what everyone should do who wishes to have a garden well furnished with Gladioli at a small expense.—E. H.

4363.—**Carnation and Picotee seeds.**—August is a very good time to sow these. You had better use a pan or small shallow box, as they can then be looked after much easier than when in the open border. Do not use any manure in the compost; a mixture of leaf-soil, loam, and sand, in about equal proportions, will answer admirably. Cover the seeds a sixteenth part of an inch with the finer portion of your compost, and stand in a cool pit or frame. When large enough to handle prick out into small pots, using the same compost. In the spring they may be turned out into a border, and should flower fairly well during the latter part of next summer.—P. U.

—It is certainly getting late for these now, but I have known plants from seed sown in August to flower the following season; still, you must not lose a day. Sow the seed in a well-drained box or pan of sandy loam or leaf-mould; keep just moist, cover with a sheet of glass, and keep in a frame or greenhouse, shaded from hot sun, until germination takes place. The young plants will appear in much less time under this treatment than if sown in the ordinary way in the open. When little more than an inch high transfer the seedlings singly to thumb-pots, using the same soil, and keep rather close for a time in a frame; when established and growing ventilate freely and give no shade. In October they ought to be strong enough to shift into 3½-inch pots, in which they should be wintered, plunged in ashes in a cold frame or in a cool greenhouse. Any that are not fit to shift should be kept over till the early part of February. Plant them out, having previously hardened them off thoroughly in April, in a bed of good well-drained and well-worked loam of a sandy nature. Most, if not all, of the seedlings will flower during the late summer or autumn.—B. C. R.

—Sow at once in a box or a frame, and prick out in beds as soon as large enough to handle. Most of the seedlings will flower next year under good culture.—E. H.

4371.—**Christmas Roses.**—They will bloom in a London garden at Christmas, but of course one cannot say what the weather may be; there can be no development of flowers during severe frost. They will flower well in the greenhouse with a north-west aspect. The plants should be carefully lifted and potted as the flowers begin to open.—J. D. E.

—Yes, these can be grown and flowered well in the locality mentioned; the aspect also will do, especially if enough artificial heat to rather more than exclude frost can be given. Obtain good strong flowering clumps in October or the beginning of November, and plant them either in boxes or good-sized pots (but preferring the former), using a compost of sandy loam and leaf-mould with good drainage. Keep them moderately moist but not wet, and ventilate freely in mild weather. Some of the clumps may be planted out-of-doors, where in a moderately-sheltered and shady situation they will do fairly well, but the flowers will be neither so clean nor large as those produced indoors, nor will they last so long when cut. The plants inside must be removed to the open air early in May, choosing a lightly-shaded spot, and he kept supplied with water and some weak liquid-manure occasionally as required.—B. C. R.

—Very seldom indeed will Christmas Roses open their blooms by Christmas out-of-doors without any protection whatever, except in the case of an early variety or two—maximus for instance; but then these are not the kinds that are much appreciated for decoration at that

season. The best way to make certain of blooms of *H. niger* at Christmas is to plant the roots on a border facing east or south, and in such a manner that a frame can be placed over them at the end of October to encourage an early throwing up of the flowers by the aid of a slight heat from the glass covering. It is a mistake to lift the roots for forcing inside, except a large quantity of plants are available, as it requires several years to recuperate these lifted plants before they will flower freely again; but by having them as directed, no interference with the roots is necessary. After the blooms have been gathered and there is no fear of frost injuring the tender leaves remove the frame and feed the plants liberally with liquid-manure, especially if the weather during April and May is hot and dry. It is surprising what a quantity of moisture Christmas Roses enjoy about the roots during summer.—S. P.

4377.—**Clematis attacked by mildew.**—The extreme drought of the present year is the cause of the Clematis being attacked by mildew. Nearly all the plants that I have come across growing in a southern aspect are affected in the same way. To grow Clematis really well, and especially Jackmani, there must be no lack of moisture about the roots, especially just at the time when the buds are swelling and the first blooms expanding. The present attack of mildew will not interfere with the plants in the future, providing they obtain more moisture at the root in the case of a long period of drought. However, a thorough soaking of the soil at once will assist to mature the growth thoroughly.—S. P.

—In all probability this proceeds from dryness at the root or the plants are otherwise impoverished. Treat them well by copious waterings and a mulch of manure or any material that will conserve the moisture will help, and possibly they may make more growth that will be clean and free from the pest.—A. H.

4381.—**Clematis dying.**—It is very provoking to see an apparently healthy plant die so suddenly; but yours is not an isolated case, as I have seen several similar instances. The explanation appears to be that as the better forms of Clematis are grafted upon a common variety the stock suddenly gives out. With regard to what you are to do in the future, I can only advise you to get the plants raised from cuttings if you can; but I am afraid you will have difficulty in doing so, as nurserymen find it easier to raise a stock from grafts.—J. C. C.

4434.—**Water Lilies.**—In all probability the cause of the Lilies failing to flower satisfactorily is overcrowding and exhaustion of the soil. When the tank was emptied and the roots divided it would have been well to totally or partially renew the soil; but as apparently this was not done, it will have to be done before the plants again flower satisfactorily. The tank not being very large, and presumably under perfect control, there should not be much difficulty in doing this. No indication is given as to depth of soil, but probably it is not very great. After the operation has been completed, in the future it would be well to add to the soil from time to time. When the root-run is confined manure is often beneficial, and none is better than cow-manna if it can be procured. I have heard that manure-water added to the water in which the plants are growing does good, but have never given it, all my plants having a good root-run in the natural mud deposit of the lake in which they grow.—A. H.

4411.—**Stonecrop for a rockery.**—This is a very large family, and contains a great variety of suitable kinds for the embellishment of the rockery. The following is a list of twelve sorts, neither expensive nor difficult to cultivate: *Aurea aurea elegans* (golden), *Lyidium* (green, very dense growth), *glaucom*, *moerstroem*, *albon*, *albidum*, *oppositifolium*, *laciniatum*, *pulchellum*, *rupestris*, *Sieboldi*, and *stoloniferum*.—B. P.

4380.—**Beet Self Carnations.**—Mr. Martin R. Smith, of Hayes, has given very careful attention to the raising of border Carnations of self colours, with pods that do not burst, and a few of them can be obtained at a cheap rate this autumn. They are Abigail (carmine-rose), Aline Newman (deep-red), Lady Gwendoline (deep-rose), Mrs. Lonisa Jameson (deep rosy-red), Niphotos (pure white). A few of the older varieties are Germania (yellow), King of Soarlets, Midas (pale-rose), Mrs. Reynolds Hole (apricot), Ruby (bright-rose), King of Crimsons, and Oriflamma. The above twelve varieties have been proved in the open borders and have given much satisfaction.—J. D. E.

INDOOR PLANTS.

ERICA VENTRICOSA.

We have at various times dealt with *Erica* in GARDENING, but the accompanying illustration refers to a species which is more grown than any other, and largely represented at exhibitions even in our own day; of course, many stove and greenhouse plants are very little grown now comparatively to what they were a few years ago, when they constituted the pride of the exhibitions. But through times of adversity *E. ventricosa* has held its own, and a more charming pot plant for the greenhouse or conservatory it would be difficult to find. The illustration shows its freedom and usefulness when grown well. There are several varieties: *E. V. Botwelliana* has flesh-coloured flowers, passing to red, *E. v. coccinea minor* (pink, deep-red at the apex, a compact habitated plant, profuse and showy), *E. v. grandiflora* (rose-crimson), and *E. v. magnifica* (crimson). The culture of the *Erica*, it must be remembered, demands patience and the most careful culture. Few things are so apt to suffer from neglect as the Heath, and the rock over which the amateur usually tumbles is the watering. If once a Heath gets dry it is next to impossible to bring it once

again into a really healthy condition. Those who wish to grow a collection of *Ericas* will find ample information in recent issues of GARDENING, and if a selection is made *E. ventricosa* and its varieties should be included.

gatum is a beautiful trailing plant, with very distinct variegation, and one of the most beautiful of all variegated plants. *Tradescantia zebrina* and *elegans* are respectively dark and light variegated-leaved trailing plants, and of the easiest culture; half-a-dozen cuttings put into a 3 inch pot soon develop into beautiful pots full of ornamental foliage. *Thunbergia alata* and *aurantiaca* are very pretty trailing plants that are raised from seed. The flowers are very freely produced and distinct. These plants are not nearly so much grown as they deserve to be. J. G., Gosport.

The Streptocarpuses.—These are plants suitable for amateurs. They are not hardy, but may be grown with little artificial heat, and represent a comparatively new race that will become in the future as popular as the well known *Gloxinia*, which is far more difficult to grow. The seed should be sown thinly, and just sprinkled over with soil. Use a shallow pan or pot for seed raising. The seedlings will bloom in about six months from the time of sowing, and from a packet of seed will be obtained a great variety of colours varying from white to the richest crimson, more or less blotched on the lower segments. One may compare the flower to that of the *Gloxinia* as regards

a compost of sandy loam and a little thoroughly decayed vegetable refuse. One great point is to have a little pure coal-rot at the bottom of the pot, just over the drainage. This last should not be so hollow as is generally the case or the roots are apt to come out through the bottom of the pot, and as they resent any interference this must be avoided as much as possible. Sow the seed in the pot, never attempting to transplant. I do not know of any annual more impatient of transplantation than the *Mignonette*.—P. U.

4427.—**Sulphur in a greenhouse.**—I am afraid that coating the flue with either cement or mortar will not prevent the escape of the fumes into the house, as both these materials are liable to crack when so used. It is, however, worth a trial to use cement, but it must be put on $\frac{1}{2}$ inch thick, and the sides of the flue must be well wetted immediately before the material is used. The cement should be mixed with water to the consistency of ordinary mortar, mixing up a little at a time and laid on directly.—J. C. C.

—You should have the flue thoroughly overhauled, raking out an inch or so of the old mortar from between the bricks, and repointing the whole very carefully, as well as filling up any cracks or faults, with a mixture of the best lime mortar, with a small quantity of Portland cement. Cement alone will crack with the heat. Possibly the draught also is faulty. If so, have the chimney and flue itself thoroughly swept, and if there is a damper at foot of chimney, have it removed and placed just above the fire; or, better still, regulate the draught by means of an air-tight door to the ash-pit. A damper at the foot of a chimney throws the fumes right into the house when even partially closed. This is just where it ought not to be placed.—B. C. R.

4421.—**Fuchsias.**—The plants might be cut down, but not now; wait until the spring, then see that the soil is nearly dry, cut them down to 6 inches of stem, place them in heat, and syringe frequently overhead. When the young shoots are 2 inches long, shake the plants out, reduce the roots, and repot in smaller sizes, shifting them on again as required. I should, however, advise you to take a batch of cuttings from the plants early next month (September), and then if the old plants fail to do well you will have the young ones to fall back upon, and in any case these will probably be found more vigorous and useful than the others.—B. C. R.

—Six-year-old *Fuchsias*, unless they are planted out in a conservatory border, are not so effective as younger plants. Put in cuttings now. Get up a stock of young plants and keep them growing through the winter, so as to have strong plants to start with in spring. The old plants may then be planted out in the borders, where they will make a good display, and if the crowns are protected with mounds of ashes at the approach of frost they will throw up strong shoots every season and be very effective.—E. H.

4391.—**Eucalyptus globulus.**—This is naturally a tall and rapidly growing tree, and if they do well will attain a height of 10 feet or 12 feet in a very few years. You can cut them down, of course, in the spring, March or April is the best time for this; but then you destroy the beautiful pyramidal habit natural to the tree. A few cuttings may be inserted in the greenhouse next month or in October, but it is doubtful if you succeed in striking them. Seedlings make the best plants, and in order to enable them to develop their full beauty they must have liberal treatment and plenty of room.—B. C. R.

4378.—**Neapolitan Violets.**—Do not remove the plants to a frame, it will only weaken them. Let them alone, affording, if possible, a moderately sheltered aspect and good soil. In April next you can plant out the rooted runners from these plants in good soil and an open situation, and with good culture they will make fine clumps for winter flowering in frames the following winter.—B. C. R.

4373.—**Destroying Nettles.**—Nettles are very easily destroyed. If no growth is permitted above ground there will be no Nettles in a couple of years or less. Have tops constantly pulled by a lad when they appear. If allowed to develop a new lease of life is given.—E. H.

4374.—**Manure.**—Yes, the Peat-Moss-litter is excellent for all vegetable crops, and goes twice as far as the ordinary straw manure. With a fair supply of this, some of the roots of the *Fuchsia* tribe, and a little nitrate of soda for the *Fuchsia* tribe, you should be able to grow anything to perfection.—B. C. R.



Erica ventricosa in flower.

EDGING PLANTS FOR STAGES.

The general effect of conservatories is frequently marred by reason of the front rank, or edging plants, being of too stiff and formal a habit of growth, and as there are no lack of suitable plants of graceful trailing habit, a short list of these, which any body can grow easily, may be serviceable. *Campanulas*, in several varieties of trailing habit, are excellent summer-flowering plants, easily increased by seed or division of the roots. *Isoplepis gracilis*, one of the best of all trailing Grasses, needs plenty of water to keep it moist; easily increased by division. *Lycopodiums*, or Club Mosses, are especially adapted for edging plants; their beautiful verdant green makes a splendid finish to stages. "Geraniums" of the Ivy-leaf, or trailing kinds, make capital edging plants, and they flower splendidly in small pots and allowed to hang down naturally. Musk of several sorts are useful for summer edging plants; the small flowered kinds are the strongest scented, but Harrison's are most effective. *Parium crans*

shape, but much smaller, although in time they will get larger by process of hybridisation. I have measured a single example and it was no less than 4 inches across, but this was truly an exception to, at present, a general rule. A great quantity of bloom is thrown up by a single plant, and the range of colours renders the flowers of value for cutting.—C. T.

4369.—**Stephanotis floribunda.**—This plant is usually produced from cuttings, which strike very freely in heat. It is not at all unusual for it to produce seed-pods, which are about the size of a hen's egg, and much about the same form. When the seed is ripe it may be sown, and it generally vegetates freely. I have several young seedling plants now which I am growing up to a flowering size. The pods are not edible. The first seed-pod I saw were in Scotland, in a small hot-house, in the year 1855. I have frequently seen the *Stephanotis* fruiting since that time, and gardeners who have obtained seed-pods have occasionally noted the fact in the gardening papers.—J. D. E.

4361.—**Pot Mignonette.**—There are comparatively few market growers who succeed in producing this sweet-scented flower in good quality. The few make a speciality of it, and do not readily divulge their secret. You may, however, grow it fairly well by using

ORCHIDS.

PHALÆNOPSIS ESMERALDA.

A VERY bright-coloured form of this plant comes from "Edward Jackson," named P. Baysoniana, asking me if it is correctly named, and though this name was given by Reichenbach some five years ago to a plant I never knew that it was so called. The same authority named a plant which was introduced from Coochin China by my friend M. Godefroy-Lebeuf in 1874, and yours appears to me to be identical with it. It comes from the Gulf of Siam, a part of the world from whence, no doubt, many other fine species of plants will come when it is more opened up. The natural air is very moist and hot, but the plants have been very successfully grown with the other species of the same genus. The flower is very beautifully coloured, and is one of twenty-five upon the same spike, and which must look very handsome, the sepals and petals being nearly equal, deep rosy-lilac, the three-lobed lip being of a rich and rare emethyst-purple. This part of the flower varies very much in colour in different plants. Now I am told by "Mr. Jackson" that P. Esmeralda does not lose its leaves in the winter months; this I would attribute to its not having been thoroughly rested, for I have never seen a plant of this variety which did not lose its leaves after the flowering season. I have always found it a difficult task to get it to wake up again after its long rest, but "Mr. Jackson," however, tells me the plan he has adopted in the cultivation of this plant. He says: "It thrives well in the house with other members of the same family, and although not so conspicuous or so showy as many of the larger-flowered kinds, it is really a very handsome and interesting kind, and it affords one much pleasure. I find this plant thrives well in the East Indian-house, and in a hanging-basket best of all, first draining the basket well, using for soil nothing but fresh and living Sphagnum Moss, and during the growing season giving it an abundant supply of water. I always keep it growing, but in a less degree all the winter. At this time of the year much less water is required. The plant should be hung up near to the roof-glass, giving it full exposure to the light; but I find shade is quite necessary to it during the day, so always have the blind ready to run down over it. At this time, one of the worst faults I have found in growing this species is failing to mow Moss about its roots." My readers here have a successful grower's experience with this plant, which I think is sound and practical, especially his last remark.

MATT. BRAMBLE.

ONCIDIUM SPLENDIDUM.

The question asked by "Jules Raymond," of how long this Orchid has been known in English gardens, is somewhat perplexing, for the first plant that came into English gardens I saw first in the nurseries of Mr. B. S. Williams, at Holloway, some time in the year 1868, and this was purchased by Mr. Sam Mendel, of Manchester, then an ardent collector of plants; but at his sale it passed into the hands of Lord Londeshorough, at Norbiton, then under the care of my old friend and acquaintance, Mr. Denning, who showed it in flower before the Royal Horticultural Society in the month of February, 1871. Some time after this Mr. Sander, of St. Albans, was lucky enough to get a splendid batch from a collector, and this *Oncidium* became common, and it has proved to be a very free grower and bloomer. I imagine that the reason that my friend "J. R." says his plant does not root freely nor grow well is to be ascribed to the application of too much water. I imagine either he has given the plant too great a supply and not seen that the drainage was of an exemplary character, or he has starved it by giving too little water, and during such hot weather as we have been experiencing the plant has suffered. Now, one cannot expect that this Orchid that has a large amount of moisture to keep built up in its large and thick leaves, can grow and look well if it does not make any roots, and there is another thing about water. What kind of this element do you use for these plants? I was much struck a little time back upon going into a gentleman's Cattleya-house to see the whole

plants looking miserable and bad. I spoke to him about it, and while lamenting it, said he put it down to the very hot weather; but this I could not take for an excuse, and he said that not only did the sun burn up the Sphagnum upon the soil, but it actually burns up the roots which have been made higher up. Upon this I said—"What water do you use for the plants?" The reply was—"We use the water from the tank while we have any, but this now has been exhausted for a long time, and we use it from the pump in the house;" and this pump, which draw the water from an iron soil, had worked all the mischief, and the roots above the soil had also been scorched or sanked, in spite of the water used, and such may be the case with my friend and his *Oncidium splendidum*—his water may be too hard, and does not suit the plant. I know that this season has been an exceptionally hard one to preach about the use of rain-water: but a great store of it should be put by, and the pump-water should be reserved for damping down the floors and stages; but never let a drop of this be given to the plants, either from the watering-can or the syring, and by doing this there will be a greater quantity left to give the plants. Now this *Oncidium splendidum* I know is by many authors made but a variety of the beautiful and fragrant *O. trigynum*, which is the *Oncidium Barkeri* of others; but no two plants can be more unlike—in fact, they do not appear to have anything in common. In *O. trigynum* the huds are large and globose, bearing two or three leaves, which are some 9 inches long, membraneous and bright-green; the long spike bears some loose bunches, which are bright golden-yellow, beautifully fragrant, resembling *Violeta*. In *O. splendidum* the huds are small, bearing a single leaf, which is very stout and fleshy, keeled beneath, of a dull-green, which changes with age to a bronzy-brown. So far the plants are totally unlike; but I must admit the flowers are marked very much alike; but these are totally free from perfume. But if my readers will send me a few flowers from each kind through the coming winter I will endeavour to make a distinction between them.

MATT. BRAMBLE.

ODONTOGLOSSUM HARRYANUM.

I HAVE a letter from "An Eight-years' Subscriber" respecting this plant, and I may set his mind at rest about his having treated it quite correctly, although I do think it is rather too high a temperature to keep it in; but, at the same time, it requires, or does better in, a somewhat warmer atmosphere than many of the *Odontoglossums*. But about the flowers not opening and hiding their beauty, I thought I had drawn the attention of my readers to this great fault of *O. Harryanum*, and this blemish is the only drawback to this fine kind, and if my friend will simply put his thumb into the flower between the petals, simply spreading them out, this will give them a slight bend, and then they will remain as well expanded as any drawing in any book or other place, and, in fact, in all probability it was from a flower which had passed through the above process that the drawing in question was made, and I do not think it quite just to the gardener that a figure such as this should be given without some slight notice of the manner in which it has been obtained, because I do not think a single plant has yet flowered in the country which has given a well-expanded bloom. I have heard it suggested that this is a sign of its hybrid origin, and that it is a cross-bred plant. Now, I cannot see why this should be brought about by hybridisation, nor can I draw any inference as to the probable parents of this fine plant, for it certainly must be considered a very ornamental kind. If it just has the slight assistance given it, which I have previously noted, and this enables it to open, and to reveal its beauties, and many extraordinary varieties have from time to time appeared. The plant has not been known very long—in fact, a single decade has not yet passed since it first flowered in Messrs. Veitch's nursery, they having purchased it from Mr. Horsham, of Colchester, and from whom I learnt that many collectors had been quite close to the spot where it grows without ever finding it; so that I imagine its native haunts are very restricted, and from this plant having been so recently found there is reasonable hope yet of some more new and fine species.

Reichenbach said of this plant that "it is a fresh type, a grand and unexpected surprise," and to Mr. Sander we are again indebted for the species becoming popular. The spikes upon the old imported plants were between 2 feet and 3 feet in length, bearing many flowers, but as yet I never have seen anything approaching to this size under cultivation; indeed, there appears to be a lack of active resolution in the growth of this fine plant, which appears to have crept over most people, either in consequence of the plant being abundant and cheap, or because of the non-expanding of its blooms, as mentioned by the reader; but this may be overcome by simply proceeding in the manner above described, and the effect produced warrants the use of any method to successfully combat this one great failing in the plant.

MATT. BRAMBLE.

CHRYSANTHEMUMS.

SEASONABLE CULTURAL NOTES.

THE present is a busy time amongst the plants, no matter for what purpose they are cultivated. In spite of the extremely hot weather the plants generally are in a promising condition, the foliage is large, yet of that stout leathery appearance which betokens good blooms later on, if due attention is paid to the wants of the plants from this time until they are in bloom—"Teking" the huds and supplying the plants with stimulative food are the chief points at present, although many small sundry details press heavily upon the hands of those with many other duties to attend to in the garden. Bud-teking must be attended to promptly upon those plants grown to produce large exhibition blooms. If the shoots are allowed to grow several inches after the huds have formed in the point of each shoot they rob the bud of that support necessary to build up that amount of foundation to produce well-built, solid blooms—in fact, buds so treated do not swell at the early stage as they ought. A loss of force means less bulk in the blooms. Directly it can be seen that the bud is perfect in form, not having been damaged by insect pests in any way, the shoots clustering about it should be promptly removed, so as to concentrate the whole energy of the plant into this particular spot. The work of removing these succulent shoots is best carried out during the early part of the day, or evening, when the leaves are covered with dew; they are then less tough and easily snapped off if bent suddenly downwards with the forefinger of the right hand. A little practice will enable the cultivator to remove these shoots more expeditiously than by cutting them off with a knife. This is really the explanation of the term so liberally employed of bud "taking." Many amateurs do not understand its real meaning; they think it means taking the huds off. Much attention is necessary in removing all other surplus growths which spring from the joints below, consequent upon the natural channels of growth being diverted by the removal of the leading shoots. All shoots not required for the welfare of the plant should be promptly rubbed off, no matter from what part of the plant they come. If the stock of any particular variety is scarce, owing to its shyness in throwing up outtings freely from the base at the proper season, it is a good plan to insert some of these spare shoots, especially those coming from the soil, in sandy soil in a cold frame. From these small plants many outtings will be available next December. The minimum of trouble occasioned is time well spent. Feeding the plants should now occupy the attention of the cultivator. Do not adhere to one kind of food too long at a time. A change is most beneficial, and do not by any means give doses of any kind too strong; far better give it weak and often in preference to the reverse. During showery weather artificial manures, as Thomson's Vine manure, Clay's, or dissolved bones, are most valuable, a small quantity sprinkled on the surface of each plant once in ten days, allowing the rain to wash it in, is a valuable aid just at a time when the plants cannot be watered, owing to the continued showery weather. Root-water should be given at least once a week. This measure is a capital stimulant, improving the colour of the leaves, and with that increased quantity of the bloom must necessarily follow.

Where any plants exhibit a tendency to paleness of the foliage, as in the case of *Boele d'Or*, for instance, less water should be given these for a time until a change is apparent in the colour of the leaves. Too much water at the roots is more often the cause of paleness in the leaves. The roots are kept continuously in a moist state, which the constitution of particular varieties cannot withstand with impunity. E. M.

FRUIT.

APPLE "BRADDICK'S NONPAREIL."

REALLY good dessert Apples in season during the winter are none too plentiful, and it is equally certain there are a few varieties not so well known as their merits entitle them to be. Among those latter I would give Braddick's Nonpareil a prominent place, believing it to be one of the best dessert varieties that can be grown in a private garden. The fruit is medium-sized, flattish round in shape, skin pale yellow on the shaded side, and brownish-red where exposed, there being patches of russet about the eye and other exposed parts. The flesh is yellow, moderately firm, richly flavoured, and aromatic. It remains fit for table longer than most other Apples, as it can be had good from November till the end of April. The habit of growth is somewhat slender, the variety not being well adapted for growing in a pyramidal form, but succeeding well either as a half-standard or large bush—in either case on the Crab-stock—and it is also strongly recommended for growing on the broad-leaved Paradise-stock. I have a large freely-grown bush-tree on the Crab-stock, and it was part of a fruiting branch of this from which the photograph was taken and reproduced last season. For several seasons in succession good crops have been gathered, and the tree flowered more abundantly this year than ever previously, but, unfortunately, the buds had been badly injured by severe late frosts, the result being a complete failure. My soil is a strong loam, resting on a very retentive, clayey subsoil, and only Apples with a good constitution will long remain in a healthy, productive state unless lifted and replanted occasionally.

This has not been done in the case of Braddick's Nonpareil and several other trees owing to their great size, and because I consider tempering with them likely to do more harm than good. Allowing comparatively stunted old trees to form a limited number of fresh branches to replace the older ones will frequently put new life into them, and is the only reinvigorating measure that has been adopted in the case of the specimen of Braddick's Nonpareil. This variety would appear to be better appreciated in the south-western counties than in other parts of the country, and is to be seen at its best at the Exeter late autumn shows. W.

RASPBERRIES.

It is somewhat remarkable that such a humble fruit as the Raspberry should show such aversion to particular soils as to almost fail to grow, let alone produce fruit worthy of the name. As it happens, I have had to deal with Raspberries under diversified conditions, and the first difficulty I was called upon to solve was in a garden where almost every kind of hardy fruit could be grown to perfection, the Raspberry alone excepted. Considering what a useful fruit the Raspberry is, the want of a sufficient crop is likely to be felt in any garden where hardy fruits are grown. In many instances, however, without the disadvantages of an unfavourable soil the culture itself is often at fault. As a rule, the Rasp-

berry thrives best on open sunny loam well enriched from the surface with manure, or even what we may call alluvial deposits, such as secured from the receding of rivers, old sea beds, or such as reclaimed fen lands where well drained. They also thrive the most satisfactorily on those soils which are cool and moist, although it must not be surmised from this that stagnant moisture must be allowed, as I know of no other fruit which requires a freer drainage. In the garden that I had charge of, and where Raspberries had been hopelessly tried for upwards of twenty years, it was clearly seen that some

EXTRA SOIL PREPARATION was needed if they were to succeed. In this instance all the garden trimmings and refuse that I could get together were saved, the rougher being burned and the ash returned to the hulk. With this was incorporated some lime. The whole was laid up in a heap for twelve months and turned occasionally. This formed a capital rooting medium in which the roots rambed freely and threw up vigorous canes. Trenches 18 inches in width and the same in depth were taken out where each line of plants was to go, and into this the material was placed, the best of the surface-soil being placed upon the top. The canes having been planted and set down to within 6 inches of the ground just previous to growth commencing, fine and vigorous shoots were produced,

work, the earlier it is removed the better, so that direct light may be enabled to reach the younger and growing canes. The work must not be done roughly, as the lower leaves having perhaps partially been denuded of light they are easily broken, and as these are wanted to foster and feed up the buds for next year's fruiting, any rough usage will obviously be followed by weakened canes, or at any rate very little fruit will follow on these parts of the canes which have had the leaves thus early destroyed. H.

4372.—**Melons.**—There is no information given as to the treatment the Melon have received. We are not informed whether they are grown in frames or in a house trained to a trellis? They seldom go wrong when cultivated in a well ventilated house. Indeed, the most frequent cause of their damping off in frames is an overclose atmosphere and too much moisture. It is necessary to place each fruit on a tile or a piece of slate to keep it from the damp earth.—J. D. E.

—To be successful with Melons, several details of culture must be rigidly adhered to, or failure is sure to follow. First, the plants must not be crowded; space must be given for the leaves to develop to their fullest extent; one good shoot is better than half a dozen

weakly ones. Remove small useless shoots entirely, so that those remaining will have abundance of light and air. Secondly, when the female blossoms are expanded, they must be impregnated with the pollen from the male blossoms, which are easily distinguished by their being simply blooms, whereas the female blossoms have a perfectly-formed fruit immediately behind the blossom. The middle of the day is the best time for fertilising the blossoms, so that the pollen is certain to be dry, otherwise the fertilisation will not be perfect. Thirdly, the plants must not suffer for want of moisture, either at the roots or overhead, or the fruit will fail to swell to even a fair size. Scarcity of moisture, both at the roots and about the foliage, is conducive to the presence of insect pests, such as red-spider and thrips. After the fruit is set and swelling freely, the foliage should be syringed twice daily; the roots kept moist; the character of the soil—heavy or light—will guide the cultivator as to how often the plants need watering. Persons who have had no experience do not know the result of carelessly wetting the stem of the plant. This cultural mistake causes the stem to cauter just below the surface, and eventually decays, thus spoiling the crop. The water ought not to be poured on the soil nearer than 2 inches of the stem. When the fruit is swelling freely, copious supplies of weak liquid manure will increase the size of the fruit considerably. I omitted to say that fertilisation will be accelerated if the soil is kept rather drier at the time when the plants are in flower, but not so much as to cause injury to the plants by the leaves flagging.—S. P.

4417.—**Caterpillars on bush fruits.**—The Gooseberry is frequently attacked with caterpillars, and when once they get upon the plants it is not easy to get rid of them except by hand-picking, which is a very slow, tedious process. The magpie-moth and the Gooseberry and Currant saw-fly both deposit their eggs on the bushes, and the larvæ feed upon the leaves. The last-named is the most troublesome. The eggs are laid in the spring to begin with, but successive broods are kept up until October. When the larvæ are full-grown they descend into the earth and form pupæ, from which flies emerge and stain the eggs. The pupæ remain in the soil during winter, and they can be



OUR READERS' ILLUSTRATIONS: Fruiting-branch of Apple "Braddick's Nonpareil." Engraved for GARDENING ILLUSTRATED from a photograph sent by Mr. W. Cooper Junior, Marston, Frouce, Somersetshire.

which carried a fine crop of fruit the following season. In all cases where there is a difficulty in getting Raspberries to thrive I can commend the above as a means of getting out of the difficulty, although probably it must be taken into consideration that other prominent details will have to be attended to. Amongst these one of the most important is not to fork over the plantation at any time, as the Raspberry being a surface-rooter, the forking tends to disturb the rootlets. The soil being quickly exhausted by the numberless roots which prey upon it, nourishment must be provided by giving annual top-dressings of either manure or, what is better, the latter and garden refuse combined. This dressing also tends to keep the surface cool and moist, this being what the Raspberry delights in during the summer months. Given generous treatment then, the Raspberry will well repay the cultivator for the trouble bestowed upon it. It must not be surmised that the soil or surface culture is all that is needed, for although the Raspberry is naturally a shade-loving subject, yet where the canes are allowed to grow into a crowded mass for the want of timely thinning, the heads fail to plump up on account of loss of light. The first stage of thinning consists in cutting off with a hoe during the early months of summer all rambling suckers growing away from the stools; and again at this season of the year going over the plantation and cutting out all old fruiting wood, as this having done its

destroyed by clearing the soil from under the bushes to a depth of 3 inches or 4 inches. It must be placed in the bottom of a trench, and fresh soil from the trenches put in its place. Fresh tan from the tan-yards placed under the bushes and dug in is a good remedy.—J. D. E.

— When the leaves fall, take off 3 inches or 4 inches of the top soil under the bushes, give a dressing of lime and manure, and take fresh soil from some other part of the garden, where no bushes are planted, and fill beneath the bushes. Bury the soil taken away in a trench 2 feet deep, so that the insects, when they move in the spring, cannot work their way out.—E. H.

— Any time during the month of February the bushes should be entirely coated over with a mixture of lime, soot, and clay made into the consistency of paint. If this mixture is put on alone the frost will most likely take it off, but if a handful of any kind of kitchen fat is added to every half gallon of the mixture, the whole made warm and applied with an ordinary sash tool as used by painters, there is little fear of its washing off then. This may seem a slow process, but it is a certain cure not only for caterpillars, but it prevents the birds picking out the buds, which is in itself a source of great annoyance in many gardens. Should there be a few caterpillars put in an appearance in the spring when the fruit commences to swell, a handful of hellebore powder, sprinkled on that part of the tree during the evening, will settle all it comes in contact with. Great care, however, should be exercised in the use of this chemical, as it is of a highly poisonous nature. The proper plan is to thoroughly wash the bushes the next morning with clean water, applying it with some force through the garden engine or a syringe, cleansing the trees both from powder and caterpillars at the same time.—S. P.

434.—Strawberry border.—An I write these lines I am preparing a Strawberry border by trenching up a piece of ground from which a crop of Pasa has been gathered. The subsoil is not very good, and I only work the ground to a depth of about a foot. Some good manure is placed at the bottom of the trench, and a little more is worked in with the soil nearer the surface. If the young runners are layered in flower-pots and are planted out early in August, they will carry a full crop of fruit the following season. The sooner they can be planted out the better, as the larger plants produce the greatest weight of fruit, and the quality is also better. All runners must be removed from the young plants as soon as they are formed.—J. D. E.

436.—Grapes splitting.—Great Colmar Grapes have not so much tendency to split as some others have. As the Vine is grown in a pot, the cultivator has complete control over the roots, and ought to be able to prevent any variety of Grapes from splitting. It is caused by the roots taking up too much moisture—that is, if the berries are in perfect condition. The cure for it would be to withhold water as soon as the berries show signs of the skin cracking. Rust or mildew on the skin will also cause the berries to burst, as the skin on the diseased part will not swell at the same rate as the healthy part.—J. D. E.

440.—Melone splitting.—The most frequent cause of Melone splitting is a damp, confined atmosphere. When an indication of splitting shows itself the structure in which the plants are growing should be ventilated at night, and less water given to the roots and foliage. This treatment will invariably prevent any more fruit cracking. It is the sudden admission of air after the frame or house has been closed for several hours that causes a contraction of the skin, and the more rapid the change in the internal atmosphere the more the fruit cracks.—J. C. C.

— Some varieties of Melons are more liable to be injured by the fruit splitting than others. The small scarlet-fleshed variety Scarlet Gem used to be a bad one, and seedlings from it have this fault, which is a serious one. Careful cultivation may do much to counteract the evil. It is caused by watering too much when the fruit begins to ripen, especially if the plants have had a check by being kept rather dry. This has the effect of hardening or contracting the skin, and the fruit cracks more readily when water is applied (freely) to keep the plants

growing steadily from the first, well irrigated, and freely watered. As the fruit approaches the ripening stage do not give so much water, and if the plants are carrying a good crop of fruit it seldom cracks. Should there be any signs of it cracking, the last resource is to sever the stem on which the fruits are half through. This prevents the overflow of sap, and will prevent the fruit from cracking in most instances.—J. D. E.

— This generally occurs just at the time when the fruit is changing colour, and is owing to two reasons. First, the plants are allowed to get dry at the roots, and then the soil drenched all of a sudden, which causes a too free a rush of sap to the fruit. Secondly—and the more likely reason—is the atmosphere is kept too moist and warm when the fruit is at the changing period. Melons need a warm, buoyant atmosphere, not only to ripen the fruit, but to give it flavour and prevent splitting.—S. P.

— A slight check from drought, and then heavy watering, will cause Melons to split. Deficient ventilation, especially keeping the house or frame closed late in the morning, will do it. The remedy is to alter the conditions under which they are grown.—E. H.

442.—Hedge of Gooseberries.—It is not likely that you will be able to get bushes of a bearing size trained in the way you propose. There is, however, no difficulty in starting with young trees to bring them into the form you want, as any nurseryman would make a suitable selection for you. Early Sulphur will probably make the best sordid form, as the growth is stiff; but others will not be difficult if you commence training the branches while they are young.—J. C. C.

— Gooseberry-bushes with a strong base may be bought in any nursery, and this is all that is required to begin with. If strong bushes are planted in good soil they will soon form three-branched cordons. If all the shoots except the leaders are cut out and the others permitted to grow as they please, care being taken that the branches are properly trained in as they grow.—E. H.

443.—Apple Lord Suffield in flower.—It is very unusual for an Apple-tree not to flower in the spring and to produce a full crop of blossoms in autumn. It is not at all unusual for Apple and other trees to produce blossoms in the autumn as well as in the spring. There may be something uncommon in the position of the tree in question; but its blossoming may be caused by the tree making a second growth after the excessive drought of April, May, and June. Lord Suffield Apple does not succeed in all kinds of soil and some of the best growers for market are planting Lord Grosvenor instead as an early Apple.—J. D. E.

— Although it is unusual for Apple-trees to develop their blossoms during the present month, it is by no means extremely rare, and certainly not the advantage of the tree that the blossoms are expanded. The effect such immature blossoming will have upon the tree is that the next year's fruit crop will be most likely lessened, if it bears any fruit at all. The buds cannot plump up and ripen sufficiently in such a short space of time. It would have been a wise plan to have picked off the buds directly they were visible, instead of allowing them to expand.—S. P.

— It is not uncommon for this and other kinds of Apples to flower at unseasonable times. I have often met with similar cases—know of several near where I am writing. The season has been out of joint.—E. H.

440.—Apple Cox's Orange Pippin.—It depends very much upon the season as to the time for gathering this fruit. Mine is now ready, but at other times it will hang until the end of September. If this or any other Apple is gathered before being ripe the fruit shrivels. A good test of ripeness is to pick a fruit from the most shaded part of the tree, cut it open, and if the pipe are brown all the crop may be safely gathered.—J. D. E.

— Seasons vary very much, as the present one has proved, in the matter of ripening Apples. Many sorts are thrown out of their usual season fully a month by the extreme heat and drought. As a rule, this Apple is not ready to gather until the end of September in the south. However, the best guide is to examine the fruit occasionally, cutting one in two that apparently is healthy; if the pipe are brown in colour, and the Apples part easily from the stem, the crop may be gathered and stored carefully. If the fruit is picked before it has really matured, the

Apples not only fail to keep properly by shrivelling, but that rich orange flavour which characterises this variety is absent.—S. P.

— This variety usually ripens some time in October, throughout the southern counties, earlier or later, according to the season.—B. C. R.

436.—Vines in pots.—Seven-inch pots are not large enough for Vines to fruit in. If they are strong the pots should not be less than 11 inches across the top; the weaker canes would do in pots six inch less. If the plants are in free growth at the present time they ought to be potted at once, but if the canes show signs of ripening at the base they ought not to be potted until next February. When the canes are well ripened, say, towards the beginning of September, they should be stood out-of-doors at the foot of a south wall and freely applied with water during hot and dry weather. The pots ought to be protected from frost during the winter with leaves or partly-decayed manure.—S. P.

434.—Early Strawberries.—If strong plants are turned out of pots any time before Christmas a good crop of fruit may be gathered by the next May. Noble is a good kind for the work; the fruits are large. Sir J. Paxton also is a good sort. It is no use to depend upon weakly plants. They will do better planted in the border. The lights need not go on till February or March.—E. H.

— Noble is the most productive and most handsome of the early kinds; but if you want the fruit for your own use I should advise you to grow Black Prince or Gibraltar and Keen's Seedling instead, as these are far before the other in points of quality and flavour. To obtain a full crop, runners should have been planted in June or July at the latest; but it is not too late yet, and if you can get good strong runners with some earth on the roots, or established in small pots, they will yet produce a moderate crop next summer. The frames can be placed over the plants about the middle of March, or as soon as they begin to move. If a succession of fruit is wanted, cover a few at intervals until the middle or end of April. Nothing would be gained by employing pots, on the contrary, those in the ground will produce double the weight of fruit with a quarter of the labour and care in watering, &c. Careful ventilation is the chief point.—B. C. R.

440.—Pears.—It does not answer to pick Pears unripe, for they shrivel and are not worth much. On the other hand, it is not well to allow the late Pears to hang too long. Pitmaston Duchess is not a late Pear, and should be gathered as soon as the pips begin to get brown. Maréchal de la Cour is also an October Pear. Late varieties, such as Josephine de Malines and Knight's Monarch, should be gathered about the end of September; there is nothing gained by letting them hang later.—J. D. E.

— The Pears named in the list given will not ripen on the tree, so as to be in a condition for use. They would fall off, of course, but would not get soft or mellow till they had been laid up somewhere. If a Pear is ripe enough to gather from the tree, in the case of late kinds several months before their season for use comes round, and such Pears must, of course, be laid up somewhere, and the best way of keeping choice late Pears is to wrap each fruit carefully in paper, and pack in boxes or barrels and store in a dry cellar, where there is not much fluctuation of the temperature. When the season for their use arrives take them out of the barrel or box and move to a temperature of 60 degs. to 65 degs for a few days, and the flavour will come splendidly. To tell when a Pear is ripe lift it up in the hand and bring just a little pressure to bear upon the stalk. If the Pears are fit to gather the least pressure brought to bear upon the junction of the stalk with the tree will cause a separation. If it does not do so the Pear is not fit to gather. The Pears from any grown tree may be made to last in season much longer if the season of gathering is spread over several weeks, instead of being, as they usually are, all gathered at one time. This is so self-evident that words need not be wasted about it.—E. H.

440.—Siberian Crab preserve.—Take 9 lb. of sugar and put it in a preserving pan with a pint of water. Add to a thick syrup, stirring constantly to prevent burning. Now add a dozen pounds of the fruit, and stew until the liquid is done in this way they are most delicious. —E. H.

THE KITCHEN GARDEN.

WHITE AND BROWN SPANISH ONIONS.

UNDER this heading may safely be included a large number of forms, differing very slightly, if at all, from each other, but all of good shape and serviceable. When first sent out, the so-called novelties do surpass the older forms, but in the course of a few years the stock appears to deteriorate, this confirming me in the theory that the superiority rests more with the better grown seed and the extra attention to cultural details than from any inherent and fixed qualities they possess. In the case of seed-saving from novelties, the bulbs are all well selected and



Onion "Blood Red" or "Flat Italian."

carefully ripened, while the greatest care is bestowed upon them when producing seed, the consequence being that an extra good stock is available for distribution. The commoner forms receive very different treatment, the principal aim being to save as much seed as possible, the lowness of prices forbidding any extra pains being bestowed upon them. Personally, I always prefer to pay a fairly good price for the best seed, being well assured this will germinate more surely and strongly, and the subsequent progress of the plants be far more satisfactory than in the case with inferior seeds and what results from it. I may be wrong in my deductions, but I have not met with anything to surpass the stock of true White Spanish as sown and grown for many years past by a friend in Dorsetshire. Had he so chosen, he might have exhibited it repeatedly, and then have sold it as a distinct and new form, but it would have been a good stock of the true White Spanish Onion (see cut) all the same. A good bod of Onions is always an object of pride with most gardeners. Exhibitors generally have adopted the plan of raising a considerable number of plants in boxes, the seed being sown early in February, transplanting to the open taking place towards the end of April. Although quite small when thus put out, they are yet considerably ahead of any obtained by sowing seed in the open ground, and this gain is subsequently more than maintained. The plan of sowing seed in the autumn with the Tripolis, subsequent treatment also being identical, also results in the formation of extra large and early bulbs, but these usually become much too coarse and ugly; whereas those raised in the spring mature nearly as early and are far more taking in appearance. A rich yet solid root-run is necessary for the production of firm, short-necked, long-keeping Onions—this, whether the seed is sown where the plants are to grow or transplanting is resorted to. Wall-grown, early-matured bulbs of the White or Brown Spanish types present a very clean appearance, the necks being small, but, as a rule, they are somewhat flat and often rather hollow underneath; consequently they do not weigh particularly well, and lose ground in competition with the newer forms of a different type with well-rounded bases. Nor do they keep over well. Properly harvested, bunched, or roped up, and kept cool and dry, the season may last to March, but rarely extends far beyond that month. As regards table quality, little or no fault can be found with them. Two other good Onions are the Flat Italian (see above) and Paris Silver (see page 374). The latter is excellent for pickling. G.

TOMATOES FOR WINTER.

WHERE Tomatoes are looked for during the winter months, it will depend entirely upon how the plants are treated during the next month or two whether they will turn out satisfactorily or not. Beside healthy plants, a light and well-heatd structure is needed, this being one, if not the principal, point to ensure success. It is rarely that Tomatoes succeed well when grown in stoves or pits with other things, as the conditions suitable for the one are not adapted for the other; consequently they fail. Narrow Cucumber and Melon-houses are very suitable, as these invariably are well heatd, also light, and with provision for affording a circulation of air. Indeed, as the plants of these latter are cleared out the Tomatoes will take their place, not, however, by planting them out, but by standing the pots on the hilloeka after being levelled down. The roots would ramble out into the beds, and the warm root-run would greatly benefit the plants. The latter should now be established within the next week or ten days in their fruiting-pots, and if the structure is not ready to receive them, take care that they are not neglected by being crowded up with other subjects. The best position in the meantime is in a light and airy greenhouse, where the atmosphere is warm and buoyant. Nor must the growth be crowded up by being allowed to ramble anyhow. The main leaders, and it matters little whether they are single or tripla cordons, must be kept thickly disposed, and all side laterals be kept closely pinched out. As the trusses of flowers form, attend to the setting if there should be the least sign of their falling. The earliest trusses must be scoured and those that follow throughout the next month, as after this they rarely set satisfactorily until the turn of the year again. When the summer fruiters are healthy, and they are growing in light and well-heatd structures, these often turn out very satisfactory for winter work. The older growths should be cut out and younger laterals encouraged. By attending to thinning, stepping, and setting of fruit, a good supply would most likely be obtained throughout the winter. To give the plants a fresh start, the old surface soil could be removed, replacing with a top-dressing of loam, pulverised horse-droppings, and a little charcoal. If pressed firmly, surface roots will form freely, and assist in giving the Tomatoes a fresh lease of life. Care must be taken that artificial heat is kept up, as at this season when the nights are cold disease may possibly attack them. Y.

4412.—Woodlice v. Mushrooms.—This is a very troublesome pest in the Mushroom-house, and cannot be easily got rid of. The best plan is cleanliness. In the summer-time, when the house is not in use for the Mushrooms, have it well cleaned it out; remove every scrap of rubbish that might give them shelter. My house is entirely fitted up with slate slabs on iron supports for the Mushroom-beds. If this troublesome pest appears in the winter it must be trapped by putting a bait of boiled Potato in a flower-pot laid on its side. A little dry hay in the pot will attract the woodlice. They go in to feed at night, and, feeling comfortable in the dry hay, they remain, and may be shaken out and destroyed next day.—J. D. E.

—Keep a few loads in the house, and at this season, before the autumn beds are made up, clear every bit of loose matter out of the house, whitewash the walls, and pour boiling water in every corner and crevice. If this were well done once a year, woodlice would not give much trouble.—E. H.

4414.—Onion fly.—Prevention is much better than cure when we come to deal with this troublesome pest to the cultivator of Onions, for when the maggot has once got into the Onion there is no way to destroy it—in fact, it will destroy the Onion. Therefore, the first step towards prevention is to get out all Onions as soon as it is seen they are attacked, and destroy them with the maggots to prevent their getting out, and turning into pupae in the soil. The flies are produced from the pupae in early summer, and lay their eggs on the plant near the soil; the larvae soon emerges from the eggs, and bore into the ground close to the Onion until they reach its base, when the work of destruction begins. Soot applied to the ground is a good thing; this and gas-lime may be dug into the ground in autumn, and the soot may be applied in the spring when the plants appear

above ground. Water the plants with a solution of paraffin at the rate of 2 oz. to a gallon of water. Trenching the ground deeply in winter buries the pupae out of reach, and they die when deeply buried.—J. D. E.

—The best remedy I have ever used has been soot, to be dusted over the young plants end of April till end of May. Virtually there is no remedy after the flies have laid their eggs on the plants; the soot makes the Onions distasteful, and so the fly avoids them. Possibly paraffin and water or some strong insecticide used whilst the eggs were accessible might destroy some of them, but the application must be well-timed. After the eggs are hatched and the maggots are working down to the roots nothing can save them. A good deal of help may be given by using stimulants, such as nitrate of soda, to rush the plants past the time during which the attack lasts.—E. H.

4415.—Parsley.—No doubt this is due to the intense heat and drought. The only way to prevent the same thing occurring under similar circumstances would be to shade the plants in some way—a little straw or Fern thrown over the bed would doubtless have saved it. Water the plants well with water, in which a little nitrate of soda has been dissolved, and afterwards with pure water. This will probably start them into growth again.—B. C. R.

—Parsley suffers from drought in poor soil, and a check sometimes leads to canker or insect attacks. Wood-ashes has good effect on keeping Parsley free from canker at the collar, and watering with soap-suds tends to prevent attack from insects. It is too late to sow again now, but it is possible if some of the roots were taken up, dipped in strong liquid-manure, and planted on a south border, they would start away in the fresh soil and make a lot of useful growth before winter. If the plants are cleared where they stand of all discoloured leaves, and well soaked with soot-water, a beneficial change will be effected.—E. H.

—It may be caused by the extreme drought experienced of late if the roots are growing in shallow or otherwise badly-cultivated soil, or the cause may be due to grubs at the roots. This is a very common cause of Parsley dying off at this season of the year. If the latter is the true cause water the roots thoroughly with water, to which is added petroleum at the rate of one wineglassful to three gallons of water. In some localities the young roots of Parsley are so affected by grubs as to necessitate a constant use of this insecticide in the autumn.—S. P.

—Doubtless this has turned brown owing to the dry weather. Many good gardeners complain that Parsley has done badly this year. It likes good soil and sufficient water at the roots. In ordinary seasons it is easily grown.—J. D. E.

4420.—Gas-lime and wire-worms.—I am not sure that gas-lime is the best material to destroy wire-worms, but farmers have great



Onion "White Spanish" or "Reading."

faith in it and use it extensively. They put on about 15 owt. to the acre. A good coating of soot applied so that the rain may wash it in at once is excellent. The ground should also be frequently harrowed and rolled, which exposes the wire-worms to birds, and the rolling may kill some of them. They do not like gumo, and this, if washed in by rains, is a good remedy. I advise stirring up the ground frequently during winter, and a great many of the worms would be removed with the Potatoes.—J. D. E.

4379.—Tomatoes curling up.—Tomatoes are attacked with mildew, caused by deficient ventilation, and hastened by damp conditions of the weather since the drought broke up. Cut most of the leaves close to the pair of leaflets. The fruit will ripen.—E. H.

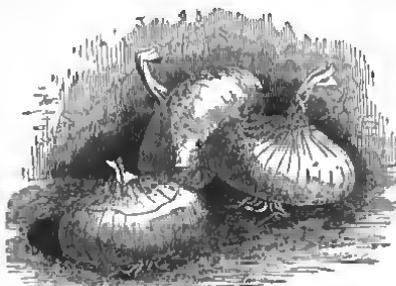
TREES & SHRUBS.

NOTES ON FLOWERING SHRUBS.—II.

FLOWERING in mid-winter, when everything is bare around, save for the little winter Aconito, the Japanese Wych Hazel, as *Hamamelis japonica* is familiarly called, deserves a good note, although not a well known shrub. But it is the things that everyone does not grow that I wish to bring before the notice of my readers. The Japanese Wych Hazel is a dwarf tree, perfectly hardy, deciduous, and loving the sun. It gets its name from the likeness of its leaves to those of the Hazel, but it is when these have not yet appeared that the golden flowers reveal their beauty, studding the naked shoots, the petals twisted, and the calyx, although small, is in evidence from its crimson colouring. One tree in the garden is perhaps sufficient, but the *Hamamelis* is worth recognition. A glorious garden shrub, with a terrible name, is *Hydrangea paniculate grandiflora*, and it succeeds in ordinary gardens. One bush of it on the turf makes a beautiful effect in autumn, the heavy clusters of white flowers being much larger than those of the common *Hydrangea*, and the growth will be of great vigour if the soil is made rich. When the shrub is in perfect health it will grow about 4 feet in height, and is borne down in summer with its burden of flowers. The great point is to keep the old shoots out away so as to throw vigour into the new growth. A wealth of beauty is contained in the *Magnolias*. The glorious *M. grandiflora* that one usually sees against houses is not the only species that deserves a place. I know from experience that even in suburban gardens the early-blooming *M. conspicua* will give a good account of itself. This flowers quite early in the year, before even the leaves have appeared, and the blossoms are like white cups, thickly covering the leafless branches. A specimen of it in front of an evergreen shrub is very charming, and the bloom is in a measure protected from unpleasant weather trials. An interesting variety, a little later in blooming, is *M. conspicua Soulangiana*, the flowers touched with rose-purple and of similar expression. *M. glauca* is a handsome tree, the bold foliage retained throughout the year, white, fragrant flowers that appear in midsummer being its chief characteristics. A healthy specimen of it on the lawn is a distinct gain to the garden. This small selection of *Magnolias* will be ample for all ordinary gardens, but the list can be easily extended by adding such fine things as the *Cucumber-tree*, *M. acuminata*, and *M. umbellata* or *M. triptera*. Very distinct from the *Magnolias* are the *Mock Oranges* or *Philadelphuses*, commonly called *Syringes*, but why is not exactly evident, as the *Lilac* is the *Syringa* proper. Still that is a matter of small moment. It does not detract from the beauty of the *Mock Oranges*, each flower like a magnificent *Orange-blossom*, just as sweet, making the garden a fragrant spot. One often wanders into an old-fashioned garden in the summer and smells the *Philadelphuses* many yards off—a rich, agreeable perfume, too heavy almost when the shoots are out for the house. These shrubs are normally crowded up into shrubberies, but thus barbarously treated they are deprived of their true elegance and beauty. Beside varieties of the common *P. coronarius*, the species most frequently planted, there is another flower which is adapted peculiarly for small gardens, as it does not occupy much space. This is the small-leaved *Mock Orange* (*P. microphyllus*), the smallest of the genus, the leaves no larger than those of the *Myrtle*. A specimen of it on the lawn is full of beauty, the branches toning the Grass, and wreathed with white flowers, delicately scented and full of grace. It is quite hardy except in the coldest localities, and is one of the most precious shrubs that we have had from New Mexico. The *Philadelphuses* succeed best in fairly light soils and sunny positions. Another very charming class is that formed by the *Viburnums*, or *Guelder Roses*. The common *Guelder Rose* is one of the most graceful of dwarf-flowering trees, and its aspect when in bloom is too familiar to need description, but we have also the Chinese *Guelder Rose* (*V. plicatum*), a beautiful garden shrub, stiffer in growth than the commoner type, and more spreading. The creamy-white bunches of flowers are used thickly on the branches, and a distinct contrast

to the deep-green wrinkled leafage. A light soil and moderate shelter are the chief requirements, and under these conditions a wealth of bloom may be expected each summer. Its freedom in blooming is most marked. I have seen a shrub so thickly covered with flowers as to prevent the leafage, except here and there, being seen. It is the fashion, unfortunately, to cling to one kind of thing too much in gardens, but I am afraid the truth is that the gold-mine of beautiful flowering shrubs and trees has not been worked. Take the *Robinias*, or *False Acacias*, for example. The common *Acacia*, sometimes called the *Locust-tree* (*R. pseudo-acacia*), and it will be found in the majority of gardens. It deserves popularity, being beautiful in leaf and flower, hardy, and of quick growth, but a word may also be said for such a priceless treasure in the way of flowering trees as the *Rose Acacia*, *R. hispida*, a glorious species from North America, that should be planted in even quite small gardens, whether in the vicinity of large towns or in the pure air of the country. I enjoy the picture of a good specimen in full bloom, when its rich rosy-coloured flowers are in perfection in the leafy month of June, and it will grow in ordinary soil and situation. The great thing is not to plant too near high roads, as passers-by are apt to take of its flowery treasures, so profusely borne. One may also choose some of its varieties, but the type is sufficiently beautiful, and the possessor of the small garden may be content with it. The

Spiræas are a valuable family, and there are many of them all more or less beautiful. The trouble is, in fact, to know what to select and what to avoid. A species of much interest and beauty is *S. arifolia*, a North American shrub,



Onion "Paris Silver-skinned." (See page 373.)

usually rising about 6 feet in height; but it will grow most when in a thoroughly good soil and position. It is slender in growth, and is one of those things completely spoilt by being crowded up in an ordinary shrubbery, as one then loses entirely its characteristic elegance. A specimen on the lawn is unfettered by stronger growing neighbours, and a profusion of the fine plummy clusters is produced in the height of summer. If only one *Spiræa* can be grown, my choice would be *S. arifolia*, but the genus is so rich in beautiful things that one likes to have *S. Bumalda*, which is quite dwarf, not more than 2 feet in height, the flattened clusters of flowers being of a rosy colour, whilst also useful are *S. Douglasi*, *S. calcifolia*, or the Willow-leaved *Spiræa*, the dwarf *S. callosa* (deep-pink flowers), *S. Reevesiana*, *S. Lindleyana*, and *S. Thunbergi*. A golden rule in growing *Spiræas* is to have the soil moderately light, and the position sheltered. The fault of small as of large gardens is their monotonous aspect and absence of variety in the things planted. Common subjects are repeated until the eye rests with relief upon any subject out of the normal routine, therefore there is justification for enumerating many trees and plants not always seen, and not always grown well. Even now there is room for the Syrian *Ithiæna* (*H. syriaca*), in one or more of its many beautiful varieties, the double *Yellow Jew's Mallow* (*Kerria japonica*), very pleasing against a wall, *Olestra Haasti*, the *Rhus* continuo, or *Sinbad*, the *Snowdrop-tree* (*Halesia tetraptera*), so called from its *Snowdrop*-like flowers, *Laburnums*, *Weigelas*, the Japanese *Quince* (*Cydonia japonica*), and the exquisite *Amelanchier*, or *June Berry*. All are worth planting, and any one of them may be selected with the full knowledge that it will give pleasure.

4359.—*Choiysa ternata*.—This *Choiysa* is commonly called the Mexican *Orange-tree*; the blossoms are very like those of the *Orange-tree*. Where it succeeds in the open it is a capital subject to plant at the foot of a low wall or fence, or even growing as a bush in a sunny spot in the mixed shrubbery it is ornamental. In all the southern counties it is quite hardy, when receiving the protection of a south wall, at any rate. With me it generally flowers twice yearly; the fullest crop is, however, borne in April or May, when the plants are one sheet of pure white blossoms, which is much enhanced by the deep green of its foliage. Propagation is easily effected by means of the short, half-ripened shoots in the spring, taken off with a heel, if possible, inserted round the edge of a 3-inch pot, using sandy soil and plunging the pot in a gentle bottom-heat; afterwards gradually harden off until they will stand out-of-doors entirely. Any ordinary garden soil will grow this plant, providing it is broken up deeply, allowing the surplus water to pass quickly off from heavy rains during the winter. Abundance of water given to the roots during hot and dry weather will facilitate the growth very considerably remembering that if the growth is free in a like manner will the flowers be produced. But little pruning is necessary; rather tie the shoots in to the wall closely; more flowers will then be had. As a pot-plant for the greenhouse this *Choiysa* is valuable. By planting in too rich soil the growth will be short-jointed and firm. Stand the plant out-of-doors during the summer to ripen the wood thoroughly, and thus procure a full crop of blossoms.—S. P.

4376.—*Cutting back Hollies*.—The month of February is a good time to prune *Hollies* of any kind. There is but one reason why they may not be done at Christmas, or even earlier, and it is this, that the plants will look bare and unsightly during the period when evergreen shrubs are the most valuable—viz., during the winter. *Hollies* of any size are quite amenable to being closely pruned, and are very often more vigorous in growth afterwards, especially if the soil about the surface roots can be replaced with some fresh material, adding manure to it liberally. Liquid-manure given to the roots during the month of March is a capital stimulant to *Hollies* of any kind.—S. P.

4119.—*Mountain Ash berries*.—Dip them in ordinary varnish, and hang up till dry. Wax would answer the same purpose, or anything just to exclude the air.—B. C. R.

ROSES,

4135.—*Culture of Roses for exhibition*.—According to your statement you have already 250 plants of nearly as many varieties, none of which appears to give you such large flowers as you desire. It can hardly be that amongst so great a variety that you have not got a good number of sorts suitable for exhibition. That being so, does it not occur to you that the want of size in the flowers is through some fault in the management? Either your ground is not strong enough or some of the details are not understood. Where the fault is it is impossible for a stranger to say, but that it is in the direction indicated is pretty clear. It is important for you to bear in mind that you are looking for size in individual varieties you are in danger of introducing a degree of coarseness in the flowers that is undesirable. Such naturally big roses as *Her Majesty*, *Earl of Dufferin*, *Paul Neyron*, and *Captain Christy* are not improved for exhibition purposes by any special treatment. Presuming always that the plants are judiciously treated, amongst the H.P.'s you will get size and quality associated with good form in such sorts as *Alfred K. Williams*, *Ulrich Brunner*, *Mrs. J. Laing*, *Marie Beaumant*, *Victor Hugo*, and *Marguerite de St. Amand*. Your selection of Teas do not please me greatly for open-air culture. I should discard *Niphetos*, *Madame Charles*, and *Catherine Mermet*, and substitute *Countess of Folkestone*, *Princess of Wales*, and *Perle de Lyon*. I should prefer *Luciole* or *Anna Olivier* to *Jeanne Ducher*, which is very good under glass. In the half-open bud state *Madame Charles* is very beautiful, but in a warm room or tent quickly expands and shows a prominent eye. Seeing how moderate your ambition is when you say you will be content with a stand of twelve blooms, you make it very clear that you are growing too many

varieties, you would do better with a less number. You want six plants of most of the sorts you grow, and to get a stand of twelve thirty varieties would not be too many to select from on a given date. However, if you add twelve to your present stock, with six plants of each, you ought to take a winning place if other things are equal. With regard to pruning, you must cut the Teas back nearly as hard as you do the H.P.'s, leaving five buds on the former where you leave three on the latter.—J. C. C.

4433.—**Manure for Roses**.—Looking at the liberal way in which you treat your Roses, I think you will act wisely if you discontinue the use of pig-eye manure, as it is of such a strong odorant that it is likely to promote undue luxuriance, and then severe frost might injure the plant. With regard to budding, I think it is an advantage if you remove the surplus buds as soon as they are formed. So many people allow the buds to get quite large before they remove them, that they cannot judge correctly whether it is a good plan or not. The following twenty-four varieties of H.P.'s I selected last year from a first prize collection of seventy-two as the cream of the lot: Alfred K. Williams, Ulrich Brunner, Alfred Colomb, Henri Schnitzius, Earl Dufferin, May Quennell, La France, Marie Beaumann, Marie Finger, Mrs. J. Laing, Her Majesty, Duchesse de Bedford, Emilie Hausburg, Comtesse de Serenyi, Mrs. Jowitz, Charles Lamb, Merveille de Lyon, Françoise Nobelen, Mme. Gabrielle Luizat, Marguerite de St. Amand, Duo de Rohan, Duke of Edinburgh, and Fisher Holmes.—J. C. C.

4416.—**Tea Roses**.—There are many Tea Roses as large as those you mention; but it is as well that you should know that many of the largest have a somewhat pendent habit—that is, the flowers droop when fully expanded, and what is wanted is that they should stand erect, as in the case of such varieties as Perle de Lyon, President, and Mrs. James Wilson. You will find the following good large flowers, and in most cases freely produced: Comtesse de Naidillan, Jules Finger, Luciole, Mme. de Wattoville, Mme. Jules Margottin, Sombrenil, The Bride, and three first mentioned.—J. C. C.

4423.—**Roses against a wall**.—Your wall is not high enough for such a strong growing Rose as Gloire de Dijon. A height of 20 feet suits it better. Instead of cutting back the strong shoots now, cannot you bring them down in a more horizontal direction? They will then flower next year at nearly every eye along the branch. If you cannot do this you must cut off the tops down to the height of the wall. At the same time, put in a plant of Marie Van Houtto by the side of the other, and in a year or two remove the one you now have. If yours is a good soil you will always have the same trouble that you complain of now, and Marie Van Houtto is nearly as free to bloom as our old friend the Gloire.—J. C. C.

4375.—**Border of Rose**.—Pray do not attempt to bud upon Manetti-stocks in the state you describe yours to be. If you do there will be a constant nuisance with suckers, which are certain to push up from the old stools and destroy all prospects of satisfactory results. Grubbing them out, renovating the border and planting afresh is the only chance of future success under such circumstances.—P. U.

4358.—**Roses in small pots**.—I like to see Roses grown and flowered in small pots. I have had nice plants of Tea Roses flowered in 5-inch pots. The plants were struck from cuttings, and they grew very vigorously and flowered splendidly. I repotted some of them into 7-inch and 8-inch pots, and they were most satisfactory. Others were planted out, and most of them grew with great vigor. Large, handsome specimens can be grown and flowered in 8-inch pots, and they will do very well indeed in 6-inch for one season, and should be repotted afterwards. They should have good potting-soil—good yellow loam, four parts, one part leaf-mould, one part decayed manure, with some coarse sand, and a 7-inch pot full of powdered bones to each barrow-load of the compost.—J. D. E.

Drawings for "Gardening"—Readers will kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruits and vegetables for drawing. The drawings so made will be engraved in the best manner, and will appear in due course in GARDENING ILLUSTRATED.

HOUSE & WINDOW GARDENING.

MYRTLES FOR A WINDOW.

To show off brilliant-flowering plants in a window a background of green is often needed, and there are few better plants for this purpose than Myrtles, which always look handsome, while they should become highly decorative themselves during their blooming season. They accommodate themselves well to the conditions of life in a window if given plenty of air, and their foliage is kept thoroughly clean. In the larger-leaved varieties this is not difficult, as a soft hit of sponge can be employed to wash the leaves with pure warm water, if there be no blight on the plant, and a little soft-soap and Quassia, if necessary; but when the smaller-leaved kinds of Myrtles are grown this process of sponging becomes tiresome, and syringing must then be resorted to, or the plant can be placed out in heavy rain when it needs cleansing. To induce a Myrtle to flower freely the wood must be thoroughly ripened in July and August, when the plant should stand out-of-doors in a position where it obtains plenty of sunshine and watered regularly, for any failure in this may make it drop its leaves. The pot should be plunged to the rim in a bed (or box) of fine cool-shades, for the action of the sun on the roots which cling to the pot would be disastrous, although the plant itself must be well exposed to it. Kept rather dry and cool through the winter, in any place from which frost is excluded, and repotted in March, the Myrtle should be covered with bloom during the summer, its beauty and fragrance being remarkable.

CUTTINGS are easily grown in summer, either in moist sandy soil in pots covered with a bell-glass (or a tumbler in the case of a single slip), or in a bottle of water, where the roots will strike freely, and the plant can then be transferred with care to a small pot. Any ordinary potting compost of loam, leaf-mould, and sand, with a dash of soot (not exceeding a twentieth part of the whole), will grow them well, and liquid-manure in the shape of soot-water will help them much during the summer months, when in rapid growth, if given not more than twice a week in a thin, clear state. L. R.

The Nemesea.—From what I have seen of this new annual it is a very charming kind. I know the readers of GARDENING are interested in the new plants, flowers, or fruits that are introduced, and therefore a note on the comparatively new Nemesea strumosa Sutton will be welcome. It was introduced by Messrs. Sutton and Sons, of Reading, from South Africa about four years ago. I saw the first plants in flower and felt convinced that the Nemesea would get very popular. It is unlike the ordinary type of annual, and has more the aspect of a perennial, the more important feature of note being the great range of colours in the flowers, varying from deep-orange to bright-scarlet. Orange is the prevailing colour, and those flowers of this tone in the centre, shading to yellow, are more common, whilst salmon, cerise, and pink shades occur. The leafage is rather sparse, but the profusion of bloom makes up for this deficiency, whilst the individual flowers are about 1 inch across, and crowded on the spikes, these being nearly a foot in height. Seed may be raised as in the case of other annuals—that is, by sowing seeds in the spring under glass and hardening them off before putting them out in their permanent places in the month of May. A distance of 1 foot each way will suffice.—V. C.

A beautiful Knotweed.—There are many Knotweeds. Perhaps the most peculiar is the common Japan Asparagus or Knotweed, botanically known as Polygonum cuspidatum, which is a wood unless kept under proper control. But the plant I recommend now is of a different type. It is called P. sphaerostachya, and is as yet rare, although not likely long to remain so. It reminds one of P. bistorta, and has long, narrow, rich-green leaves, whilst the flower-buds are about 2 inches in depth, and deep lustrous crimson. It is this intense colour that constitutes the great charm of this Himalayan plant. As the flowers are produced freely at the base of the rookery when well established in a fairly light soil and sunny spot.—V. C.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of GARDENING, 37, Southampton-street, Covent-garden, London. Letters on business should be sent to the Publishers. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, so far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appeared.

4455.—**Climbers**.—What sorts can I get to have an assortment of colours?—LACONOPOLIS.

4456.—**Best Strawberries**.—Will someone kindly tell me the names of the best dessert Strawberries?—ARANT.

4457.—**Gravel road and walk**.—Is there anything to prevent a green sort of slime collecting on a gravel road and walks?—M. B.

4458.—**Striking Ceanothus**.—I wish to know how to strike Ceanothus—whether when leaves are off, like Honey-suckle, or not?—M. A. D.

4459.—**Treatment of a Stephanotis**.—Would someone please state what amount of heat will best suit a Stephanotis?—HELVY OAK.

4460.—**Management of Hollyhocks**.—Will someone kindly tell me something about the general management of Hollyhocks?—A CONSTANT READER.

4461.—**Pollarding Apple-trees, &c.**—What would be the effect on Apple-trees if pollarding them? What is the best remedy for old Apple-trees which have canker?—E. C. H.

4462.—**Creeper for a small greenhouse**.—What would be the best creeper for a small greenhouse heated by hot-water pipes during winter, and feeling south-west?—ARANT.

4463.—**Seed from Tomatoes**.—I should be greatly obliged if someone would tell me the best way of obtaining seed from Tomatoes. Also, should the largest fruits be chosen?—JAWON.

4464.—**Fern seed**.—How long does Fern seed take to germinate? I have no glass, but have sown some in a fern pan, with a sheet of glass over it, and placed in a warm room. Will they come to anything?—A. O.

4465.—**Mountain Ash (Rosa rugosa)**.—Will anyone kindly tell me how to preserve Mountain Ash berries, and the hips of the Rosa rugosa, for decorative purposes to the winter?—M. A. P. S.

4466.—**Laurels and Rhododendrons**.—Is this a good time to trim Laurels and Rhododendrons? Is it not the time to trim a Taxodium now instead of spring? How long should Viburnum cuttings be kept under hand-glass?—M. B.

4467.—**Fuchsias**.—Will "V. C." kindly tell us where we can procure the Duncrobin Bedder for sale, or about the other week? Also would he, or someone else, kindly give the names of one or two dwarf and hardy kinds? I would like to try them next year. I think they would stand the smoke and dust?—LACONOPOLIS.

4468.—**Neglected Asparagus beds**.—Asparagus beds have been much neglected and full of weeds. When is the best time to lift roots in order to clean beds? Shall I manure by digging in or by top-dressing? Can I cut from beds which have been so treated next season?—ARFORD HOUSE, THURLES, IRELAND.

4469.—**Plantation of Raspberries**.—"Sub-urban" will be best for advice respecting treatment of plantation of Raspberries, which has been much neglected—viz., what canes to remove, and when? Also about manuring and general care to ensure good crop next season.—SUCCESSION, IRELAND.

4470.—**Arborearias**.—I have on my lawn four very fine Arborearias. They are about 14 feet or 15 feet high on clay subsoil. All the branches to nearly the top of one of these trees is dead this summer. I should like to know the cause of this one getting off in that manner, and the other three trees are throwing out young branches?—ELIAN JELLYMAN.

4471.—**Wood-sheds**.—Will anyone tell me where to obtain wood-sheds? I have applied in vain to dry-layers, who do not make, and chemists. These sheds are constantly recommended in gardening books, but I find them a most useful paper. After reading it I pass it on to my gardener, marking any article which I desire him to note.—HESON.

4472.—**Scale Insects**.—I should be glad to know what I ought to do so a Peach-tree which has been infested by these insects to prevent them from reappearing next year? I have rubbed off all the scales, but I have reason to believe that many grubs are already hatched and hiding in the bark? Would it injure the tree to wash the bark of the branches with paraffin?—B.

4473.—**Lily of the Valley**.—A bed of Lily of the Valley has become smothered with weeds. When is the best time to lift roots for purpose of cleaning bed? I dug in manure, or merely top-dress, and when? If I divide clumps which are very thick, shall I, by so doing, sink the flowers for next year? If I lift the bed with thinning will they flower next season?—ARFORD HOUSE, THURLES, IRELAND.

4471.—Propagating a Magnolia.—Will anyone kindly inform me if the Magnolia can be propagated from cuttings, and when should these be taken? I have two Magnolia-trees, one having a south aspect. It is an old tree and bears many flowers; the other is a young tree with an east aspect. This is only the third season it has flowered, and has had two, five, and this year three flowers?—M. E. L.

4472.—A new house.—I shall be moving into a new house, which has been built on a field, the end of next month, and to which is attached a piece of land for garden, about 170 feet by 85 feet, now in grass. I should be glad if anyone would advise me the best way to proceed to get it into order as soon as possible for planting, and also what I could plant with advantage now. Soil rich, garden running north and south.—A. T. D.

4473.—Himantophyllum.—I shall be much obliged by any answers to the following: A plant of Himantophyllum minimum has two offsets, with five leaves on each, full grown, and another offset just starting. Which is best, to leave them on the plant, or to have two pots? I shall not be able to put to heat until cold weather sets in. I have allowed two seed-pods to remain on the parent plant. When ripe, how should they be treated?—W. H. J.

4477.—Making Asparagus-beds.—I am going to make some Asparagus beds if some experienced reader will say if the way will be right I am going to start? My soil after one spad deep is porous. I am going to take out 3 feet deep, cart it straight away, and then start road-scrapping one layer, then salt, then manure, so on until it is finished? Would three-year plants do, and could I start to cut the first year? What time would be the best to start? A few practical hints would greatly oblige.—ANAPROUS LOVER.

4478.—Agapanthus umbellatus albus.—Is it possible to force this lovely thing, as in GARDENING ILLUSTRATED that it was advisable not to water it in the winter, as it died down. I had a blue Agapanthus as well as the white (new plants), and treated them exactly as advised, and when the flowers came out, lo! the labels had been put on the wrong plants, and the white had received the treatment meant for the blue, and with the best results, as there were three splendid heads of bloom on it; the blue did not bloom at all.—W. H. J.

4479.—Planting Rose-beds.—Many persons advise the planting of Roses and other beds with dwarf alpine plants to cover the surface. I want to know how to protect the plants under these circumstances? I have always applied a thick layer of stable-manure to my Rose-beds in winter, and dug it in in spring. Must the carpet plants be removed, or covered with the manure? I should like to carry out the plan with my shrubby borders if possible, but they have to be heavily manured every spring, as the roots of the shrubs exhaust the soil.—MERON.

4480.—Plants for winter.—My garden is now full of bloom, and so beautiful is the effect of the various bedding and other plants, also Roses, now in their glory, that I am dreading the approach of winter, with a consequent disappearance of these lovely floral gems. Will anyone, however, suggest to me the best plants for the garden, kindly say what plants should be put in the month? Aspect due south, gentle slope, rich earth, well exposed to easterly winds. I may say my Roses have bloomed beautifully this year.—SEMPER FIDELIS.

4481.—Growing Osluyne cristata.—I have two 7-inch pots of the above Orchids that were bought from a nurseryman about two years ago. They have never had one single bloom on yet. I am told it is a easy one to grow. Easy or not easy, I can't grow it; I wish I could! I have got a beautiful one, well heated. I thought it was coming into flower about a week ago, but seems to be latent coming out the base of the flower buds. I am told it will grow on wood. What kind of wood? How should I do it? Would be glad of a little help. Dendrobium I have got don't seem to be doing well.—CONSTANT READER.

4482.—A saddle boiler.—I have bought a second-hand saddle boiler, and I see there has been a 1-inch pipe put in the top. It is intended that it should be for exhausting steam in the event of water getting very hot! There is an open supply tank at the extreme end of piping from boiler 100 feet. Also, we are placing flow-pipe at top of boiler with a gradual rise to supply tank, but the return-pipe branches off with smaller pipes to each side of bottom of boiler, the consequence is an incline of more than 2 feet more than to the flow-pipe. Would it matter if the flow-pipe was perfectly level? In that case there would be 12 inches fall in the 100 feet from supply tank of the return-pipe. My reason is to have a cock-hole as high as I can.—JAMES HARRISON.

4483.—Heating a greenhouse by oil-lamps.—I had a greenhouse built this summer, 3 yards long and 2½ yards wide inside. It is built against a wall. The district is North-west Manchester—the coldest part. I have spoken to several people about heating, and some say that oil-lamps are of no use, and others say that I should find them to answer well for a greenhouse of this size? I should like to have an opinion on the matter, as if oil-lamps, which they will be less expensive than hot-water apparatus, but on the other hand, I want to keep my plants alive during the winter. I intend to plant Roses to grow up the bank wall; they will not grow outside owing to the smoke. What else can I try to grow?—W. HAYES.

4484.—Red and White Laperarias.—I have a Red and White Laperaria planted out in each end of a passage. The drainage appears to be all right, and the plants are traced on the roof and along it in galvanised iron wire. At several places where the stem touches the wire brown marks have appeared, and to the case of the white one to such an extent that I am afraid it will die. Had I better cut these shoots back as soon as the flowering is over? They are from 18 feet to 20 feet in length, and the marks begin close to the bottom of the shoot, when it first touches the wire. The red ones are not so bad; the white, as I have stated, please. But will this plant be in rather more shaded place? But will this plant be in rather more shaded place? But will this plant be in rather more shaded place? But will this plant be in rather more shaded place? I have noticed, for the last two years, the plants of the young shoots kept dying back, which I could account for. I shall be very glad if you can give me any advice.

The plants have been planted about six or seven years, and they have had a top-dressing of fresh soil every year.—W. D. S.

4485.—Vine trouble.—I am in trouble concerning my Vines. The house is a lean-to, it is 40 feet long, with outside border 3 feet wide, raised 1 foot, at foot and 18 inches at back. I have in it four Vines about twenty years old, and three about seven years old. My first year, 1870, was a failure. I took to the place too late to do them well. In 1891 I had 75 fair bunches. In 1892, 125 bunches, with a few shankers. Then I followed the advice of GAZANZING. In the autumn I took a trench out of the border, 2 feet deep, and filled it in with lime and plaster rubble. In February I gave the border two bushels of bone-dust and a liberal supply of fresh stable-manure, and allowed the Vines-roots to break naturally. I followed up with five, and I rejoiced to see a bunch at almost every side-shoot. In due course I cut out more than a hundred bunches, leaving about four hundred, and all went well up to three weeks ago, when the colouring appeared to stop, and the bunches are now going limp and very indented. I cannot trace any disease and very little shanking. Seven weeks ago I gave the border a dressing of cow-dung, thinking to give support through the ripening stage. Will any of your correspondents help me? I have dumped the house every evening.—ALFARO DAVISO.

4486.—Nasturtium and Tropaeolum.—What is the difference between the two? I would like to know a little more than I do about the habits and treatment of the different kinds? I am living in a very sticky district, and I cannot get anything I have tried yet to stand the smoke and showers of ashes that fall in my back yard, the only place I have to grow a few plants, except the Nasturtium, Stokes, Marigolds, Sweet Peas, "Geranium," &c., will not stand it. The blooms of one and all open and fall off in a very short time, although the plants are vigorous enough. I have Scarlet Runners 18 feet high, and still growing. Great trusses of buds open out at every joint, but fall off to a day. They do not stay on long enough to form a pod. Now, the Nasturtium are splendid, 3 feet or 4 feet high, and covered with blooms, and the leaves are clean and healthy, while all the other things are covered with dirt. I have only four hours' sun a day, from eight to twelve, about an hour longer in June. What I want to know is, what will bloom and stand the dirt as well as the ordinary Nasturtium? Is the Climbing Nasturtium the same thing as the old fall kinds? 3. Please recommend a quick and hardy climber for a window, four hours' sun, north-east aspect, either to plant now or to the spring?—ISOROBOLIS.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

4487.—Insect pests (Eight Year Subscriber).—What insects they were you sent I cannot say, for when they arrived they were all reduced to a powder, but all such things should always be kept away. So take my advice, and clear all the things away carefully, and keep them clean and comfortable.—J. J.

4488.—Tree-Ferns (Kitts).—It is quite impossible to place names to these small plants sent to me on the 10th inst. It is quite difficult enough to make out the smaller kinds from such diminutive specimens, and when you give me such a task I must decline it with thanks. You do not give me the slightest size of the plants, or any one thing to form an opinion upon.—J. J.

4489.—Dendrobium thysiflorum.—In reply to an "Eight Year Subscriber," this plant, having finished its growth, should have the water supply stopped, and it may be placed in a cooler house, exposed to the sun and with a good supply of air; but do not keep it so dry that the bulbs or leaves suffer, and if the growths are strong enough, you will be rewarded by the appearance of its large and ornamental pendulous spike of bloom by-and-by.—M. B.

4490.—Epidendrum tovarense (July).—I do not know if I am right about this plant, and I do not remember to have seen it in any collection in this country; but I have seen it in many gardens abroad, but never in flower, so that when you plant it, should be the extreme or obliged if you will send me one. The plant comes from the mountains of Venezuela, and does best under cool treatment in the summer, but it would appear to want a slightly warmer temperature during the winter months.—M. B.

4491.—Hardy ornamental Ferns (Fernist).—In answer to this enquirer, I think the following kinds will suit you admirably. I have carefully avoided small and misty kinds, and these are as distinct from our own native kinds as possible: Arhated virginiana, Botrychium lucidoloides, Botrychium virginicum, Lastrea podophylla, Lomaria obliquata, Lomaria arcolata, Onoclea sensibilis, Osmunda cinnamomea, Osmunda Claytoniana, Polystichum acrostichoides, Streptopodium germanicum, Struthiopteris pennsylvanicum.—J. J.

4492.—Oniscus (woodlice) (C. B.).—I have had several complaints of the damage caused by these pests, and I have tried most means in the effort to destroy them. O. asellus, which may be readily distinguished from O. aspidillo by the last-mentioned rolling up into a ball when disturbed, or when at rest. The writers complaint of the spikes of the Orchids being eaten by them. To prevent them getting up these, cotton wool should be put on the spike quite low down; this prevents them climbing up. They should be washed out of their haunts by the application of strong gas-water, and gas-time should also be laid about their runs. Try pieces of wool and small empty pots for entrapping them.—M. B.

4493.—Catalpa gigas (J. S.).—This is a fine flower which you send. I take it to be the variety Sandbariana, but it is rather a starchy flower, which, however, may improve, and another season the petals may come broader, and thus fill up the space better between the sepals and the petals, making it a more rounded and a taller flower. Under flowers always present a better appearance, and are more taking. The colour is all the better for being kept cool, so that it does not start into growth through

the winter, and let me hear from you again next year what it blooms. You may keep it cool and dry after its growth is finished up, but not too dry, or otherwise the buds and leaves will suffer, which must not be allowed.—M. B.

4494.—Epidendrum Frederici Galleitii (July).—This is a plant that comes from the mountains of Peru, at 6,000 feet to 8,000 feet elevation. It was first introduced by Mr. Lindoo some years ago, but more recently it has been introduced by Mr. Shuttleworth, of Clapham, who, however, I think made a mistake in having his plants out down too short; it weakened the old stools and made them break rather weak, but I find them increasing in strength in various places, and if you treat your plant in a rational manner, it will gain strength and flower freely. The flowers are reddish-purple. You should put it in peat-fibre and Sphagnum Moss, drain well, keep the plant well supplied with water, and it will do well with Odontoglossum Alexandro, and others.—M. B.

4495.—Horebills (E. H. Pollard).—The insect sent is not a wasp of any kind, nor does it sting. It is a species of wasp of the genus, and does not keep its feet on the abdomen. It may fairly be said to be a noxious insect, as it will attack horses, cattle, and human beings. Though these flies have no sting, the organs of their mouth are so formed that they can pierce the skin of animals and suck their blood. They are not often found in houses, but I was in church on Sunday morning at Thun, in Switzerland, when a number invaded the church. Many of the congregation left the church, and the remainder kept their heads covered in constant motion, trying to drive them away, during the rest of the service.—O. S. S.

4496.—Dendrobium Wardianum (Eight Year Subscriber).—If this is still growing keep it under the same conditions, and do not keep it too wet, or the eyes at the base of the stems are apt to push, and if they push in the winter, you know you must not expect strong or vigorous growth. Neither must you begin too soon to resort to a resting period for this plant. I have done this plant last year easing the water supply, until it is about entirely stopped. I have then taken them and suspended them in the full sun during the months of September and part of October to an early viney, afterwards putting them in a cool part of the Cattleya-house, where they may remain until the buds begin to show signs of coming, when the plants may be gently brought to fresh life.—M. B.

4497.—Woodwardia radicans.—J. Elliot seems to recommend a fern for a lawn, and the cool house fernery, and this plant makes a large specimen which is admirably adapted for such a place, for it makes broad and beautifully arched and pendent fronds, and nothing can be more beautiful. They sometimes attain to 6 feet in length, and are of a rich, bright-green colour, being viviparous near the apex. This, planted in a mixture of loam and good leaf-mould, made sandy and well drained, will succeed well and give you a specimen which you may be proud of. It requires a very liberal supply of water in the winter, but do not like to recommend much over-head from the syringe, because it has had its fronds turn black with it, and which I have attributed to water from the syringe.—J. J.

4498.—Ornanchae.—T. Kille asks me a question: "If he is to proceed to be enabled to cultivate any number of the Brom-rape family?" I have never seen these plants cultivated, still it is worth a trial, and to succeed with O. moor, which is mostly found growing on the roots of Clover, I would mix some seeds with that of Clover, and sow them together in the border. Any other species which may grow on the roots of any Leguminous shrub or plant may be sown upon the roots of these plants to the open border. I know of no other plan in which to proceed with these things. You must first get the plants of the Ornanchae like to grow upon, and get seeds of the Ornanchae and sow it upon the roots, and I should not imagine there is much difficulty in the matter. If it should succeed we may get have plants of the famous Rafinesque grown in our stores, which would, indeed, be a great achievement.—J. J.

4499.—Potting Odontoglossums (C. Darling).—You are like a great many more people, first do a thing and then ask advice upon the subject? You say your plants "were potted last month, but they do not seem to move a bit." Well, now, there are two reasons for potting at this time; one is, if the plants are in a bad state, and another reason is, in the event of having plants coming home in the season you came, and in the last-named case I would advise the plants to be placed upon some crocks, and kept very cool and moist, but in the case of the others, they should be potted in well-drained pots, and a little soil placed about them; but if you have deliberately been shifting them in the month of July, and because they do not appear to be progressing, I have little doubt that you can see them decreasing, and you should have asked advice first. I consider the very best time to repot these plants is in the late autumn time, so that the plants may grow and establish themselves in the winter, and then you can then maintain themselves in good order throughout the hot weather, but during the summer season they must not be touched.—M. B.

NAMES OF PLANTS AND FRUITS.

*. Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C.

Names of plants.—G. B.—1, Peris scaberula, wants plenty of water and shade; 2, Phlebodium aureum; 3, apparently a Blechnum, send again when fertile; 4, Onychanthus lendigeri; 5, Cyrtanthum falcatum; 6, Onyohium japonicum.—G. H.—We cannot name Ferns from such small pieces, especially when infertile; in sending again send a reasonable number at one time, not as now, twenty-four.—Thoe, Green.—The wild Teasel (Dipsacus sylvestris).—W. H. W.—The red net Fern (Nidula). It may be distinguished by its sharp knob rib at the back of the frond.—B. W. B.—1, Onoclea Forbesi; 2, Onoclea Linnæusum.—C. Fuller.—1, Scopolopodium vulgare, typical fern; 2, some crested variety, but it always like this it does not deserve a name; 3, Applenium

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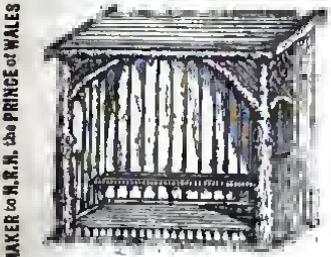
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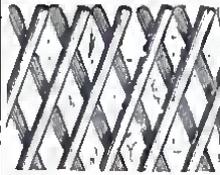
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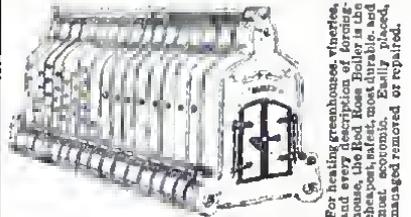


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septentrionale, vary strong; we have seen similar ones from about Dunkeld. — *Hycinth*. — *Fraxina ramosa*. — *Janina Wood*. — 1, Not recognised; 2, *Linaea purpurea*. — *Mrs. Roe*. — *Fraxinea calycina*. — *Mrs. Hearn*. — *Fuchsia Madama Cavendish*. — *East Anglia*. — *Sand in bloom*. — *W. Cann*. — *Bad specimens*: cannot name. — *J. Verman*. — 7, *Thujopsis dolabrata*; 8, *Cupressus Lawsoniana viridis*; 9, *Hibiscus syriacus*; 10, *Viburnum speciosum*, apparently. — *John*. — *Physiantha alba*. — *E. B.* — *Salvia Hornumum*.

Names of fruit. — *Spister*. — *Pear Marie Louise*, probably. — *H. M. Ward*. — *Plums*: *Dark fruit*, *Angelina Burdett*; *Yellow one*, a small *Magnum Bonum*. *Apples*: 1, *Hawthornden*; 2, *Five-crowned Pippin*; 3, *King of the Pippins*; other numbers detached. — *H. H.* — *Apples*: 1, *King of the Pippins*; 2, *Mère de Menage*. — *W. Davies*. — *Apples*: 1, Not recognised; 2, *Emperor Alexander*; 3, *Caillie Codrin*. — *Glo.* — *Apples*: 1, *Ribstone Pippin*; 2, *Lord Suffield*; 3, *Hawthornden*; 4, *Wellington*; 5, *Winter Queening*; 6, *Yellow Ingeate*. — *Alpha*. — *Pears*: *Louis Bonne de Jersey*; 2, *Autumn Bergamotte*; others not recognised. — *R. T. B.* — *Too poor a specimen*.

BIRDS.

4461. — **Goldfinch mule**. — *What is Capern's mixture?* The proper seed for a Goldfinch mule would be Canary, German Rape, Hemp, Tazale, and Niger in decreasing proportions, beginning with five parts Canary and ending with one of Niger. The disease is probably incurable, and will eventually kill the bird. — *A. G. BULLOCK*.

4452. — **Bullfinches losing new feathers**. — You are feeding quite wrongly. Hemp seed is a great deal too heating, and if you persist in feeding on this alone will soon kill your birds. Give Canary, German Rape, Oats, Sunflower seed, and a very little Hemp, plenty of Watercress, if you can get it fresh and good; if not, Groundsel is preferable. Do not neglect to give outleash-bone, and put ten drops of chemical food in the drinking water daily, well stirred, until the birds recover. There can be little doubt that the irritation of the skin is due to the intensely heating diet upon which the birds have been fed. — *A. G. BULLOCK*.

NEW PHOTOGRAPHIC COMPETITION FOR 1893.

Owing to the early date at which our prizes were announced to be sent in this year there was not time to properly take many kinds of outdoor fruits, flowers, and vegetables: therefore we offer further prizes for these things, to be competed for during the present year; allowing till the end of November for the work.

Class I.—FLOWERING PLANTS. — A prize of FIVE GUINEAS to the sender of the best collection of photographs of flowering plants grown in the open air or under glass. This series may include flowering trees and shrubs of all sorts.

Class II.—BEST GARDEN FRUITS. — A prize of FIVE GUINEAS for the best collection of photographs of any of our good garden fruits: Oranges, Peaches, Apples, Pears, Plums, or any other fruit grown in Britain. Fruits should not be crowded in dishes if good and clear photographs are sought.

Class III.—BEST VEGETABLES. — A prize of FIVE GUINEAS for the best collection of photographs of best garden vegetables. The object of this is to get fair representations of the finest garden vegetables under the old genuine names. We do not want to exclude real novelties when they are such. In all cases the name of the variety should be written on the back of the photograph.

Class IV.—AUTUMN FLOWERS AND LEAVES. — A prize of FIVE GUINEAS will be given for the best series of photographs of autumn flowers and leaves in the house in a cut set for vase, table, or other kind of indoor decoration.

WHAT TO AVOID. — *Out flowers or plants should not be arranged in vases with patterns on them. Backgrounds should be plain, so as not to come into competition with the beautiful flowers. Figures of men or women, barrows, watering-pots, rakes, hoes, rollers, and other implements, iron railings, wires, or iron supports of any kind, labels, and all like objects should be omitted. Dwarf flowers are ineffective when taken directly from above. The camera should be brought low down for such. All photographs should be mounted singly, and not several on a card. The photographs should not be less than 4 inches by 4 inches. The following are the rules to be observed by all competitors:—*

In any of the departments, if no collection of sufficient merit be sent in, no prize will be awarded. All competitors not winning a prize will for each photograph chosen receive the sum of half-a-guinea.

FIRST. — *The photographs may be of objects in the possession of either the sender or others; but the source whence they were obtained must be stated, and none sent the copyright of which is open to question. There is no limit as to number, and no fee to pay. The Editor is to have the right of engraving and publishing any of the chosen photographs. The photographs may be printed on any good paper that shows the subjects clearly; but those on albumenized paper are preferred for engraving.*

SECOND. — *The name and address of the sender, together with the name and description of the object shown, should be plainly written in ink on the back of each photograph. This is very important.*

THIRD. — *All communications relating to the competition must be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C., and the class for which the photographs are intended should be marked on the parcel, which must also be labelled "Photographic Competition." All competitors wishing their photographs returned, if not successful, must enclose postage stamps of sufficient value for that purpose.*

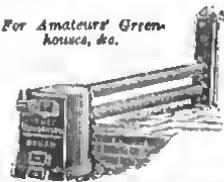
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GARDENING ILLUSTRATED.

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SEPTEMBER 9, 1894.

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ROSES.

POT-ROSES.

SEPTEMBER is a very important period in the management of these, and unless properly attended to now first-class results cannot be obtained. For the past six weeks or more all pot-Roses should have been out-of-doors. Those of my own that were placed out-of-doors at the end of June I bring under cover again in September. These plants have then attained to a certain degree of ripeness, and then broken into more young growth. My object in housing the most forward of this first batch is to make certain of securing a lot of clean blooms late in the autumn—a time when wet and stormy weather often makes them invaluable as cut-flowers. As a rule, however, I should not advise them to be housed quite so soon, unless in the case of those who, like myself, have to keep a supply of out-Roses all the year round. What I do strongly recommend at this time of year is to turn the plants round a few times, very slightly loosen the surface soil, and out away all weak and spindly growths that too frequently come in the form of blighted or flowerless laterals. By timely removal of these you will admit much more light and air among the sounder and more valuable wood. It is also so much easier to see whether the drainage is sound and to afford additional water to a few plants that may be over-dry during the operation of turning round and trimming out the plants. It does not take long to pass several plants through one's hands, and the amount of good done by an occasional run through in this way is far more important than many suppose. There are few more important months than September and October—sometimes so hot and fine, at others so boisterous and wet. In the case of dry weather it will be doubly necessary to give due

ATTENTION TO WATERING, because among the pot-plants set out early, and especially those of the Tea-scented class, young growth, with its consequent root-action, will have commenced. It is when such plants are allowed to get dry at the roots during the middle and end of October that so much of the young growth receives a check and comes blind and flowerless. Again, so very much depends upon the time of year at which you may want the bulk of your blooms to be in perfection. If not until March or April, it will be wise to place the plants into a deep pit or frame, so that heavy autumn rains may be kept from them. I do not advise they should have the lights placed over them excepting during very wet weather. By keeping the soil on the dry side without parching you retard the growth, and at the same time bring it to an even greater degree of ripeness. This month is also an excellent time to commence the culture of pot-Roses both among the Tea-scented and Hybrid Perpetual classes. In the case of the former, I would strongly recommend that young plants of this season's working be chosen. These can now be purchased in what are styled "trade" pots—those long or deeply-made pots which hold a

little less soil than the ordinary 6 inch sizes. Such Roses will be fairly well ripened before leaving the nursery, and if a little more care be taken in the way of securing a few weeks in the open air and a fairly dry soil, they may be safely forced the first season, and will generally produce a fair amount of bloom. As these small pot-Roses may be bought at about the same price as strong plants from the open ground later on, and will give a far better return the first season, they are undoubtedly the most serviceable for pot culture. There is no need for a large amount of wood upon such useful Teas as Rubens, Catherine Mermet, Mme. Faloot, Souvenir de S. A. Prince, The Bride, &c., the only desideratum being that all of it shall be efficiently ripened. Such plants will also grow on to be really grand and useful subjects by next year, and are likely to turn out more satisfactory than those potted up from the open ground, and which were probably not much more than half or three-parts ripened, and also minus of many of their fibrous and valuable roots, a case that cannot well happen to those always kept in pots. The

HYBRID PERPETUAL CLASS may be taken in hand during the present and following month. Many varieties that are on the Manetti-stock are already almost bare of foliage, and are quite ripe enough for potting up. I am on the point of commencing this work among my own Roses, and shall not hesitate to move any that have commenced to drop their lower leaves and are not breaking into the weak and late lateral growths these early-ripened plants are apt to do before or at winter is upon us come more. By lifting and potting these thus early one avoids the puny and useless growth, and the eyes that would otherwise produce these are checked in their precociousness and induced to ripen up into really useful wood. The potting of these has also been dwelt upon at considerable length, and I will only warn readers against standing such newly-lifted plants in a sunny or windy position. Choose a shady place, and take care that the plants are frequently and thoroughly syringed overhead during fine weather. This will prevent the wood from shrivelling and will retain all the sap in the plant. Early potted Roses, too, especially those on the Manetti-stock, will commence root-action and become more than half established before winter sets in. You can force such plants the first year, and although they will not stand such severe forcing as those established the previous season, nor as the small pot Teas before noted, they will be far more satisfactory than plants lifted later on, provided you secure their wood from shrivelling in the dry autumn air we are sometimes favoured with. Of course, the more quickly they can be potted after lifting the better it will be. In purchasing Roses for this purpose, be sure they are on the Manetti-stock, as plants on this will be much ripier than the same variety if growing upon the seedling or cutting Brier. R.

4435.—Culture of Roses for exhibition.—You say you have been successful at local shows and want to fly at higher game. You have 250 plants in almost as many varieties, and now propose to add six Teas and the

same number of H. Perpetuals, three of a sort. In query 4433, you ask the names of two dozen good varieties of H.P.'s? I would advise the cutting out of a few of your worst Roses and replacing with such of those named that you do not already possess. This, with the others you intend planting, ought to be sufficient to allow of your showing twelve fairly good blooms. But so much depends upon whether the majority of your plants are "in cut," as exhibitors style it, or not. You would do well to keep your stock below one of the numbers mentioned in the National Rose Society's schedules, as by doing this you meet men of your own calibre when competing at most good Rose shows. Of course, the more plants you possess of suitable varieties the better chance you have of finding a good bloom at the time when wanted. The twelve Teas you name would be greatly improved by replacing the following: Madame Lombard, Amazon, and Madame Charles, with Souvenir d'Elise Vardon, Innocent's Pique, and The Bride. Teas do not require quite such hard pruning as the H. Perpetuals, and will generally produce a few good growths if only out-hack in the partial manner you describe.—P. U.

4433.—Manures for Roses.—"A Rose in June" asks which are the best manures for Roses, and then goes on to describe half-a-dozen kinds which he uses. He could not possibly do better than continue the same, but I fear he is overdoing it in mulching so heavily twice a year. Lime is most beneficial when used occasionally upon ground that has become too rich in humus from over-maturing; I would not recommend it in any other case. Disbudding is certainly of great service in securing larger blooms, but you must do it immediately the side buds are large enough to handle. You ask for twenty-four best Roses (H.P.'s) for exhibition. The following are what I would select, although hardly two growers would give exactly the same sorts: A. K. Williams, Alfred Colomb, Camille Bernardin, Charles Lefebvre, Comtesse d'Orford, Earl of Duffryn, Francis Michellon, Gustave Piganteau, Horace Vernet, Louise Van Houtte, Gabrielle Luizet, Marie Beaumann, Maries Bernardin, Mrs. John Laing, Prince Arthur, Suzanne Marie Rodonnaohi, Victor Hugo, Ulrich Brunner, Prince G. de Rohan, La France, Viscountess Folkestone, Caroline Testout, Marie Verdier, and Duke of Edinburgh.—P. U.

4432.—Rose W. A. Richardson — if you let your plant of this grand variety grow at will, and cease to manure so highly, I have no doubt the defect you mention will be considerably, if not entirely, diminished. This Rose almost always bursts open in full sunshine; in this respect it is similar to most varieties that are scarcely more than semi-double, and the present hot summer has affected them very much.—P. U.

4410.—Roses for north border.—Almost all of the varieties named in a good catalogue, except those specified as being of moderate or tender growth, will do fairly well in the north, and also upon a north border in the south and middle of it, if, however, none

a dozen good varieties of distinct colour; but this list might easily be extended to a hundred. General Jacqueminot (red), Prince de Rohan (maroon), Charles Lefebvre (velvety-red), Dupuy Jamain (cherry-red), Baroness Rothschild (pink), Mrs. John Laing (soft lilac-rose), Souvenir de S. A. Prince (white), Marie Van Houtte (yellow), Safrano (apricot) Francisco Kruger (orange-buff), Jean Dacher (salmon), and Edith Gifford (cream).—P. U.

4423.—**Roses against a wall.**—I would advise you allowing the strong shoots of your Gloire de Dijon to grow as freely as possible until matured. Then in the spring you can lay in as much of the new wood as your wall can accommodate and remove the remainder. If you check the growths now the probability is they will break into useless laterals; whereas if left until spring each matured eye will produce a grand cluster of blooms.—P. U.

4416.—**Tea Roses.**—You ask for a few names of large-flowering Tea Roses, and mention three varieties as examples. Neither L'Idéal nor Grace Darling can come under the title of large Roses. Here are a few: Perle de Jardine, Sunset, Souvenir d'Elise Vardon, Innocenté Pirela, Belle Lyonnaise, Madame Hoste, Anna Ollivier, Maréchal Niel, Ernest Metz, and Devoniana.—P. U.

4424.—**Budding Roses.**—It is somewhat difficult to describe the proper stage of growth a Rosebud should be in. You may take it that when the wood is about three-parts ripened, and the bud is plump and prominent without actually being in new growth, that the bud is suitable for propagation. Another point which will guide you somewhat is to observe whether the seat or heel of the bud is left intact when the small portion of wood has been removed from beneath it. If the bud was too forward the seat will be left upon the piece of wood removed. It does not matter what stage the bud may be in so long as this root or seat is perfect and prominent enough to rest upon the wood of your stock. The latter part of your query, referring to covering the buds with soil or not, is easier answered. If you plant the stocks as shallow as possible, and then earth them up the same as Potatoes, when you remove the soil for budding the bark of the stock will be in a much better condition for working. Do not return the soil. Light must reach the bud to a certain extent, and a much more perfect union will be made under the partial shade afforded by the stocks. Next spring, when the young Rose commences growth, earthing-up is again very beneficial, but not before.—P. U.

4197.—**Planting Rose-beds.**—I have seen beds covered with different Sedums, &c., but do not recommend them myself. The best plan would be to lift the surface plants in the autumn, propagate from them, and keep in a frame until spring, when they may be replanted. In the meantime any mulching and turning over can be accomplished. The benefits derived from covering the surface with these subjects are: First, the better appearance during summer; second, freedom from dirt splashes during heavy rains; and, thirdly, a cooler and moister soil for surface-roots of Roses.—P. U.

4484.—**Red and White Lapagerias.**—Keep the stem away from the wire by either crossing the tie between them or wrapping a bit of cloth round the wire first. The wire is probably galvanised, which accounts for the injury. What kind of soil are the plants growing in? They thrive best in a mixture of peat, leaf-mould, sand, rough grit (such as bricks broken up rather small), and some lumps of heavy loam. They require more water than almost anything else, and should have a large can or pailful each daily such weather as this.—B. C. R.

4471.—**Wood-ashes.**—In country places wood-ashes are generally made at home by laying on one side all prunings of trees and shrubs, and another-burning the heap as often as is necessary to make clearance. Hedge and shrub prunings with all fibrous matters, such as Artichokes and Asparagus stems, are placed on the heap after the fire is started, and the whole smothered down when the fire attempts to break through with coarse weeds, &c. This will not be altogether pure wood-ashes, but the vegetable matter will not extract much from the soil.—E. H.

GARDEN WORK.

Conservatory.

Discontinue picking flower-buds from Zonal Pelargoniums, and take leave before there is any danger of frost. Begonias and other water-flowering stuff, which require heat to open the flowers, should be moved from cold pits to a house where heat can be given when necessary. Poinsettias and Euphorbias will be better with a little warmth at night. New Cinerarias, Primulas, and Cyclamens are quite safe in cold frames for the present. Do not keep the plants too close, or the foliage will draw up weak and flabby; the more air the plants have the better. To obtain very large plants thift some of the strongest Cinerarias into 7-inch pots. Late-sown plants will now be ready for thinning into 5-inch or 6-inch pots. Good specimens of *Abelia floribunda* are very effective now; this plant is very easily grown, and rapidly makes a good specimen. There are several hardy or nearly hardy plants which come in very useful to give variety in the conservatory now. Among these are *Campylopus pyramidalis*, blue and white; when well grown, these are very effective. *Campylopus leucophylla*, white and blue, are charming things for flowering baskets. *Trochilium coruleum* makes a nice specimen, and the flowers, which are blue, are produced freely. These are useful plants for the unheated greenhouse. Get the Dutch and other bolts for early forcing potted without delay. *Camellias* and *Arasias* must be taken indoors, but the house should be kept quite cool, and have ventilation night and day, so that the plants, after being housed, may be gradually inured to the change. When such plants are kept outside to the last moment, and are then taken to a house where artificial heat is used in even the smallest measure, the foliage will suffer from the change. The early-struck *Bouvardias* will now be fit to place in 5-inch pots; young stuff of last year out back will now be coming into flower, and when mixed with rather small plants of Maiden-hair Ferns the effect is charming in a good-sized group. Good plants of the new variety *Furly* and *Montana* are particularly attractive now. Still potted *Tuberose* which have been grown in the greenhouse will now form a nice oblate group in a groundwork of Ferns. *Tuberose* flowers are as valuable in the autumn as at other times, and they are not much trouble. Pot in April, and keep them moving on slowly, with just a little warmth to finish them.

Stove.

How beautiful the different forms of *Aparagus plumosus* are when planted out! This is the only way of getting long wreaths for cutting. They will thrive in any good soil which is well drained. Very old plants may be cut down and the roots divided to make stock. Seeds are sometimes produced, but as usual good seeds are scarce. Plants which are usually grown in this house must be brought back from cold houses. Some of the least valuable will have to be thrown out, as room for young specimens comes on. Still continue as opportunity offers to reduce climbers to make room for winter-flowering subjects. *Pestilosa procera*, *Ipomea florulentum*, and *Jasminum gracillimum* are all useful things for flowering in winter. *Allamanda* and *Dipladenia* are still effective. *Pergularia odoratissima* is a beautiful climber for a large stove; the flowers, which are borne in large clusters, have a powerful fragrance distinct from all other flowers. A little extra water will be thrown on the plants, and this will be given to moisten all the soil when watering becomes necessary. In the hot weather very little discrimination was required; now some judgment is necessary, as some plants will not require watering every day, or perhaps in dull weather not oftener than twice a week. Then, again, some things will shortly be going to rest. *Amaryllis*, *Gloxinia*, and *Achimenes* are approaching the end and yellow leaf, but to compensate we have *Ceseris* in variety, which if well done are charming things in a small moderate-sized stove. *Gardenias* will soon be making a move now. See that Mealy-bug is kept down.

Shrubs and Plants for forcing.

If three have to be purchased orders should be sent in at once. Among the most useful things are *Lilacs*, *Asias Mollis*, *Indian Arasias* (especially *Deutscher Baum*, which forces well), *Berula gracilis*, *Fatsia*, *peculiata*, *Rhododendron*, *Kalmia*, *Syringa*, *Spiraea japonica*, *Delytra spectabilis*, *Solomon's Seal*, *Lily of the Valley*, *Honeysuckles*, *Roses* in variety, *Weligia rosea*, *Laurentina*, and *Jasminum nudiflorum*, &c. It is very important that all trees and shrubs for forcing should have undergone a course of preparation. Things which have been established in pots for a short time feel less check, and the buds are, as a rule, better matured than plants lifted straight from the ground. Some things—*Rhododendron*, *Syringa*, and *Delytra*—do very well when lifted straight from the open ground and placed in pots; and I have forced *Lilacs* which have been taken straight from the border to the house, although the forcing in such cases would be gradual, not rushed along in a strong heat from the first.

Orchard-house.

As the fruit is gathered remove the trees to the open air. If any of the trees are to be kept in a shed they may be given at once into pots two sizes larger, the soil to be rammed in quite firm. Shelter the pots before frost comes with long litter, and let them be stood either on a thick bed of coal-ashes or on bricks or planks to keep out worms. Fruit-trees must not be allowed to get dust-dry at any time.

Melons and Cucumbers in frames.

Everything possible should be done now to keep up root warmth. Mounds of warm manure placed round the sides of the bed will be a great help; these mounds may be 2½ feet wide, and should reach nearly up to the top of the frame when pressed down firmly. The growth must then be kept thin, and the stopping of all young shoots on joint beyond the fruit is very important to stimulating fruiting. When Cucumbers are allowed to run on un-stopped they will run themselves out and cease to bear.

Window Gardening.

Do not water so freely now, and never leave water in vases or saucers. In the management of window plants

* In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated, with equally good results.

the main point of all others which is to incubate on all to to grasp in watering. Irregular sowing with the water-pot must kill. When a plant in a pot is kept too wet or too dry for only a few days mischief, which is in some cases irreparable, is done. It is true that in winter the chills danger lies in giving too much, but the other extreme must be avoided.

Outdoor Garden.

The preparation or fitting the soil for the crop is of the very highest importance, and when a failure occurs a full enquiry would generally disclose the fact that the ground had not been properly prepared or cultivated. The same remarks apply to the sowing Rows, Pines, and many other families of exceedingly interesting plants; and the preparation of the soil by tending planters should now be in progress. Rows will be dearer this year. Thousands of Standard Briars have died through the drought, and the growth made has generally been scanty and weak, except in the best soils. For all Roses, except *Teas*, clay or marl to the land, either naturally or conveyed there during the cultivating process, will be found of great assistance. A good deep light soil may be much improved by heavy dressing, say 3 inches deep of clay being placed on the surface, and left there for a time, and then lightly forked in. The stratum of stirred or cultivated soil can never be too deep. Usually this stratum of worked soil on the surface is too thin to obtain the best result. To keep a garden tidy at this season involves a good deal of labour. Grass and weeds grow very rapidly, and the less such work is kept well in hand, things will soon come to a dead lock. There are not too many flowering trees or shrubs at this season, and these, in consequence of the heat and drought, have come earlier than usual. The Venetian Sumach, the Buck's-eye-tree (*Pavia macrobotrycha*), *Menodora macrantha*, and the different varieties of the shrubby *Hibiscus* (*Althaea frutescens*), are so good that no garden is well furnished without one or more specimens. There are plenty of hardy flowers to brighten the garden in the autumn. The *Galliardias*, the *Rudbeckias*, the *Asters*, *Pyrethrum uliginosum*, *Helianthus scaberrimus*, and Japanese *Anemones* should be grown in masses.

Fruit Garden.

Vines in bad condition from ground to sour, undrained borders, may have the roots carefully taken out of the bad stuff, wrapped carefully up in mats, and have new borders well made to receive them as soon as the Grapes are all picked. Vines wherever possible, always be planted inside, and in cases where there are inside and outside borders, when the roots are lifted only one set of borders should be operated on at once, if any Grapes are required the next season. Thus, if the inside borders are re-made now, wait till roots have got a good hold of the soil before interfering with the outside. Sometimes, when the Vines are in a bad condition, it may be advisable to sacrifice a crop, and do the whole thing thoroughly at once, and when this is done, some of the old roots may be cut back more for young wood. The Patent *Silicicola* is excellent for mixing with the soil where old Vines are being renovated. Bones in any form are also valuable. When the roots of Vines are lifted whilst the foliage is still green the house should be shaded in bright weather, and the atmosphere inside kept damp to keep the leaves in a fresh condition. This has much influence upon the success of early autumn lifting. Pipes will soon require to be gone through, and the old rods may be cut out. Plunging beds will require ransacking. Suckers shifted on, and suckers still on old stools, should be taken off and, after trimming, potted in 6-inch pots, and plunged in bottom heat to make roots before winter comes. I have just been looking round a fruit garden, in which Bush Apples, on the *Paredais*, abound. Very fine are the fruit on these small trees, some three or four years planted. Such kinds as *Warner's King*, *Peasgood's Nonesuch*, *Ecklinville*, &c., are of lumene size, and the skin as fine as moderate-sized ones. *Gardenias* will soon be making a move now. See that Mealy-bug is kept down.

Vegetable Garden.

The only thing to do with Tomatoes outside is to get them ripe as soon as possible, and with that object in view every growing shoot should be stopped, and the foliage thinned sufficiently to allow a free circulation and exposure. The only thing that has been been well minded to do this has been a paying one, and has been at present there is no disease. Earth up the Celery which is forward enough. Late Celery should be allowed to grow for the present. Earthing up always checks growth. I generally act on a different principle with *Leeks*. Occasionally draw a little fine, well pulverised soil up round the stem of the plants, but it is best not to press up to the stems. Let it be in a loose ridge for the present. This has not been a good season for Peas, but the recent rains have given the late *Fras* a chance of filling their pods. The want of thoroughness in the culture of the soil has had quite as much to do with the *Fras* failures, when they have failed, as the heat and drought. I have seen good rows of *Fras*, in the hottest weather, on very poor land, but they were growing in well-manured trenches, and the hoes had been tread once a week to give a soak of water. Cabbages may still be planted for spring use. If there is a piece of south border to spare plant a few rows of cabbages to be cut in early. Cabbages, when young and tender, early in the season, are always appreciated. Cabbage must be grown quickly, and to insure rapid growth the soil must be of good heat—i.e., well manured and cultivated. Late planted French Beans on a south border may easily be sheltered by having an arrangement of sticks raised temporarily to carry a canvas covering on frosty nights. I have kept them well up to October by this means. If Beans must be had all winter there must be hot-houses at work. E. HORRAT.

Work in the Town Garden.

The exquisitely beautiful *Vallisneria*, or *Scebronia* *Lily*, is flowered this year rather earlier than usual. Nearly all my plants are now in bloom—the last week of August—and I saw them out elsewhere nearly a month ago. They are usually at their best in September, and at that time there is scarcely anything to equal them as decorative subjects for the greenhouse, conservatory, or inside window garden. Although the plants grow readily

enough with fair treatment in the smoky atmosphere of large towns, yet under such conditions they do not flower with nearly the same freedom as those receiving the advantage of pure air and free light of a country spot. Still, it is quite possible to induce strong examples to bloom fairly well in even the most unfavourable localities, the secret of doing so being to treat the plants early in the spring, encourage a free growth under glass during the summer months, and then ripen the buds and foliage thoroughly by exposing them to the full sun and free air in a sheltered spot out-of-doors during August, keeping them at the same time moderately short of water. At all other times the supply of moisture should be liberal, and even during the winter the soil ought seldom to become really dry, the plants being of an avaricious nature. Under this treatment this Lily seldom fails to bloom well; the best soil is a sound, sandy loam, mixed with a third of leaf-mould, and made firm. Drain the pots well and take care not to overpot them. The hybrid *Strapocarpus* is a wonderfully continuous flowering subject, and a nice batch is very useful in the conservatory now. Some of mine have been in flower since May, and are now pushing up the bloom-stems and buds more thickly than ever. They are surface-rooting plants, and seem to thrive best in shallow, wide-mouthed pots or pans, a third or half full of drainage, than in deep pots full of soil. The best should be of a very light, loamy, or preferably peaty character, with a little leaf-mould and plenty of sand incorporated. Shade from hot sun is indispensable. *Chrysanthemum* out-of-doors must be watered freely now, or the foliage will be scanty and the flowers small. Those growing against snowy walls—a situation which suits them admirably, and whence really fine flowers of even the large late kinds are often obtained—must be heavily syringed as well as abundantly supplied with water and liquid-manure, or they will fall a prey to red-spider and thrips, especially in such weather as this. Heavily lilies of all kinds should be planted, divided, or potted at once; *L. candidum*, *L. nigricum*,

of the very best quality must cultivate and nourish the roots of the trees, and to do this efficiently they must be kept near the surface. Planted a second hour of Cucumbers. The plants will not be allowed to bear till they are very strong. With winter Cucumbers the most difficult time is from the first of January till the end of February. This is the time when the plants which have been allowed to bear heavily usually show signs of distress, and not infrequently go off. The reason from dull, dark days to increased daylight is usually too much for them, hence the wisdom of taking only a light crop through the autumn from plants required to bear in March and April. Shifted on last sown batch of *Cucurbitas* and *Primulas*, and a lot of seedling Ferns, which were getting pot-bound in 3 1/2 inch pots have been scilted into 5 inch pots. These will make useful stuff for any purpose, or may be grown on to a larger size.

INDOOR PLANTS.

HYBRID GREENHOUSE RHODODENDRONS.

There are few more delightful flowering shrubs for the embellishment of the warm greenhouse throughout the winter than the various kinds of Hybrid Rhododendrons raised by intercrossing *R. jasminiflorum*, *R. javanicum*, and similar species. The mode of propagating best suited to these hybrid sorts is grafting on such of the seedling varieties as possess a free, vigorous constitution. The stocks require to be raised from shoot cuttings in the ordinary way,

tinged with pink, fragrant), Princess Royal (rose-colour), Prince of Wales (orange-red), Purity (pure white, very fragrant), Roxy Gem (white, pink, and rose), Taylori (pink), Thomsoni (scarlet), Veitchianum (yellow and white). B.

4482—A Saddle boiler.—Yes, the 1-inch pipe was placed where you find it for the purpose you mention; but I have never found these exhaust pipes necessary, and not many engineers see them for horticultural heating. With regard to the flow pipes, I am afraid that if you place them on a dead level for a distance of 100 feet the circulation will be sluggish. With a rise of 2 inches in the distance you mention you will be quite safe. There is no help for the inoline in the return pipes you mention in a Saddle boiler. The depth of the stove-hole depends on the height of the flow pipe as it enters the house. If it has not to enter under the door you can bring it up to any height you like. It is quite right to place the open tank or feed cistern at the extreme end of the pipes when there is not room for it over the boiler. In the latter case the cistern should be connected with the return pipe.—J. C. C.

—The 1-inch pipe in the crown of the boiler might have been intended for one of several objects. It may have been inserted as a separate flow to heat an extra frame or small pit, a propagating-bed, or something of the kind. At the same time, what is called a "stand-pipe" is sometimes inserted in the boiler, but more generally on the flow-pipe, to carry off any air or steam that may congregate, and prevent the apparatus "jumping" or "kicking." If there is a rise of a clear foot or more from the top of boiler into the flow-pipes, these may be on the level; but it is better to give them a slight upward gradient, if only 6 inches in the 10 feet, as on a dead level the air will sometimes "hege" and check the circulation. The return having a greater lucius than the flow is all right, and will not make any difference; it may be either gradual or the heating part may be kept parallel with the flow and the levels be adjusted in the connections.—B. C. R.

4450.—Treatment of a Stephanotis.—During growth the plant requires stove treatment, with a night temperature of not less than 60 degs. to 65 degs. In winter keep drier and cooler, to rest and ripen the growth. If the temperature drops to 50 degs., with the roots comparatively dry, no harm will be done. The Stephanotis should not be altogether dried off, and if it is to do well, keep it free from insects, especially mealy-hug.—E. H.

—Grew in turfy loam, not broken up too fine, or else a mixture of loam, peat, and leaf-soil. A warm greenhouse temperature will suit it very well, but it is best to give a temperature of at least 65 degs. to 75 degs. More will not hurt while growing. When growth seems at a standstill, let the temperature fall for a month or so, as this will conduce to much freer blooming. As soon as the eyes push out again return to the higher temperature.—P. U.

—To grow this charming climber really well it must have abundance of heat and moisture. A temperature of 60 degs. during the winter, with a rise of 10 degs. by night during the summer, and an advance of 10 degs. more during the day, will enable anyone to have abundance of blooms if the atmosphere of the house is kept moist and the roots freely supplied with tepid water, with an occasional dose of liquid-manure, say weakly. Stephanotis does not require a deep border, but it must have ample drainage, anything like stagnation about the roots being fatal to its health. A compost of half fibry peat and loam, with sand and charcoal added to make the whole porous, is what is required for the roots; stimulative matter can be added as a top-dressing. A mulching of horse-manure, to which is added a small quantity of bone-meal, about one part of the latter to ten of the former, will stimulate the plant when growth is most active in the early summer months. Stephanotis is much subject to attacks of mealy-hug; the best remedy for this insect is clean water applied with force through a syringe morning and evening. Mealy-hug can not withstand this daily interference. An open space at the back of the plant-stove, fernery, or conservatory, where it will not be obstructed from the light by other plants, should



Greenhouse Rhododendron "Lady Alice Fitzwilliam."

L. aurantiacum, *L. Martagon*, and several others thrive and flower freely in stove gardens, however smoky. B. C. R.

THE COMING WEEK'S WORK.

Extracts from a garden diary from September 9th to September 16th.

Seed sowing is pretty well over for the season, so far, at least, as regards open-air work. I have just made the last sowing of Lettuce, and the plants will remain in the seed-bed all the winter. If the plants come up thick some will be thinned out. This late sowing always comes in useful. As soon as the Tomato-houses are cleared out one or more will be planted with Lettuces. These houses have not yet been basted, and Lettuces are always a success, and they come in at a time when good Lettuces are scarce. It is impossible to get really good Lettuces early in spring without glass of some kind. Frames do very well, and so do cloches or hand-glasses, but a good roomy house, when it can be spared, produces very good Lettuces in March and April. Buy making up Mushroom-beds in house. Several beds are made up now and spawned as soon as ready. To some extent a successional character may be given by delaying the sowing for two or three weeks. The beds made up now in buildings, if put together properly, will continue bearing the greater part of the winter. The advantage of having a building large enough to hold from six to a dozen good-sized beds consists in the general warmth which is given off by the heaps of warm manure, and which, in a large building, can be kept up by making new beds at intervals of a month or so. Weeds have given us a good deal of trouble, but by bandweeding when the land was damp, and hoeing when the weather was fine, the land is getting pretty clear again. Just overhauled the early seed Potatoes; picked out those suitable for seeds and placed them, grown upwards, in shallow trays or boxes. Will be kept in a light place where the frost cannot reach them. Gathered Apples and Pears. The late fruits are being carefully sorted, and the best samples packed in barrels or boxes. They will be stored in a cool, dark room till the time approaches for using them. The wall-trees have just been looked over to do any shortening or thinning which may be necessary. Several young trees have had their roots lifted partially, and I think sufficient check has been given to bring them into bearing in due season. A great many Apples on the Broad-leaved Paradise tree have been picked within the last half dozen years, and numbers of the old pyramids of the Crab grabbed up. Whoever wants fruit

end grown on in 6-inch or 8-inch pots until large enough for grafting, when they must be headed down to within 5 inches or 6 inches of the pots, and the grafts, which should consist of pieces of the preceding year's shoots, inserted. The work ought to be done in the winter, and after grafting the plants should be placed in sufficient warmth to start them into growth; when some progress has been made the points of the shoots must be pinched out to induce the lower eyes to break, so as to furnish the plants with side branches. After this the treatment is simple, merely giving pot-room as required. These Rhododendrons do not want so much root space as many things, and a good compost for them is a mixture of good turfy peat, with some silver-sand, and the pots should be drained well. It will be well to keep the plants altogether under glass for two years, giving ordinary greenhouse treatment. After the grafts have got a good start in the warmth already advised this is requisite to get them on in size. Afterwards they will be better out-of-doors in the summer. Hybrid Rhododendrons are not much subject to the attacks of insects, but grown under glass they frequently get affected with scale or mealy-hug, for which syringes freely with water, and sponge with soap and water. The under-mentioned are very desirable sorts to grow; Countess of Heddington (blush-white), Countess of Sefton (white and rose), Dennisoni (white and lemon, very fragrant), Duchess of Edinburgh (bright orange-scarlet), Duchess of Sutherland (white, flowers fringed), Duchess of Teck (yellow, tinted with scarlet and rose), Lady Alice Fitzwilliam (figured), large flower, pure white, one of the best), Lady Skelmersdale (pure white), Maiden's Blush (blush-white), and Lady (white and pink), Princess Mary and (pure wax-white), Princess Alice (white,

grow this plant well; but it must have its leaves close up to the glass and receive some shade during the hottest part of the day. During June and July this is best applied from the outside.—S. P.

4476.—*Himentophyllum*.—As there is no heated house at present, it will be better to allow the effects to remain on the plant until the spring; but many growers would rather let



Flowers of Romneya Coulteri.

them remain so as to obtain a large flowering-plant. I have a specimen which has had no effects removed from it for fifteen years. The plants ought to be removed with some roots attached when they are of large size. Seeds may be removed when the pods are ripe. Let the pods remain on the plant for a month or more after they become of a scarlet colour, when they may be removed and the seeds extracted. Sow them at once in bottom-heat in a hot-house.—J. D. K.

4462.—*Creepers for a small greenhouse*.—A Rose, such as *Marschal Niel* or *Niphetos*, would do well. A Passion-flower (*Constance Elliot*) would be pretty and interesting. *Clematis indivisa lobata* is pretty in spring. Then, to come to commoner things, *Stem. Crouse Ivy-leaf* "Geranium," *Heterotrypa*, and *Fuchsia* in variety will all do good work in a small house.—E. H.

— I think the *Lapagerias* would give as much pleasure as any else. They are not too rampant, and may be well accommodated within a comparatively small space, whilst they continue to bloom over a long season. There are two kinds—*alba* and *rosea*. The former has pure white flowers, quite waxy in appearance, and produced in long, graceful shoots, whilst those of *rosea* are rose coloured. There is much difference, however, in the shade in varieties, some paler than others, and some larger in size. You must prepare a thoroughly well-drained bed for them, putting in plenty of cracks, and use a peaty soil. The plants are not so expensive now, the dealer of the two being *alba*. In a small greenhouse one does not want a creeper that overhangs every other plant.—G. T.

— There is nothing which gives more general satisfaction than *Pumbococcyenia*. It is a creeper of easy culture, and the flowers are the arably admired. If, however, you wish for a creeper which will bloom throughout the year, *Ilabrotan* is the elegant will suit you.—A. G. BUTLER.

4483.—*Heating a greenhouse by oil-lamps*.—One or two of the small oil-stoves, now so common and cheap, would excite frost from a structure of the size named, and just keep any ordinary greenhouse plants alive, and anything beyond this it is better not to attempt without the aid of hot-water pipes. Keep the stoves clean and well trimmed, use the best oil, light the stoves only when really necessary, and ventilate freely, and the plants will do fairly well, but you must not expect many to bloom.—B. C. R.

OUTDOOR PLANTS.

ROMNEYA COULTERI.

This is popularly known as the White Bush Poppy, and is a very beautiful plant, although scarcely so hardy as one could wish. The flowers are white, very delicate in appearance, and sweetly scented, whilst they are borne on the points of

the new shoots. There is no doubt as to the beauty and value of this fine plant, but its tender character should make one cautious where it is planted. In the mild, balmy climate of Southern England it will succeed in the open if the soil is light and warm, but in more northern districts the shelter of a wall must be provided. As yet it is uncommon, as it has not been introduced many years from California, and is one of those things that must be regarded as fit only for really good gardens. In town gardens or small country plots it should not be planted.

4411.—*Stoncrop for a rockery*.—You may plant a variety of *Stoncrops* in the positions indicated. There are many kinds, many of them quite common; but, in spite of this, they are seldom grown so freely in gardens as they deserve. The little rockeries (so-called) that too often disfigure small gardens may be made, in a sense, pretty by planting plenty of the common *Stoncrop* in the "pockets," so that the growth may spread over the facing of the stones and make a soft, verdant carpet. *Stoncrops*, however, vary greatly in height, some being quite dwarf, others tall, and a notable instance of the latter section is *S. spectabilis*. The best known of the *Stoncrops* is *S. acre*, the *Wall Popper* as it is also sometimes called. It is too well-known to describe. There is a variety of it named *aurum*, which has the growth tipped with yellow, and this looks pretty in the spring. *S. Ewersii* makes a splendid edging, and it is a very easy plant to grow, the leaves being of glaucous tint, and the rosy-purple flowers are produced in such profusion that they form a perfect floral carpet. It is quite dwarf and hardy. *S. Sieboldii* is another very useful species, and the variegated variety of it is pleasing, but, unfortunately, tender; hence it is not wise to plant much of it in the garden, although it looks very well in pots. The foliage is of a glaucous tone, and the plant succeeds in ordinary soil.—C. T.

4425.—*Begonias in the flower garden*.—As a rule, the double-flowered kinds are not nearly so useful as hedging or border plants as the single-flowered sorts. They do not exhibit their blossoms so well; so many of them are drooping in habit that the blooms hang downward so much, and therefore cannot be seen to the same advantage as the more erect and single-flowered sorts. Apart from this, double-flowered kinds do not produce blossoms of the same quality over so long a period as the

singles do—the quality of the individual flowers commences to narrow down after the first rush of blooming; therefore, "W. C." need not be so much surprised at the size of the blooms as compared to those first developed. The single-flowered sorts are far superior as bedding plants.—S. P.

4362.—*Herbaceous plants*.—A herbaceous plant is one that dies down to its base at some period during every twelve months. To reply to the remainder of your question would occupy a great deal of space, as the class is one of, if not the, most numerous we have, and even the most select list, with their seasons of flowering, &c., could scarcely come under the heading of short answers. Why not write to any of the firms advertising herbaceous plants in this journal? You would then get a full descriptive list, with prices, &c.—P. U.

4371.—*Christmas Roses*.—Christmas Roses may be grown in a London garden, either outside or in the conservatory; the latter would be preferable. Have strong plants in pots or tubs, and stand or plunge outside during summer. Put in good soil and give weak stimulants when the plants get straggling, if planted out work in last-mould or old manure well.—E. H.

4486.—*Nasturtium and Tropaeolum*.—The plants usually called *Nasturtium* are merely the annual forms of the genus *Tropaeolum*, many of which are perennials. Both are among the very best of town plants, and will grow and flower freely anywhere, as you have discovered. The climbing *Nasturtium* are the same as the "old tall kinds," but the dwarf annual varieties thrive almost equally well, and are far superior—at least, for bedding. There is also a race of perennial dwarf varieties, grown from cuttings, which are really grand for bedding or window-boxes, etc., in town gardens. *T. Fireball* (perennial, and grown from cuttings) is a fine climber, suitable for hanging baskets, etc., in summer, and blooms all the winter under glass. The *T. Lohmannii* varieties are also good. The tuberous kinds, such as *T. speciosum*, are too delicate for you. Try watering the *Scarlet Runners*, and syringing them overhead daily.—B. C. R.

4457.—*Gravel road and walks*.—The road and walks have been badly made, and not sufficiently drained. When the water passes freely away to the sides, and in addition the foundation is properly constructed with rubble, so as to lay the walk dry, green slime or Moss will not form unless there is a constant drip from overhanging trees. This slime may be kept down by a free use of weed-killers during summer, and unless the walks could be remade this would be the best course to adopt. Turning the walks over occasionally, hurrying the surface, would keep them in good condition.—E. H.

— Salt thrown over the walk will kill the green fungus you speak of, so will the different weed-killers. Care must be taken in its application, or Box-edging, &c., will also be destroyed. Most of the weed-killers are strong and dangerous poisons, and must be handled and applied carefully.—P. U.

4460.—*Management of Hollyhocks*.—Hollyhocks may be raised both from seeds and cuttings. Seeds should be sown—if treated as hardy plants—in well pulverized soil in drills in May or early in June, or they may be sown in boxes under glass, pricked off in 3½-inch pots, and kept in pots till strong, wintering them in a cold pit and planting out early in April. They may easily be raised from cuttings and of July or beginning of August, using the side shoots for cutting, making each joint into a cutting, and thrusting them into a prepared bed of sandy soil in a frame kept close. I have struck thousands in this way, and there is only a small percentage of failures if the cuttings are taken at the right time, which is usually before the shoots get stiff and hard. The cuttings are potted off when rooted and kept in a cold frame or pit all winter; or they may be planted out on a warm border and be sheltered with brauches in winter. Hollyhocks make very large foliage and grow rapidly in early summer, and must have liberal treatment both in the preparation of the site and also when the flower spikes are forming. The want of this has led in dry seasons to the attack of the fungus which so disfigures the plants.—E. H.

— These are easily grown plants, and make a gorgeous display in the flower garden. What the plants like best is a rich deep soil; they are gross feeders, and can take a large supply of farm-yard manure, trenched into the ground to the depth of at least 18 inches. The plants are

easily raised from seeds, or named varieties may be propagated as cuttings. I sowed seed in February of the present year, and the plants have all produced strong flower-spikes. They are now past their best. The seed was sown in a hothouse, and the plants grown on for a time there, until they were large enough to be placed in cold frames. There is no need to sow the seeds in a hothouse, but the object of doing so in this case was to obtain flowering plants the same season. Sow about the end of May, or in June out-of-doors, and the plants will flower well next season. It is not safe to leave the named varieties out in the open garden all the winter, as the change from wet to frost makes sad havoc of the plants. Cuttings taken in the summer may be wintered in frames, and the old plants when lifted in the autumn may either be planted out in frames or be potted up, and the growths which spring up from the base of the plants should be taken as cuttings in the spring.—J. D. E.

The principal requisites in the successful culture of this stately old favourite are few and simple—viz., deeply trenched soil, plenty of manure, and a liberal supply of water and liquid nourishment in dry weather, or, in a word, what is commonly termed "high culture." Seedlings make the best plants, though cuttings formed of small side-shoots, or those from the base of the plants, strike readily in sandy soil in a close frame during the latter part of the summer, and under cool and airy treatment make good plants. The seed should be sown in July or August, or as soon as ripe, in rich, sandy soil, and when large enough be potted singly, wintered in a cold frame or pit, and planted out in the spring—March or April. In light, warm, and well-drained soils the plants will frequently survive the winter in the open ground, and under the same conditions strong and forward young plants from either seed or cuttings may be planted where they are to flower in September or October; but on a heavy, damp, or cold formation the plants are never safe outside, and should be lifted and potted, or placed under shelter of some kind in the autumn. In dry, hot weather give a thorough soaking of weak liquid-manure once a week, and, if possible, mulch the plants with 3 inches of good, short, stable-manure or spent hops.—B. C. R.

These five plants need good culture. It is impossible to hope for fine spikes on poor ground, and the brilliant effects one sees in gardens at this season of the year are the result of a proper course of treatment. The soil must be deep and rich, and during dry weather in the summer months, such as we have experienced this year, it is important to give copious supplies of water. You may if you like give liquid-manure, but this is not really necessary, and the less one spills this kind of stuff about in the garden the better. One often smells more manure in gardens than flowers, and such things should be avoided. Prepare the soil well in the first place, get it thoroughly manured, and with help from the water-pot in dry times the Hollyhocks flourish, provided, of course, they are not molested by disease. The ground during the winter should not be damp, otherwise the crowns will have a hard fight. I remember well a noble row of Hollyhocks not far from the metropolis which was a source of pleasure for several years. The plants were in front of a row of Apple trees, and the splendid spikes of coloured flowers were thrown in bold relief. If you really wish the flowers to give pleasure in the garden—and I presume you do—there is no need to indulge in the fads of exhibitors, such as topping the spikes, thinning the blooms, and other points. Let the plants develop their own characteristic beauty. If you require information on propagating Hollyhocks, it has recently been referred to in GARDENING.—C. T.

467.—Fuchsias.—I do not know the "Durobin Bedder," but a few of the best Fuchsias for a smoky garden are Daniel Lambert, Rose of Castile, Mrs. Marshall, and Sedan. Such kinds as F. gracilis, F. globosa, F. Riccartonii, &c., beautiful as they are in a pure atmosphere, are useless in a smoky one, as the flowers all drop before expanding.—B. C. R.

Easy propagation of herbaceous perennials.—Autumn is by far the best time for the above operation, and both Phloxes, Delphiniums, and many others of somewhat similar character can be readily increased as follows: The two species I have named are almost, if not quite, out of bloom, and if they are cut down at once a few healthy young growths will push

from the bottom. These are to be taken off close to the crown as soon as they reach a length of 3 inches to 4 inches. Put them singly into 72's, using a compost of leaf-soil, loam, and sand in about equal proportions, and, stood in a frame for a few weeks, they will root freely. In the spring the same plan may be followed, but it would need a heated frame, and they would not flower nearly so well the same summer as those propagated now. Plant them out in the spring into their permanent quarters; the second year they will be in full beauty. It is only by cuttings and divisions of the stools that we can secure named kinds of many of the finest herbaceous perennials. Division is also best carried out early in the autumn, as the portions have a chance of making a few new roots while the ground is still warm, and are thus better able to go through the winter, besides being ready to start in the spring. Spring division checks them very much.—P. U.

HYBRID DAFFODILS.

DURING recent years much attention has been paid to the hybridisation of the Daffodils—that is, crossing certain types with others to get new and distinct kinds. Our illustration shows a Hybrid Daffodil which will in time, doubtless, become popular, but as the bulbs do not increase at a great rate this is purely a matter of patience. Some very fine hybrids have been raised, especially by the Rev. G. H. Engleheart, who, as an amateur, deserves high praise for his persistent endeavours to increase the list of Narcissus, not with poor things, but really beautiful flowers. It is interesting to know that many wilding forms, natural crosses, effected in a state of nature, he has produced under artificial conditions, so to speak, and if few of the many kinds he has raised are worthy perpetuation, still those few will probably take a high place. Such a kind is Golden Bell, which has a large trumpet-shaped flower of varying shades of yellow, and a more robust and striking kind we have never seen. It is even finer than Horsfield. Raising new Daffodils is not such a serious undertaking as might be supposed. The great thing is to sow seed from crosses each year, and then one gets flowering bulbs every spring, otherwise inexhaustible patience is



A new Hybrid Daffodil.

necessary. It takes from four to six years for a seedling bulb to bloom and show its characteristic features. Sow the seed in shallow pans, and when the bulbs are about one year old they may be planted out. One of the finest Hybrid Daffodils raised by Mr. Engleheart is Golden Bell, already mentioned, and Chrysoator is another beautiful kind, the flowers large, and soft primrose-yellow in colour, very pleasing and refined in aspect.

CHRYSANTHEMUMS.

DWARF PLANTS.

PLANTS having but a single stem, and that from 6 inches to 1 foot high, carrying one large bloom, and that 5 inches in diameter, are extremely useful, so well as being somewhat novel. Plants of this kind can be had in pots not more than 3½ inches in diameter. Where an extra inch is allowed the blooms are all the better, no doubt, but the plants may not be so useful, as in the smaller pots they can be used so much better for filling vases in the dwelling-house, apart from their use on the front of the stage in the greenhouse. Such plants as these are not nearly often enough seen, certainly not so often as their merits deserve. They are well worthy of what little attention they require in producing them. The last week in August is a good time to take the cuttings. If they are inserted sooner the plants are apt to get too tall, and if taken much later the flowers are necessarily smaller, owing to the bud which gives the single bloom being a terminal one. Where Chrysanthemums are grown for the production of large exhibition blooms some of the points are almost sure to be broken off by various causes about the time stated, as, for instance, heavy rains, high winds, and birds alighting on them, the shoots at this stage being very brittle. Such shoots should be formed into cuttings 4 inches long, and some may be 6 inches long. Those with the bud just formed are the most suitable, as the height the plant will be when in flower can be more accurately ganged than when the cuttings are inserted before the bud is formed; the shoots grow several inches more after being taken off prior to the formation of the bud. Dibble the cuttings firmly into sandy, dry soil, using pots 2½ inches in diameter. Do not remove any of the leaves, except that from the base, where out square across, the plants are all the better for having their foliage intact. Well water to settle the soil securely about the cuttings; plunge them in a gentle hot-bed, if available, as here they strike root so much quicker than in a cold frame. If, however, the bottom-heat cannot be had, plunge the pots in coal-ashes in a cold frame, keeping the frame close until roots are formed, with the exception of admitting air for an hour or so to dissipate condensed moisture off the leaves. Whether the cuttings are placed in a cold frame or a hot-bed they should be shaded from hot sun, as this will make the leaves flag and most likely make some of them drop off, which is detrimental to the appearance of the plants. Syringe the foliage every afternoon of fine days, and by keeping the frame nearly close roots will be formed in about a month, when more air should be afforded, increasing the supply until the plants will bear full exposure without flagging. The best position for them at this stage is on a shelf close to the glass in the greenhouse. If it is desirable to have large blooms, shift the plants into pots a size larger, using a rich compost. Of course, tops can be taken from the ordinary plants for this purpose, but of course it is at the sacrifice of large blooms on the plants grown for the express purpose. Varieties belonging to the Japanese section are the most suitable as the peduncles are so much stronger than upon the incurved sorts; plants of the latter section need support, while the Japanese section are mainly self-supporting. E. M.

4430.—**Passion-flower in fruit.**—Strong plants are fruiting freely this year, but there are only two varieties which are fit for eating. One is the Graudilla, which requires a stove temperature, and the other is the edible Passion-flower (*Passiflora edulis*); the last named may be grown in a warm greenhouse. I have sometimes tasted the fruit produced by other varieties, but have always found them bitter and disagreeable. The fruit of the edible Passion-flower makes an excellent preserve. (They are gathered before quite ripe, and preserved whole in sugar.—E. H.

ORCHIDS.

EPIDENDRUM FALCATUM.

FROM "W. W." comes a flower of this old species for a name. He says he cannot send a leaf because it is too large and weighty, but he sends a sketch, which he hopes will do as well. Equally so in this case, my friend, and I give above its most correct name, which was given it many years ago by Dr. Lindley. Curiously enough, although the plant is so distinct in appearance, it has had many names given to it, some of which I give here, in case "W. W." should be told another name for it, and he might think I had misnamed his specimen. It was called *E. odorifolium* by Bateman, and figured in his work on the "Orchids of Mexico and Guatemala," and also *E. Parkinsonianum* by Hooker, who figured it in the "Botanical Magazine" under that name. *E. laetiflorum* it is to be found under in some gardens, and others of less import. The plant is widely scattered throughout Mexico, in various situations and under various conditions, and varying somewhat in colour from pale-yellow to white and pale greenish-yellow, usually growing upon the stems of trees, though not infrequently it is found upon rocks. It is by no means a new plant, having been found, in the first place, upwards of sixty years ago; but it is not much seen in cultivation, though not being considered showy enough by the majority of Orchid-growers, and I do not suppose my friend "W. W." would have had it but for its accidentally popping up in a mixed lot of Mexican Orchids, which he purchased at a prominent sale. However, the flower sent me represents a very good variety of the plant, and I advise my friend to preserve it. I have found the plant to grow well with me in the *Odontoglossum*-house, at the warmest end. It thrives best on a bare block of wood, saving a little Sphagnum Moss, just to keep a little moisture to the plant; but in the winter season it will withstand a great amount of drought, but it is best not to permit it to become so dry as to allow the leaves to shrivel. The plant has a stout rhizome, which at intervals produce short stems, which bear a single lanceolate, thick, fleshy leaf, which is from 9 inches to a foot long, deep-green. The peduncles spring from the base of the leaf several together, each one bearing but a single bloom. The sepals and petals are similar (yellowish-green), the lip being of a more decided yellow colour.

MATT. BRAMBLE.

CATTLEYA BOWRINGIANA.

It is less than a single decade ago since the Messrs. Veitch, of Chelsea, introduced this plant into our gardens from Central America, for which we have much to be thankful for, and yet there has been much disappointment upon first flowering the species, as its beauties cannot be seen when it is poorly grown and flowered. But in the case of "G. T. H." who sends me a series of flowers, nine varieties in all, there can be no doubt of its great beauty, especially when he tells me he has none "with less than eight blooms on a stem." I do not think there was the slightest utility in "G. T. H." numbering these flowers separately, for the most of them differ from each other very slightly, and that chiefly in the shades of the sepals and petals, and slightly in the maroon band in the lip, so that there can be no use naming these varieties; but he may take it for certain that 3 and 7 are the poorest of the lot. I do not write this in any derogatory manner respecting this plant; indeed, I am much obliged to my friend for sending me such a fine sample, and all the kind things which he says respecting the teacher will be carefully noted. This plant with "G. T. H." appears to be like many others of the same family throughout the country, a month or two earlier than usual; but if it will become an established thing to become an earlier bloomer I cannot say; but one thing which may have had something to do with this is the starting into growth in this spring, it being very warm and sunny, would have accelerated them; therefore, I would advise "G. T. H." to keep his plants a little drier in the rest season, and so retard them from starting into growth quite so soon; but this must not be done by ever-drying but by reducing the temperature by a few more degrees for the rest season. I will sell the plants grow naturally in an atmosphere

highly charged with moisture, even in the dry season, whilst in the growing season the rainfall is excessive, so that my readers may take notice and always maintain a large amount of atmospheric moisture about this plant. Now this same remark I have had to make in a personal manner to several friends to whom I have paid a visit this season, and whose plants of this and several other species I have noticed to be getting infested with thrips and red-spider, a sure sign that the atmosphere is too dry and too hot, and *C. Boweringiana* is very liable to the attacks of both insects under these conditions; but if treated congenially it will be found to be both a free grower and a free bloomer. Moreover, it has usually flowered in the month of October. The flowers last well so that it may frequently be seen in bloom until the end of November. Like the majority of the *Cattleyas* it must be well drained and potted in good rough peat and chopped Sphagnum Moss, pressed down firmly, but it must not be overloaded with soil. Water carefully and somewhat sparingly, but always keep the air well charged with moisture.

MATT. BRAMBLE.

CYPRIPEDIUM PURPURATUM.

WHEN the Messrs. Loddiges published their Orchid catalogue nearly fifty years ago there were but five only of these coriaceous-leaved *Lady's Slipper*-plants in cultivation. What a difference exists at the present day, as may be seen by the holly but commodious catalogue of *Slipper*-plants published by Mr. R. H. Messtres, of the Woodlands, Streatham, and of others who are specialists with this genus. The plants stood in the following order: *Cypridium venustum*, introduced in 1818; *C. insignis*, 1823; *C. purpuratum*, in 1836; *C. barbatum*, 1840; and *C. barbatum onguistatum*, 1840. These were the only kinds which could be obtained in the year 1845. The flower of *C. purpuratum* sent to me by "John Vansittart," is, however, a very fine one, much better than a dried flower which I have of this species, which bloomed with me nearly forty years since, and when we were all in ignorance of its native home; but now it has been found to inhabit Hong Kong, where it has been ruthlessly extirpated, so that at the present time it has become quite scarce. But I have little doubt but that it occurs in the Chinese coast which lies opposite, and where I trust it will long be allowed to remain undisturbed, or at least that it will be gathered with care and discretion. I am under the impression that there yet remains a lucky find for someone in getting that great beauty *C. Fairieanum*, and I wonder that the cross-breeder has never resorted to the plan of obtaining it from seed in this country; but it will be a very lucky find for the first man that can put his hand upon it. My opinions upon this plant and its habitat I communicated to my old friend Boxall, the traveller for Messrs. Low, when I last saw him. If he is in the East now searching for it I cannot say, but he is a very likely man to find it. But to return to the species whose name stands at the head of this paper; it is a plant having nice tessellated foliage, much in the way of *C. barbatum*, and with a bright-coloured and very distinct flower; the dorsal sepal in that now before me being broad, almost round, having a slight white point, with numerous streaks of purple running through it, the lower sepal very smaller and more pointed, the petals standing at almost right angles. These are of a rich, purplish colour, tinged with green, veined with black, the lip is large for the flower, brownish-purple, veined with deeper purple, the infolded part being bright rich-purple. I would advise my friend to drain the pot or pan that it is put into in a thorough manner, using for soil a mixture of turfy light loam, good fibrous peat, and some chopped Sphagnum Moss, using a little sharp sand in potting; keep the plant moderately moist, and it will grow well in the temperature of the *Odontoglossum*-house at the warmest end, and during the winter season it should have a temperature of about 34 degs., and be kept fairly moist, with a moist atmosphere. Under these conditions it will thrive better and grow quicker than if kept hotter.

MATT. BRAMBLE.

will do admirably in any stove where the temperature is about 55 degs. in winter. Grow the plants in flower-pots, not on blocks. They should be planted in a compost of good fibrous peat, a little fibrous loam, and a third part of Sphagnum Moss. Mix potsherds and a little charcoal with the soil to keep it open. The compost should be raised above the rim of the pot in the form of a mound. The plants are making their growth now, and should not be disturbed until growth is completed. Give them a good supply of water until the bulbs are fully formed, when they do not require more than just to keep the bulbs from shrinking. The flowers will appear in the spring. After flowering repot them as advised above.—J. D. E.

FRAGRANCE IN GARNATIONS.

GARNATIONS are in danger of losing one of their greatest charms—namely, a delightful scent. It is important to urge that they should be scented, because for the majority of present-day kinds—I allude chiefly to garden euffs, whether English or French—are as scentless as *Baroness Rothschild Rose*. It is true that these fine kinds appeal to us strongly through other channels, by reason of such merits as vigour, freedom of flowering, fine form, rich colour, &c., and they find much favour; but the crowning charm of all which we seek, too often in vain, is that of scent. All who look for the natural charms of *Garnations* must surely deplore the want of scent in the modern varieties, and the sooner we remedy the evil the better. *Garnations* doubtless have not become all but scentless at one step. In the improvement of recent years the charm of scent has been ignored or forgotten. This proves how observant and watchful we should be, lest whilst doing good in one direction by developing and bringing out the finer qualities of a flower we disregard natural charms. It is not predicting too much that in another decade scentless *Garnations* will be the rule, and a scented kind a very rare exception. This must happen if we rely upon those who keep on raising new kinds from a scentless source. A little wholesome agitation did much good in bringing to the front the merits of self *Garnations*, and now that we are satisfied upon the point and convinced by results of trials, let us agitate for scented *Garnations*. We shall not be successful perhaps in inducing the orthodox florist to make the slightest deviation from his narrow way, but the love of *Garnations* is making headway. Many of its lovers have no aspirations beyond fully enjoying and appreciating the flower, and to these we must look.

B. W.

4373—*Lily of the Valley*.—Directly the leaves die down dig up the roots and free them from weeds, making a new plantation on a new site. It matters little what aspect is chosen, *Lily of the Valley* will succeed if properly managed. The same quantity of flowers cannot be expected from a newly-planted bed as one established for a year, but a crop will be obtainable even then, though possibly not quite so fine. When replanting it will be a good time to thin out the roots and increase the space of the beds, as there will be plenty of thinnings, picking out the smaller roots to be planted by themselves. Trench the soil 2 feet deep at once, planing in the top trench a good coating of manure, so that the roots will readily find it. Keep the surface-soil on the top, returning that from the bottom of the trench back again to the same place. In planting pull the roots to pieces; not more than a couple of crowns should be put in together for fear of overcrowding them again. The crowns need not be buried more than an inch under the surface. Cover the whole bed with half-decayed manure and leaves, 2 inches thick, allowing it to decay. Not only will this mulching preserve the roots from frost, but will prevent the evaporation of moisture during the summer. After the flowering season is past supply the roots liberally with liquid-manure to assist in the swelling of the crowns, and thus lay a basis for future flowering.—S. F.

4374—*Gas-lime and wireworms*.—A bushel per rod may be used on the land in autumn if the land is not ready to be cropped before spring, and the heavier the dressing which can be given without injury to the next crop the better the chance of getting rid of the wireworm, as they are not very difficult to clear out of newly broken-up land especially.—E. B.

3841.—*Growing Oecologyne* (Illustrated). This is one of the easiest Orchids to grow, and

TREES & SHRUBS.

CHERRIES AS ORNAMENTAL FLOWERING TREES.

THE planting season is fast approaching, and therefore I think it is appropriate to draw attention to the great beauty of the Cherries whilst in flower. At the time for planting them, and where a note has been made of their usefulness it will be advisable to secure the trees and plant them at once. In my own case I have observed that after the double varieties attain a fairly good age there is a tendency towards a canker, as in the fruiting Cherries. Rather than allow a tree to remain when it has in a manner become unsightly, it is much better to cut it down and plant afresh, but not altogether in the same place without an entire change of soil. When a tree is seen to be on the wane it is just as well to plant afresh; then by the time the young tree is established the old one can be removed without being greatly missed. The illustration depicts a young tree grown as a standard, which is by far the better plan. It will be noted on reference to the engraving that there is an undergrowth of foliage; this is as it should be, and exemplifies the advantage of the standards over dwarfier bushes. It is not, of course, necessary to keep to the double varieties, although whilst in flower they last longer in good condition. The single and fruiting kinds can also be planted for purposes of ornamentation as well, although methinks they are not so very often to be met with. For example, why should not the Morello Cherry be so cultivated? I have seen it thus grown in a most successful manner, forming beautiful heads. First there is the handsome display of bloom, then there is the fruiting season. We do sometimes see the Weeping Ash on lawns, why not the Morello Cherry as well, and grown in the same way? In all probability the fruits would escape the birds more than when planted in the kitchen garden in those gardens of medium size, because the tree would stand by itself. The reason why standard fruit-trees of all kinds are not more extensively planted in our shrubberies is not that they are not beautiful, surely? I think it is rather that because it has been so, so it must still be. A well-clothed, but not necessarily a pruned, tree of the Morello Cherry would upon a lawn be a beautiful object. It is easy enough to grow it thus. The soil need not be in any case of a rich character; I would rather have it otherwise. The following are useful double varieties to plant in shrubberies—viz, *Cerasus Avium* multiplex (the double form of the wild Cherry), *C. domestica flore-plena* is a strong-growing variety, but probably not so much as the foregoing, *C. serrulata* (the double white Chinese Cherry) is, I think, one of the most useful of all; it flowers freely, and is not so strong a grower. Of the single note should be made of *C. Juliana* (St. Julian's Cherry) and its rose-coloured variety; also of *C. Padua* (the Bird Cherry) and its pendulous variety. Besides these there are the single varieties of the doubles first quoted, and last, but not least, the Morello aforementioned, which should be chosen with clean, well-grown stems. H.

4155.—**Climbers**—Yours is a very vague question. You do not even say whether you want your climber for the outdoor or indoor garden? For the open few things would give you more variety than Clematises, and by choosing those which flower at different seasons you would get greater satisfaction; thus, for spring bloomers you might have Lady Londborough (silver-grey), Lord Londborough (deep-maroon with magenta bar), and Stella (light-violet with reddish bar). For summer

and autumn: *C. Jackmani* (intense violet), *Jackmani alba* (white), *magifica* (reddish-purple), and *Mrs. James Bateman* (pale lavender). For indoors few things are prettier than the two common varieties of *Plumbeago capensis*, the French blue and the white; add to these some of the numerous varieties of *Fuchsia*, and you need wish for nothing better.—A. G. BUTLER.

—The following will be found a good assortment of hardy climbers, from which may be selected plants suitable for all aspects, as well as for covering arches, porches, training espaliers, &c.: *Ampelopsis hederacea*, *A. Veitchi* (one of the best creepers for covering north walls), *Cotoneaster Simonai* (this also does well in north aspects), *Cydonia japonica*, *Escalonia macrotheca*, *Euonymus radicans variegatus* (a very useful, neat climber, will cling like ivy), *Honeyauklee*, *Red Dutch*, *Scarlet Trumpet*,

Clematises, a large number of kinds, in which the flowers represent a great diversity of colouring, varying also in shape. I do not care for the very big-flowered kinds, which are ungainly and, unfortunately, somewhat tender in constitution. *C. montana*, which has white flowers, is very beautiful, is another fine kind, one of the best of all climbers, free in both growth and bloom. The number of Clematises is great, *C. viticella*, and many others, but the two kinds to grow first are *C. Jackmani* and *C. montana*. These you could have the handsome-leaved *Dutchman's Pipe*, a climber which gives a variety and is not too common in gardens. *Ivy* in variety, although these are not for beauty of flower; but there is great charm in their leaf-colours, from glossy green to fine alvery markings. *Jasmine*, which blooms when few other things are in flower, is a great gain. Its leafless shoots with rich-yellow flowers, which make a bright show in the winter and early spring months. It will live in almost any position, and I have seen it very beautiful in quite inhospitable gardens. The *Crimson Jasmine*, which has white flowers, is very sweetly scented, and to be valued for that reason. Then the *Honeyauklee* may be thought of, the *Passion-flower* in warm, fairly sheltered spots, and the hardy *Violes*, which are graceful, and the leaf-colouring is striking.—C. T.

4470.—**Araucarias**—I should say that your tree has been struck by lightning, which has caused it to go off so suddenly. There does not appear to be any other explanation. Such instances of injury are not uncommon. The harm done is generally seen within a few days after. You had better remove the tree, as it is past recovery.—J. C. C.

—The tree which has lost its lower branches has got into the cold clay upon mention. A cool, gravelly bottom suits this Pine, but it must not be clayey. I have had under my notice the finest avenue of this grand Chilean Pine in the country, the majority of them being from 50 feet to 60 feet high. They will grow anywhere up to the height you name, but as soon as the roots reach a wet and cold soil the lower branches suffer. Your other trees will be sure to go like it in a short time.—P. U.

4474.—**Propagating a Magnolia**.—Magnolias can be best propagated by layers. If you can bring one of the young branches down on the ground make up a bed of sandy soil to receive it, and when bent down get a strong wood peg and secure it firmly in the ground, burying the bent part of the branch 3 inches under the surface, placing a stick and tie to the point of the shoot to bring it slightly erect. It will take two years before the layer is ready for transplanting. I think your youngest tree requires some rotten manure stirred in about its roots.—J. C. C.

—By far the best way to propagate this shrub is to graft upon seedling stocks. They are also easily increased from layers, using a peaty compost. It is best to layer a shoot into a box of prepared soil, as they are very impatient of disturbance when rooting has commenced.—P. U.

—Layering is a more certain method than cuttings, and the layering may be done now.—E. H.

4476.—**Laurels and Rhododendrons**—If laurels and Rhododendrons require cutting hard back the work should be done in spring early in March. Simply cutting out young shoots for the sake of symmetry may be done any time. Taxodias should be pruned in autumn after flowering. This will let the much needed light into the dense winter foliage.—R. H.

—The spring is the best time to cut these plants, and it should be done as soon as they start into growth. The Taxodias also should be cut in the early spring. Outings of any kind under hard frosts should not be exposed until they are formed.—J. D. E.

—This is not a good time to cut Laurels or Rhododendrons, especially the latter, or the bloom buds for next year's crop would be scorched. There would be no harm in removing a shoot or two from the Laurels for the sake of appearance, but a general close pruning is



OUR READERS' ILLUSTRATIONS: Cherry-tree in bloom. Engraved for GARDENING ILLUSTRATED from a photograph sent by Mr. S. V. Harcourt, Malwood.

Aureo-rebonlata, *Ceanothus dentata*, *C. Veitchi* (should be planted against a south wall), *Corymb elliptica*, *Wistaria sinensis*, *W. s. alba*, *Ivy* in variety, *Clematis* in variety, including *Jackmani*, *Snow-white Jackmani*, *montana* (winter-flowering), and *Flammula* (autumn-flowering), *Jasminum officinale major*, *J. nudiflorum* (winter-flowering), *Lycium barbatum* (Duke of Argyll's Tree), *Pasiflora cerulea*, *P. Constantia* (should have a good aspect), *Pyracantha* (Fire Thorn), *Roses* in variety, to include *Gloire de Dijon*, *William Allen Richardson*, *Cheshunt Hybrid*, *Maréchal Niel*, &c. The situation should be well exposed, and the soil changed if necessary.—E. H.

—There are a great number of climbing plants, some very beautiful and showy, others of little interest. Possibly one of the best of all climbing plants is *Clematis Jackmani*, which has rich purple-violet flowers. Indeed, it is a familiar object in many gardens, both large and small. But there are many other kinds of

altogether wrong at this time of the year. I advise that pruning be done early in the month of February, for the reason that the plants are not so long bare in the stems if cut severely as they would be if cutting was done in the autumn, or even at Christmas time. Many persons do all their shrub pruning at that time, so that the clippings may be utilised for decorations at that season. Rhododendrons are best pruned directly the flowering season is past; the plants are then just commencing to make their season's growth.—S. P.

4158.—Striking *Ceanothus*.—Cuttings of the young shoots, when getting a little firm, will root in sandy soil under a band light. The same shoots, when ripe, will also root, but not so quickly. If there are shoots near the ground they might be layered now.—E. H.

— You may propagate these at any time now. Choose wood that is ripe, but has still got a few leaves upon it. A cold frame and sandy soil is all that is necessary. Do not make the cuttings too long. If you can layer a few shoots from the bottom you will obtain a strong plant much sooner than from cuttings.—P. U.

TRANSPLANTING EVERGREENS.

THERE appears to be much difference of opinion as to the proper time for transplanting Evergreens, but there can, I think, be no question as to early autumn and spring being the best seasons, and the month of September and that of April should be seized on, and the work pushed on then with as much expedition as possible. In the removal of Evergreens the great thing is to be particular and careful in the lifting; but, unfortunately, few workmen seem alive to the importance of this, as they dig up close, as if roots were of no consequence whatever, and cut or maim all they come near; but instead of that happening, every one should be preserved free from injury, and then the plant they are attached to stands a good chance of soon starting again and re-establishing itself. This being so, it will be seen how necessary it is to open out a trench all round well away from the stem, the distance, of course, being ruled by the size and age of the shrub to be operated on, and then by the aid of a steel fork work away the soil and keep clearing it out till the ball is so reduced as to be small enough to move with the strength or appliance at hand or disposal. The first preliminary, however, where there is much transplanting to be done, and it is better to proceed where there is only a little, is to

DIG THE HOLES where the plants are to go, and in doing this plenty of room should be given, as the bigger the hole the easier will it be to plant and spread out the roots properly and for them to ramify after and get fresh hold of the soil. In placing the plants in position the chief point is to see that they are not too high above the ground or too deep, and to keep them at the original level, as to bury the stem up is bad, and equally as to have the collar too elevated, unless on heavy or wet land where the soil can be raised and made up to it, as then the ball would be too much exposed to the weather. Not only do Evergreens need lifting with great care, but the filling in is almost as important, and this should be done piecemeal as it were—that is, a certain portion of fine soil thrown over the roots and then water cast on with force, so as to carry the soil along with it and stop every cavity or interstice there may be around or under, and to aid in this the top of the shrub should be swayed to and fro, after which the holes may be finally filled. The next thing to be done is to mulch with any loose litter, long strawy manure, or any material of that kind that will shade and prevent evaporation, as uniformity of moisture must be maintained to get freshly moved Evergreens to do really well. Steadying the heads should also be attended to, and this may easily be done by a stout stake driven down near the main stem of each plant and tying to it, and if the shrubs are afterwards syringed each evening overhead, or sprinkled with water by other means, so as to prevent flagging, they will scarcely feel the shift, and be quite prepared to pass safely through a hard winter or face the bright days of summer. W.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruits and vegetables for drawing. The drawings so made will be engraving in the best manner, and will appear in due column in GARDENING ILLUSTRATED.

FERNS.

CHOICE FERNS.

MOHRIA THURIFRAGA.

In reply to "Brixtonian," "V. R.," and others, I may say that, notwithstanding that nearly half a century has elapsed since this plant was introduced to this country, it still remains one of the rarest, as well as one of the most beautiful, of evergreen cool-house Ferns. It has, to an ordinary observer, the appearance of a Cheilanthes, whilst others have likened it to the North American deciduous *Woodсия obtusa*. The plant



Frond of Mohria thurifraga.

appears to have been first introduced to the Botanic Garden of Berlin, a garden singularly rich in the species and varieties of plants; from there it was sent to our own Botanic Gardens at Kew, and a few years ago could have been found in many collections throughout the country, but it is now to be reckoned with the rarest of our cultivated Ferns. Our illustration affords a good idea of the beauty of a small frond of this plant, which is the only species known. When the plants are well grown the fronds attain a length of 2 feet, although they more frequently grow only about 12 inches, and when fertile the sori are very conspicuous, being thickly clustered upon the points of all the lobes. The fronds, which when bruised are very fragrant, hence its name, are erect, twice divided, and very equal in width throughout, the sterile ones being wider than the fertile; the pinnae are deeply lobed, bright-green, and smooth on the upper side, but beneath they are furnished with woolly ferruginous hairs; the stem also is densely clothed with longer hairs of the same colour. In the kind called *schiffelfolis* the fronds are more prostrate, and the lacinations of the pinnae are more delicate. That it is a variety only of the species has been proved by the fact that both forms have been obtained from spores saved from one plant. The plant is a native of the Cape and Natal, and various of the African Islands, in which, probably there still lurk some more undiscovered species. It should not be overpotted, and for soil use a mixture of peat and light loam and about an equal part of nodules of sandstone. It enjoys a fair amount of water to the roots, but should not be watered overhead, and it thrives best in the temperature of a warm, dry greenhouse. This plant grew well and attained its maximum size under the above conditions in the Messrs. Rollison's establishment

at Tooting, the above illustration having been taken from one of the young plants grown there. J. J.

4464.—Fern seeds.—The dry air of a room is not the best in which to raise Ferns from seed, but a great deal may be overcome by patience and careful management. The successful way in which many ladies manage Ferns in rooms often surprises me, and it shows that even the raising of them from seed is not an impossibility. I hope you have only the seed of fairly hardy sorts, as you are not likely to succeed with tender ones. The great point in the management at present is to keep the pan away from a strong light, and not to disturb the young seedlings by washing out of their bed. The soil in the pan must be kept moist, this is best done by holding it three parts its depth in a pail of water for a minute or two, and then lower it sufficiently that the water flows gently over the surface. Four months should be allowed for the seedlings to appear.—J. C. C.

— In a month or six weeks from sowing the "hair" ought to begin to appear, but the time varies considerably, according to the temperature, season, freshness or otherwise of the spores, and other conditions. If the "seed" you mention was sown and good, and was sown upon a roughish surface of loam or leaf-mould in a well-drained box or pan, it ought to germinate—that is, if the soil is kept in an even but moderate state of moisture, and carefully shaded from sun. You must prick the seedlings off—at first in little clumps—as soon as the first tiny fronds can be seen, and still keep them moist and covered with glass.—B. C. R.

4480.—Plants for winter.—There are a good number of people who would like to know what plants to put in after the summer flowers that will flower through the winter, because they have found that those they have tried very often fail owing to the severity of the weather, and if these who wish to try start with the understanding that everything depends on the weather they are not so likely to be disappointed in the end. If people who are so fond of flowers would make all their small flower-beds into one large one, and fill it with hardy flowers chiefly, they would then have some space to devote to subjects that bloom in the winter and early spring as well as summer. In mild weather the Christmas Rose flower from December to February; then follows the Winter Aconite, Snowdrops, Hepaticas, and Primroses. Next to these comes the Siberian Squills (*Scilla*), Glory of the Snow (*Chionodoxa Lucillia*), Tritelia uniflora, and Single Yellow and Dark Wallflowers. *Erica carnea* blossoms very early in the spring, as also does those low-growing, sweet-smelling deciduous shrubs *Daphne Mezereum*, and *D. alba*. Amongst herbaceous and rock plants that bloom very early in the spring I may mention the Leopard's Bane (*Doronicum*), *D. austriacum*, and *D. plantagineum exelsum*. You, of course, know that the ordinary Crocuses will make a garden very gay in the month of March. Then there are the early Single Tulips that follow directly after, and to succeed these there are the Hyacinths and late-blooming Double and Single Tulips. So you will see there is a possibility of your having a bright garden early in the year and onward.—J. C. C.

4472.—Scale insects.—Do not use paraffin-oil; it is dangerous, especially to Peach trees. Make a strong solution of Gishurst Compound, 4 oz. to the gallon, and go over the trees twice, as soon as the leaves, or, at least, before the beds get permanent, and see that every part of the trunk and branches are well dressed with the solution. Give another look round before the blossom-buds open in spring, and touch up with a small brush all the suspicious spots. If properly done this will be effectual without injuring the trees.—E. H.

4478.—*Agapanthus umbellatus albus*.—I am pleased you have been successful with this beautiful plant, which should be grown more, whereas one gets always the blue species, and it naturally becomes rather tiresome. I never heard of the White *Agapanthus* being forced, and there are many better and more profitable things I should think for the purpose. Be content and enjoy its fine flowers produced naturally.—C. T.

HOUSE & WINDOW GARDENING.

AUTUMN WINDOW-BOXES.

As the summer (which has truly been a glorious one) wanes the flowers in our window-boxes, sorely tried by the great heat, look more dilapidated than usual, and must be removed at once. But there is yet time to display a few more fresh blossoms, and these will do best in pots sunk over the rim in Cocoa-nut-fibre, or, better still, Moss, carefully looked over before using it for insects, &c. Plants potted up from the garden may be utilised for the windows in autumn. Nice little specimens of early-flowering Chrysanthemums, pots of Asters which are late in blooming, Carnations too (which, if put out late, often bring blossoms in September) can be lifted carefully from the ground and potted for the window. In this way Carnations and other summer flowers, such as Margerites, can be lifted and displayed in a window-box until the frosts begin, when it is easy to take them into the room, where they will continue to produce their blossoms for some weeks. Directly the frost arrives in earnest, the boxes should be cleared of flowering plants and arranged for the winter and early spring. Perhaps the prettiest winter window-boxes are those which contain neat little plants (in pots) of the Berried Aucuba, alternating with specimens of the beautiful Barberry (*Berberis aquifolium*), which is covered in winter with rich-purple berries and bright-reddish foliage, bringing, too, its pretty sprays of yellow blossoms in the early spring. Various small Firs and Yew-trees are sold, too, for this purpose, but some of them have a funeral look which is not attractive, others are so stiff in form that they are far from elegant, unless grown with hanging greenery, such as Ivy or the beautiful hardy Fern, *Scolopendrum vulgare* (Hart's-tongue). This makes a lovely trailer for a winter window-box, and can so easily be grown in pots in the area during the summer, when the damp, cool air will suit it well. Pots of Ivy or Hart's-tongue, sunk in Moss, alternating with pots of bright Red Tulips or Hyacinths in early spring are very charming, and the bulbs can be easily brought on in a window if potted in good time. Those who do not care to have a succession of pot-plants for their window-boxes can plant them in October with hardy bulbs, such as Tulips, Hyacinths, Snowdrops, Crocus, or Daffodils, mulching these with Cocoa-nut-fibre or Moss, when they will have a bright display in spring. Another plan is to plant the boxes in autumn with seedlings of Forget-me-not (*Myosotis dissitiflora*) and deep Brown Wallflower, alternated, if the boxes are large, with neat little plants of *Enonymus variegata*. The effect of the bronze and turquoise mass of bloom in early spring is very good, and the scent of the Wallflower, when the windows are opened, is delicious. Good stout little plants which have been raised from seed early in the summer should be collected, and they will be better for a mulch of fibre or Moss, as recommended for the bulbs.

I. L. R.

4418.—**Mountain Ash berries.**—These are perhaps the most difficult of all berries to preserve for winter decoration, as they have an inveterate habit of dropping off their stems, which is very disappointing. The best way to keep them is to pick the bunches just before they are ripe, dip them into clear, rather thick gum-water, dry them thoroughly, and then pack them away in a tin box with an air-tight cover, using layers of cotton-wool to place between them. Many berries (such as those of the dusky Iris, which, in the South of England, are very plentiful in the hedges) may be preserved in this way. Some people cover the ends of the stems with sealing-wax also, but the great thing is to exclude the outer air thoroughly, and also to pick the berries at the right time—i.e. when they are fully expanded, but not ready to drop. Berries of all sorts are very fine this year, the lovely three-cornered carmine spindles berries, those of the Eglantine or Wild Rose, the dusky Iris, and even those of the Hawthorn being useful for church decoration at Christmas when preserved in this way. Beautiful was the too of the brilliant berries of the Black Bryony can be obtained in autumn, in the hedge. Wild Bryony being less common, but also supplying bright-red berries for this purpose. "M. O. T."

might also try various other berries, such as may be found on the shrubs in most well-stocked gardens—Cotoneaster, Aucuba, and Berberis, for instance, which are highly decorative, and of which many varieties are now cultivated. But the intense carmine of the Mountain Ash is certainly our finest colour in berries, and it is well worth a little trouble to keep them for winter decoration. They are said to keep for some time in a strong solution of salt and water, covered with this entirely, and only needing rinsing in fresh water before using. The writer not having personal experience of this plan, can only suggest it as worth trying.—J. L. R.

"M. O. T." may preserve the berries by placing bunches in a deep earthenware pot, pouring over them strong brine and water, with a thick layer of mutton fat on the top to exclude air. They will only require rinsing in fresh water and slowly drying to be fit for use.—EAST ANGLIA.

WINTER-FLOWERING BEGONIAS FOR A ROOM.

These beautiful plants which have been extraordinarily improved of late years by hybridisation with the tuberous summer-flowering varieties, now bring plenty of splendid blooms during the winter months, and are the most useful for room decoration when other flowers are scarce. Their flowers, too, are lovely for cutting, and last a long time in water, so that we can scarcely have too many of them in winter, and every lover of flowers should add a few good specimens of winter-flowering Begonias to his collection. One of the handsomest varieties is Winter Gem, with brilliant red flowers about 2 inches in diameter, which last for six weeks without dropping. John Heal, too, is very good, bearing eight or nine brilliant pink blossoms in elegant racemes, well shown above the handsome foliage. Adonia, too, is somewhat similar, with blooms of a carmine tint. Begonia Carrieri, a most floriferous variety with pure-white flowers, is charming for cutting, and also

too much pot-bound to flower almost all the year round, good drainage and an abundant supply of water when in full growth being essential to their well doing. Young plants raised from cuttings in the spring can now be procured and potted on, pinching back the mere vigorous shoots where they grow out of shape. If wanted for immediate effect, large plants should be bought, as the first year they are too small (when raised from cuttings) to be very effective. A temperature of about 60 degs. is necessary for them when in blossom. R.

PINK HYDRANGEA CULTURE FOR MARKET.

In reply to "B. S.," "H. T.," and others, the method of culture generally adopted is as follows: A few large old plants will be found to furnish a tall times in the growing season an abundant supply of cuttings. These are removed with a sharp knife during the months of May and June, and are inserted four or five in a 5-inch pot in some sandy soil. If kept well shaded and moist they soon strike root, when they are immediately potted off singly in good, heavy, rich loam, mixed with a little decayed manure. They are placed in a pit where they can have an abundance of air, and when established the sashes are entirely removed. The young growths are not stopped, the object in view being to produce sturdy plants, with well-ripened terminals. Ende About the end of the month of July they will be ready to be placed in their flowering pots, 5-inch or 6-inch ones being quite large enough. In potting, the soil in the pots is made very firm indeed, and then they are arranged in convenient sized beds out-of-doors, exposed to all the sun and air possible, and also with liquid-manure; good guano makes as good a one as any that can be used. The plants will not grow more than a few inches in height, for as soon as the pots become filled with roots growth ceases in that direction, and the



A well-flowered Pink Hydrangea in a vase.

makes a beautiful table-plant, the blossoms being borne in sprays all over the plant which is of a regular, bushy shape when well grown. PRINCESS BEATRICE is a very good White Begonia too, and Waltonensis brings a quantity of bright-pink blossoms, while Knowsleyana is an excellent winter-flowering variety, bearing a quantity of flowers of the palest pink. These Begonias are not difficult to cultivate. They only need potting on before they become

energies of the plants afterwards seem devoted to the perfecting of the embryo flower-buds. By the end of the month of September the foliage will show signs of approaching ripeness, and when that happens a slight diminution in the supply of water will be advisable; but this must not be carried too far, as, by so doing, the plants would be weakened. As winter approaches they require to be removed to some place where they will be protected from frost, for although

URBANA-CHAMPAIGN

quite hardy, yet, when treated as pot plants, it is by no means wise to allow them to become frozen. The structure in which they are wintered should, however, be light, dry, and well ventilated, and no more artificial heat should be used than is absolutely necessary to secure them from severe weather. In private places Hydrangeas are often stewed away in winter under stages, and in other dark, out-of-the-way places. This is the worst possible practice, and plants so treated only produce good results by accident, as it were. The Hydrangea requires every possible ray of light during all stages of its growth, and even when dormant. About the first week in January is a good time to introduce a few plants into a comfortably warm house, provided it contains a bed of warm leaves or tan near the glass. This is the place on which to set the pots. Give a thorough soaking of warm water to the roots and they will speedily commence growth. When this has gone on for a few weeks, the bloom-buds will be visible on the tips of the shoots, and all suckers and other growth which does not contain any bloom should be removed in order that the energies of the plant may be concentrated in the production of large and finely-coloured heads of blossom. In a general sense, single heads or two shoots on a plant are the best; but in some cases, three or four shoots, as in the manner of the one illustrated (p. 387), may be suffered to remain. The plants should have every encouragement possible in the shape of a moist and genial atmosphere, and abundant supplies of liquid manure should be given. When ventilating, avoid all outgoing draughts of cold air, and at times of excessive sun-heat a little shade will be beneficial. Successional plants will, of course, be introduced as required, and in all respects receive similar treatment. A stake to each shoot will be necessary to prevent the breakage of the heavy heads of blossom. The Hydrangea can be grown to almost any size, but it is never more effective than when grown in small pots. As is now well known, the natural pink colour of the flowers may be changed to blue by an occasional watering with a weak solution of alum-water, or by potting in soil that contains an abundance of iron. H. B.

THE KITCHEN GARDEN.

4477.—**Making Asparagus beds.**—It is quite right to remove the soil and potstone to a depth of 2 feet, but do not waste that from the surface; it will do well for mixing with the other ingredients. I should not add salt with the soil, neither should I place manure deeper than 9 inches. If so, it will be lost entirely before the roots can reach it. At the bottom place any kind of vegetable refuse, partly decayed, retaining the better materials nearer the surface. The month of February would be a good time to make the bed. Planting is best done during the early part of April, while the weather is warm. The plants generally commence to grow at once. Not more than 3 inches of soil should be laid over the roots, finishing off with a layer of partly decayed manure and leaves, 2 inches thick. This acts as a mulching, retaining the moisture during the summer, and keeping the roots cool, inducing them to run freely in the new soil. Many persons make a mistake in not allowing sufficient space for the free development of the tops by planting the roots too thickly. The rows should be at least 18 inches apart, with not less than 15 inches of space from root to root in the rows. Three rows in one bed is ample. The outside row ought not to be nearer than 9 inches from the path. At no time should the path or alleys be disturbed. It is a senseless practice that many persons adopt of covering the beds with the soil dug from the paths. Not only does this plan allow the frost to injure the roots, but they must be severed in the digging, which produces a check to the plants which is best avoided. All that is needed when the tops turn brown in October is to cut them off close to the soil, clean off any weeds, and lay on a coating of partly-decayed manure, 2 inches thick, allowing it to remain all the winter, and early in April—or before, if the spring is a forward one—rake off the loose parts of the manure into the path, give the bed a soaking over; nothing more is then required. It would not be wise to cut Asparagus the first year after planting, even for three-year-old roots—I should

prefer to plant two-year-old roots—neither should cutting continue later than the end of June.—S. P.

RIDGE CUCUMBERS AND THEIR CULTURE.

The first week in May is quite soon enough to sow the seed of these, even when the plants can be raised in a greenhouse or frame, which is the only satisfactory way of getting the full benefit of one's labour, unless there are hand-lights to put over the seed as soon as it is sown. In that case the seed may be sown at the time I have stated; but, supposing there are no hand-lights available, I like to raise the plants in a cool greenhouse or frame, and plant them out the first week in June. Two plants of each in a 5-inch pot are enough. If there are more they will be weak, because overcrowded. It is also a mistake to prepare heaps of manure for them, unless there is enough to make into a hotbed and a frame is available to put on it. Good Ridge Cucumbers can be grown on level ground when the season is favourable, providing it is well manured and dug up a good spit deep a few weeks before planting time. It is a good plan to give the plants a little protection when they are first set



Cucumber "Greek or Athenian."

out—a large pot turned over them for a few hours during the day when the sun is very bright, and also at night, until the plants have grown too large for the pot to cover them. In exposed gardens the wind often does serious harm to the plants when they are quite young, therefore each one should be securely tied to a short stick as soon as planted out. Grown in this way, it is not often that the plants require any watering, unless the season should be very hot and dry. It is when they are perched on mounds that they require attention in the matter of watering. The Green Grecian or Athenian Ridge (here figured) is a capital hardy and free-bearing sort. The Gherkin is one largely grown by market men to supply pickle-makers. Stookwood Ridge is also another good and reliable kind. J.

4412.—**Woodlice v. Mushrooms.**—Persevere in trapping woodlice by laying small garden pots on their sides half-filled with Moss, and with a piece of Potato or Turnip at the bottom; or pieces of stale bread, bricks, &c., may be laid about; the woodlice are very fond creeping under such things. Pouring boiling water down by the sides of the walls where the creatures congregate is very useful, and also use a few loads.—G. S. S.

4414.—**Onion fly.**—The best means of protecting the Onions from the Onion-fly is to sow them in rows, not too thickly, so that they may require as little thinning as possible, and as soon as practicable earth up the hulks, so that the flies cannot lay their eggs on them. Soil saturated with paraffin-oil sprinkled among the plants, and afterwards well watered, has been found very useful after the plants were

attacked. When a plant is badly attacked it should be carefully removed with all the grubs and hurst, and the hole made by its removal filled with lime. After a bad attack give the ground a good dressing of gas-lime and fallow it.—G. S. S.

4468.—**Neglected Asparagus-beds.**—The beds must be in a bad state if it is necessary to take up the plants in order to clean the ground. The beds ought to be cleaned without disturbing the roots very much. If the roots must be lifted the spring is the best time to do it. When the beds are well prepared before planting, rich top-dressing, lightly forked, should suffice.—E. H.

Without the beds are badly infested with Couch Grass, Wild Convolvulus, or such-like deep rooting weeds, it is not necessary to disturb the roots in cleaning the beds. Pull out such weeds as Groundsel at once to prevent their seeding, and as soon as the tops of the Asparagus turn yellow they should be cut down close to the ground, the surface of the bed heeled and raked, repeating this as soon as more weeds appear. Spread over the surface of the beds a 2-inch covering of partly decayed stable-manure, leaving it there until the end of March or early in April, according to the season—early or late. Reke the roughest parts off the beds into the path on each side. Give the bed a dressing with common salt, enough to make it look white. This will act as a stimulant and a check to the growth of weeds also. Many persons dig the alleys between the beds, loyng the soil from the paths over the manure on the beds. This is altogether a wrong practice. Not only are the roots injured in the path, but an opportunity is given the frost to penetrate the sides of the bed. If the first shoots that appear next spring are of the size of the small finger, cutting a little will not harm the roots, but the general strength of the plants must be considered. If the growth is weak it would be unwise to cut from it for a year at least.—S. P.

It is not necessary to lift the plants in order to clean the beds; in fact, it would be injurious to the Asparagus so to do. It will soon be time to cut down the stems of the Asparagus-plants, and, when that is done, hoe up all the weeds and remove them with 2 inches or 3 inches of the surface-soil. When this has been done, give the beds a good dressing over the surface with decayed manure, and cover over the manure with an inch or two of fresh soil. This is generally taken from between the beds; but, if it is not available there, it may be obtained elsewhere. If the beds are worn out through bad management it would be far better to plant new beds with one-year-old plants in the spring; but the old beds, if treated as above, will bear a crop in the meantime.—J. D. E.

4163.—**Seed from Tomatoes.**—Let the fruit become dead-ripe on the plants, and when ready to drop rather than, scrape out the pulp and seeds into a tin sieve or strainer, and wash out the former under a water-tap. Spread the seeds on blotting-paper to dry, and store in paper packets in a dry place. There is no advantage in choosing very large fruits for seed, and small formed ones of moderate size are the best.—R. G. R.

For seed purposes save the finest fruits from the most prolific plants. Keep the fruit till dead-ripe, then rub out the seeds with a cloth.—E. H.

The White Wistaria—Amongst the shrubs that should be made note of for autumn planting is this Wistaria, which is not, however, new. But if not new it is very beautiful, and it is a pity that one does not meet with it more often, either planted by itself or as a contrast to the common type. Its racemes of flowers are produced freely, and are larger than those of the common Wistaria, whilst they are truly white, not a weak, watery kind of blue, as in many flowers called by the same name. When seen clambering over an arbour, out-house, or some such spot it is very charming. The only unfortunate feature about it is that it is a little tender. The double kind floriferous is a poor thing; the flowers double it is true, but of poor colour, and the racemes are not only short but very sparsely borne. Then there is the American Kidney Bean-tree (*W. frutescens*), another very interesting kind, but it is to the white variety alba that attention is especially directed.—O. T.

4477.—**Clematis attacked by mildew.**—The mildew has been caused by the check given by the drought. The Wistaria has had nothing to do with it. Dust with sulphur till the mildew disappears and give stimulents to the roots.—E. H.

FRUIT.

PROFITABLE FRUIT.

THIS year we have one of the most abundant crops of fruit on record, and doubtless the daily papers will teem with paragraphs as to the utter uselessness of the English cultivator trying to make a living by such a precarious venture, for they will point you to well-authenticated accounts of growers who have actually lost money by sending their fruit to market, as the rail charges and commission came to more than the articles realised. We are getting our full share of this sort of thing, and yet fruit culture goes ahead, for we may rest assured that a good deal of the imported fruit has of late returned nothing at all for the cultivators, and until we get better means of utilising the glut of fruit by drying, or preserving in some form or other, such things will continue to occur. The moral I wish to press home is this: Grew your fruit better in quality by timely thinning and high culture. Plums are a drug on our markets—Green Gages at 6d. per gallon, and common Plums, no bid at all for; yet on the same day fruiterers have come to me and asked for good large dessert Plums, and given 6d. per dozen to sell again, and other fruits are the same! Apples, ordinary samples, one can hardly get an offer of any sort for, but very fine samples realize 4s. to 5s. per bushel to sell again. Briefly, it is not quantity but quality that is needed, and only young trees, well cultivated, can give the kind of crop that will repay the necessary care. Hazard fruit growing don't and won't pay.

J. OROON, Gosport.

4417.—Caterpillars on bush fruits.—To prevent an attack next year you cannot do better than remove the soil from under the bushes to a depth of 3 inches in the course of the winter, and replace it with fresh soil. The Gooseberry sawfly grub buries itself in the ground and becomes a chrysalis, from which in the spring sawflies will emerge and fly into the bushes and lay their eggs. The earth containing the chrysalides should be hurled or buried at least 6 inches below the surface. If everybody in a certain district would adopt this plan this insect would be almost exterminated; but if your neighbours do not take this precaution, the sawflies may fly from their gardens into yours. —O. S. S.

4485.—A Vine trouble.—Overcropping is the chief cause of your trouble. It is the old story, and one which it appears will be probably heard for all time, because people will not heed practical advice or profit by their own experience. Here is a case in which Vines twenty years old are expected to mature perfectly 60 bunches of Grapes, and because they refuse to do so the cultivator gets into trouble. At the same time, he admits that last year, with only 125 bunches there were a few shankers, and this year with two-thirds more the Vines have collapsed altogether. What else could anyone expect to happen? I can only hope for the benefit of our craft the lesson will not be lost. With regard to other matters referred to in the management, you appear to have acted wisely, except that you make no reference to having given the roots any water, which in this case, with the border raised considerably above the surrounding level and the long drought we have passed through, was absolutely necessary. Want of root moisture would aggravate the evil of overcropping. On the other hand, if they have had all the water they want the sudden collapse of the Vines only serves to further emphasise the error you have committed. The only thing you can do now is to relieve the Vines of the bunches as fast as you can, and if you have not given the border any water do so at once with no sparing hand.—J. C. C.

The cause of the bunches being so affected is owing to the Vines being too heavily cropped. It is a case of shanking, the breakdown occurring just at the colouring stage, which is usual in cases of shanking. Heavily-cropped Vines do not exhibit signs of failure until the colouring stage arrives; it is just during that extra strain that the trouble makes its appearance. It is a bad plan also to plant young Vines in an old border; the roots do not take kindly to the old soil. It is always the best way to make a new border when fresh Vines are planted, or if

It is not convenient to make a border entirely new, substantial holes should be taken out and new soil put in. In the present case, however, it seems it would have been wise to have removed all the soil, replacing it with new, not only for the benefit of the new Vines, but for the old ones as well. All that can be done at present is to cut off all worthless bunches, keep the shoots thin, so that the main leaves have sufficient room for development. Do not allow the lateral shoots to grow so thick as to crowd the main leaves, and make sure that the border is sufficiently moist that the roots do not suffer in consequence. If there is any trace of red-spider upon the leaves syringe them every evening with clean water applied with force. If the foliage is infested with thrips fumigate the house with Tobacco on three consecutive nights.—S. P.

4469.—Plantation of Raspberries.—Cut away all the old canes that have fruited at once, and reduce the young ones to not more than five per root. Clear the ground of all weeds, etc., and just prick in some well-decayed manure. Next year lay a good mulch of manure over the roots before the hot weather sets in, and fork it over in the autumn. Any canes that exceed 6 feet in height may be cut down to that point in the autumn or early spring.—B. C. R.

— Cut away all the old canes which have fruited this year at once, and thin out all the young canes which are weak, and then leaving four of the strongest canes to each stool. Dress heavily with good manure and fork it in, but as Raspberries are surface-rooting plants do not fork quite close up to the stools. After Christmas shorten back the canes left for fruiting to 4 feet or less, if the canes are grown without support. I have had as good crops on 3 feet canes as when left longer, but the canes were always well thinned out, so that the foliage was strong and healthy down to the bottom.—E. H.

— There will be no good crop next season unless the plants have made fair-sized canes this year. It is usual to remove all the canes from a plant but five or six, and these are cut down a little in the autumn or winter, when the plants get a good dressing of manure dug in between the rows. The surplus canes may be removed now, but it is better to do this in the summer to allow the fuller development of the remainder. In case of the plants being old and worn out, it may be desirable to make a new plantation. Trench and manure the ground well. Plant in November, 4 feet between the plants. They can be obtained from the sides of the old stools.—J. D. E.

— At the present time all that can be done is to remove all the canes that gave fruit this season, and all but sufficient of those of the current year's growth to cover the trellis on which they are trained in rows. The canes may stand 10 inches apart, and 8 inches if they are tied to stakes. By removing all the useless growth now instead of allowing it to remain to be cut out during the winter, those left will have so much better a chance to become well ripened before autumn, and in a much better condition to give fruit. If the soil within 2 feet of the Raspberries is exposed to the sun after the canes are thinned out and surplus ones removed, it is a good plan to apply a mulching of half-decayed manure to prevent the evaporation of moisture from the soil.—S. P.

4461.—Pollarding Apple-trees.—The effect of pollarding Apple-trees would be to canoe a great deal of young wood to start from the cut portions of the trees. If the shoots are too numerous remove some of them; these young growths will in three years bear good fruit again. If they have also cankered, the roots must be seen to; probably the land needs to be drained, and the roots may also have run down into an unsuitable sub-soil. In that case dig a trench 2 feet deep or more round the trees, and work underneath the roots, cutting through those that run downwards. The old soil should be taken away, and be replaced with good loam.—J. D. E.

— The best remedy with the old trees is to dig them up and burn them, planting young ones of approved kinds in their places. By good management it is possible to get full crops of fruit annually from young trees after the first year's growth. The varieties are so numerous now that it is a waste of time to allow old trees, and perhaps of worthless kinds, to encum-

ber the ground. Pollarding old trees is a waste of time; the roots have not sufficient vigour in them to push out the strong shoots necessary to do much good from cutting off the tops. The roots should be renovated with fresh soil and manure; this entails labour, and without, perhaps, much after-benefit.—S. P.

4384.—Strawberry border.—The preparation of a new Strawberry-had may be summed up in two words—viz., digging and manuring. Work the ground deeply and well, going to the depth of two, or, if possible, three, spad-lengths, but do not bury the fine surface-soil—keep it still uppermost, though if the topsoil is very light and the subsoil stiff or clayey, a small proportion of the latter may be advantageously brought up to the surface and mixed with the other. Add plenty of half-decayed stable or farmyard-manure, the coarser portions below and the finer near the surface. If the soil is light and sandy, on a gravel subsoil, a good layer of farmyard "muck" put in at a depth of 18 inches or so from the surface will do much good. On the other hand, should the soil be naturally stiff or clayey, a good heap of it should be burnt beforehand with wood or small coal, and the product be worked in the ground, the coarser siftings below and the finer above. If the ground is naturally wat a drain should be put in about 3 feet deep, but this need only be done if really necessary, as Strawberries like a moist situation. The best months to plant in are—If runners that have been kept over from the previous autumn in either store-beds or small pots can be had—April, May, and the early part of June. Otherwise you must wait until July, and then make use of runners of the current season. It is not too late yet to plant and obtain fruit next summer, especially if extra strong runners, or plants that were layered into small pots can be employed, but only a light crop can be expected now—the earlier the plants are got in the greater the yield of fruit the following season. Plant quite firmly, keep the crowns of the plants high, and water as required until established. The only subsequent treatment necessary is to keep all runners (except such as may be required for increase of stock) regularly out or pinched off, to keep the ground clear of weeds, and to apply a mulch of rather long stable-manure annually in March or the early part of April. This will help to keep the fruit clean, and should be lightly forked in towards the autumn, after the fruit is all off. Never disturb the surface of the bed at any other time, and as little as possible then.—B. C. R.

4482.—Hedge of Gooseberries.—I think you will be able to obtain what you require from Messrs. J. Chel and Sons, Lowfield Nurseries, Crawley. They make a specially of cordon fruit-trees, and have the best stock of all kinds in this form I have seen.—B. C. R.

4456.—Best Strawberries.—Three of the best-flavoured Strawberries are undoubtedly British Queen, Dr. Hogg, and Keen's Seedling. Black Prince has also a very rich and distinct flavour, and it is early and very productive, but the fruit is small. The first named requires special soil and high and skilful culture, but Dr. Hogg and Keen's Seedling, the latter especially, will grow freely and crop heavily with ordinary treatment, and on almost any kind of soil.—B. C. R.

— Vicomtesse Herlesart de Thury is the best early Strawberry for flavour; it is a heavy cropper, but rather small as compared to such as Nehle, for instance, but its quality is superb, and it will succeed almost anywhere. Keen's Seedling is a really good flavoured sort, but not so hardy or so accommodating as the former as to soil and situation. Sir Joseph Paxton is a prodigious cropper, hard constitution, and fairly good in flavour if eaten when thoroughly ripe. President is also a good variety. British Queen is also regarded as the finest flavoured sort in existence, but unfortunately it is rather fickle in its likes and dislikes as to soil. Dr. Hogg is supposed to be a good substitute for the former, and having a much better constitution it certainly is well worthy a place where British Queen does not succeed. Eleanor is a good late sort, but the latest of all is Waterloo, a free bearer and of good quality; the colour is, perhaps, somewhat objectionable, being a dull red, however, it is a desirable sort to grow owing to its lateness.—S. P.

AUTUMN TREATMENT OF RASPBERRIES.

RASPBERRIES, after the fruits are gathered, are often allowed to take their chance, but such treatment is not conducive to the formation of strong growths for next year's supply of fruit. No time after fruiting should be lost in giving the canes more room to develop by removing the old fruiting canes and useless suckers. There are often serious complaints as to Raspberries failing, the canes dwindling, the fruits being poor and only half the size they should be. This occurs in both heavy and light land. One reason is allowing the plants to occupy the same ground too long. On clay land the roots go down in search of food, only to find the sub-soil worse than the surface, and then decay of the fruiting canes occurs, no matter how carefully pruned and fed. On light soil much the same happens. There is no feeding material in the soil, and in this case heavy surface mulching must be given twice a year to keep the canes in a healthy state. Of course, all the mulching in the world does not get the plants into good condition once they have gone wrong. It is useless to feed Raspberries and to allow the old fruiting canes to remain on the plants for months after the fruit is gathered with a forest of suckers at the base. These suckers rob all the next season's fruiting canes of the nourishment which should go to build up a strong, hard, well-ripened cane the size of a walking-stick for next season's supply of fruit. At this date the old fruiting canes should be cut away, and only sufficient suckers left for the next season, choosing those that are strongest and in a healthy state. I only allow three or four to each stool. On weaker varieties five should be the maximum number, and those not too wide or far away from the original cane, as once they get wide of the old stool the plantation should be broken up and re-made on new land. Of course, if suckers are required with a view to getting canes for planting, more may be allowed. I have seen Raspberries occupy the same ground for twenty years, but this should not be, as it is impossible to get the best fruit or equal weight from canes in an impoverished condition. Removing the old ones need not occupy a long time, and those left should be tied to the old supports or wire fencing. The canes left for next season's fruiting should not be pruned in any way, but allowed free growth till late in the season, when they may be shortened back, but not to the required height, merely lightened of superfluous wood. At the final pruning in the early spring, cutting back to the height allowed may take place, as if pruned to the proper height in the autumn, the canes often die back lower down in severe weather. After the removal of old fruiting canes a good mulch of decayed manure should be placed over the roots, not dug or forked in; and on light gravelly soil there is no better mulch than manure from the cow-yard, as on hot, dry soils it keeps the roots cool and retains the moisture. This mulching should be given as soon after the fruit is gathered as possible to assist in building up strong canes for next season. G.

THE NEW ZEALAND FORGET-ME-NOT.

THIS is a native of New Zealand and was introduced many years ago, but one does not often see the plant in bloom. The heart-shaped leaves are of very large size, and on well-grown specimens measure fully a foot across. Above the foliage rises a flower-stem about 10 feet high, terminated by a dense cluster of flowers, each about the size of a sixpenny-piece, of a most beautiful turquoise-blue, shading off to pure white at the edges. It is a Borage-wort, and a near neighbour of the Forget-me-not. A very successful cultivator of the Mycoetidium sows seeds in September in a shallow pan, placing it in a cool, dark frame. In the following September the plants make their appearance, and are then removed to a cold greenhouse. In March they are potted singly into 2 1/2-inch pots in a mixture of loam and leaf-soil with a little silver-sand, and plunged in some Cocoa-nut-fibre in a cold frame. The plants are again potted in May, and at this potting some old Mushroom-bed is used with the soil. They are then replaced in the frame, plunged as before and shaded from the sun, the lights being always kept wide open. At the beginning of August

again pot them, this time into 8 1/2-inch pots, and remove them to their old quarters where they remain during the winter, being covered with mats on frosty nights. They commence to grow in the following March, and during the greater part of May and June will bloom. The New Zealand Forget-me-not requires much water when growing, and at the time they are throwing up their flower scapes a little manure-water helps them. Keep them free from green-fly which is death to them.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editors of GARDENING, 27, Southampton Street, Covent Garden, London. Letters on business should be sent to the Publishers. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent to press some time in advance of date, they cannot always be replied to in the issues immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appeared.

4690.—Vines in a cool-house.—Is it best to grow Vines in a cool-house in pots? If so, what size should the pots be?—M. A. R.

4691.—Nitrate of soda.—I wish to apply the above to my lawn, and wish to know when and in what form it should be applied?—R. H.

4692.—Packing Peaches.—I shall feel much obliged if anyone will kindly tell me the best way to pack Peaches and Neotines to send by post.—R. S.

4693.—Compost for the Oleander.—I should feel greatly obliged if someone will kindly tell me what compost will suit the Oleander best?—OLANDER.

4694.—Roses from cuttings.—I am told it is very easy to grow cuttings of Roses by striking them in bottles of water. Will someone tell me the process?—A.

4695.—Manuring ground.—Should artificial manure be put over ground before being dug for the winter, and if so what sort is recommended?—M. A. R.

4696.—Planting Strawberries.—I want to set out a new bed of Strawberries. What is the best time for planting, and at what distance apart? And what are the three best kinds?—ENQUIRER.

4697.—Treatment of Lilacs.—Lilac auratum and L. inodorum have not done well this year in pots. I intend to plant them out in the border. When should I do so—autumn, or spring?—G. S.

4698.—Tree Carnation-cuttings.—Will someone be kind enough to tell me how to strike some Tree Carnations for the greenhouse, and also for out-of-doors, or is it too late in the season?—E. C. I.

4699.—Cuttings of "Geraniums," "Fancies," &c.—Will someone please tell me when is the best time for taking cuttings of "Geraniums" and "Fancies"? And also of "Crocuses" and "Box"?—INQUIRER.

4700.—Roses for button-holes.—Will "J. C. C." and "P. U." kindly advise me as to the best dark-red variety of Rose, dwarf plants, not flowering, for button-holes, for pots in a cold greenhouse?—MARGARET.

4701.—Clematis Jackmanii.—Will anyone kindly tell me what is the best time to buy and plant out a Clematis Jackmanii? What month is the proper one for pruning it when well grown? Should it be pruned the first year?—RONA.

4702.—Planting Clematis.—Will you be glad to know when is the best time to plant Clematis, now or in spring, and where to obtain same? Also what kinds would be most suitable for front of house, north-east?—BROOKER.

4703.—Birch-wood ashes.—Would anyone kindly inform me if the ashes from burnt Birch-wooders are useful for potting "Geraniums," Wallflowers, and other soft-wooded plants in, and if so, what proportion to use to garden loam?—BIRCH.

4704.—Unhealthy Roses.—Will "J. C. C." or "B. G. R." kindly tell me what has affected my Rose-trees? They appear to have had a lot of soap-suds thrown over them, but that is not the case, and the leaves are shrivelling. Also the cause and cure?—FARO.

4705.—Myrobalan Plum.—I have seen this Plum favourably mentioned for bridges, and have sown one or two for it, but cannot get it, and all the catalogues I have looked at do not mention it. Does it go by any other name, or where can I get it?—BIRD.

4706.—Roses in beds.—Last year I planted two small beds of Roses. Will someone please tell me when is the time for pruning or cutting back, and how much I should cut off, and whether I should cut back the wood of last year, or the new growth of this year?—INQUIRER.

4707.—Lily of the Valley.—I have a lot of Lily of the Valley for forcing in winter, and intend planting them in a frame heated by a hot-water pipe. Do they require a layer of manure as well, and when is the best time to move them into a hot-house?—ELEANOR.

4618.—Medlar and Roses.—In the Medlar a fairly quick-growing tree, or slow? Should one like to ask our friends "J. C. C." and "P. U." whether the thick liquid pumped up from a cow-pool is too strong for established Roses, and how frequently may I apply it? I am a believer in manure, but fear over-doing it.—BIRD.

4619.—Malmaleon Carnations.—I have a lot of young Malmaleon Carnations, and want them to flower in the winter. Would someone kindly tell me the best sort of soil to plant them in, and whether I should keep them in a Vine-house or in a Fernery? Both have a good deal of heat. Ought they to be near the glass?—EDWARD.

4620.—Hiding a black paling.—I have an ugly black paling at the bottom of my garden which I should like to hide by covering it with some creeper; but it is much overshadowed by trees in my neighbour's garden. I shall be greatly obliged if you would suggest some plant that would grow in the spot under these circumstances?—E. BARN.

4621.—Begonias after flowering.—I have a few Begonias which have done flowering. I have put them under the glass, keeping the pots down on their sides, but they do not seem to dry off. They have been in that position about four weeks, yet some of the tops are still green. Have I done right, or wrong? Any information would be greatly obliged.—F. K.

4622.—Sea-weed as manure.—I shall feel obliged if someone will kindly inform me what are the properties of Sea-weed as manure, and whether it will take the heating properties of stable-manure? It is good for all garden produce—trees, shrubs, flowers, &c.? Living as I do by the sea I am able to obtain it in large quantities, and very cheaply.—FRANK LIGGERS.

4623.—An Ivy-leaved "Geranium."—I shall be glad if anyone will tell me the best way to treat a Pink Ivy-leaved "Geranium" in a cold greenhouse. It is now planted against the wall, and has now a mass of bloom, 10 feet high, but has now become so straggling, and has a lot of dead wood under the green. Shall I cut it back to within 4 feet of the ground, and if so, when?—G. L. BATHUR.

4624.—Transplanting White Rockete.—I shall be glad if anyone will kindly tell me if it is worth while to transplant a very thick border of White Rockete? I sowed a packet of seed that autumn, and it has grown so strong and large this summer that the soil cannot be seen at all. It has not yet flowered, and as I am very ignorant in the matter I should be glad of advice.—MARY BARKER, Long-street, Manchester.

4625.—Rosa "Ginre Lyonalee."—An eager other Rosa I have a Gloire Lyonalee, six branches of which are pegged down, leaving nine or ten up-standing ones about 6 feet 6 inches high (the up-standing branches having grown since spring). The Rose is now well in April and May, and not since. Am I being the plant make too much wood? Should some be cut back? It is healthy and free from insects.—MICKLEBURN.

4626.—Laying out a kitchen garden.—I should be much obliged if someone would give instructions for laying out a kitchen garden, and the best advantages? The directions of the beds, the construction of the walks, with the best materials for edging them, the position of vegetables and fruits, such as Cuscuta, Rhubarb, Appareau, Raspberries, &c., are some of the points which would, I think, be of general interest to me and other readers.—LEONA PAULINE, M.L.C.S.

4627.—A span-roofed greenhouse.—Will someone have the goodness to give me the needed information to the following uses? I am about to put up a span-roofed propagating-house, 20 feet by 14 feet. It is to be built on ground at the back of a coach-house of which I have 10 feet below the base of the greenhouse. I desire to know how the heating of both may be best effected by the same boiler, and the best kind of the latter as concerns consumption of fuel.—J. A.

4628.—Cleaning Camellias.—I should feel much obliged for information on cleaning Camellias? I have six very large plants in tubs, which are very badly infested with what appears to be mealy-bug; the bark of the Camellias and the undersides of the leaves are completely covered with it. It is of a white colour, like mealy-bug, but on examining came I can find no insect resembling mealy-bug—i.e., same as I could find on a hardy plant. What can it be? And what remedy should I try to remove it?—CHRISIA.

4629.—Treatment of Roses.—I have six Climbing Roses planted in a bed. (Gloire de Dijon is one; I do not know the names of the others). They are now in a house with Midge-bell Ferns; they have flowered well in the spring. The house is three-quarter span-roofed, and heated with hot-water pipes. They are free from green-fly. I wish to know what treatment should I give them from now to the time of flowering again in the spring? Do they require much water at this time? Should they have artificial heat? When should they be pruned, and in what manner?—CHRISIA.

4630.—Management of pot-Roses.—Will someone kindly tell me the routine of management that pot-Roses require from year to year? I want mine to bloom in their natural season. I have a cold greenhouse facing due south. Last November I purchased two Teas, Catherine Marnet and Ferte de France. They are now in a house with Midge-bell Ferns; they have flowered well in the spring. The house is three-quarter span-roofed, and heated with hot-water pipes. They are free from green-fly. I wish to know what treatment should I give them from now to the time of flowering again in the spring? Do they require much water at this time? Should they have artificial heat? When should they be pruned, and in what manner?—CHRISIA.

4631.—A small greenhouse.—I am having a small greenhouse erected 12 feet by 7 feet. The side facing north will consist of a wall about 7 feet high, from which will rise a span roof to the top, facing south, to be constructed with a dwarf wall and eaves. In the management of a greenhouse, I am a novice, and so want to feel my way with it. For the present, therefore, it will be unheated. In such a structure could I grow Grape-Vines with any degree of success, and if so, what would be the best kind?

If I have hit heated what would be best means of doing so? 'Orchid Lover,' whose interesting letter I read last week, speaks of a Syphon gas-stove. Would be kind enough to say if he found that economical and effective? Also what temperature be kept up during the winter? I would much like to follow in a measure if possible, and should therefore value any further information he or any other correspondent could give!—J. PANCA.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

4632.—*Oxybaphus nyctagineus* (Umbrella Wort) (H. Stimmovdy).—This is the name of your plant which, although it was introduced many years before I was born, I have not seen in a living state for years. It is a native of the State of Missouri, in North America. It is a pretty plant, which thrives best in a sandy loam. The border must be well drained. I have been in the habit of protecting it in winter, but if it is a necessity or not I do not know.—J. J.

4633.—*Piper nigrum* (G. Souter, Glasgow).—The four specimens you send all appear to be species of the Pepper family, a genus comprising upwards of five hundred kinds, so that it is not to be wondered at that three of them I cannot name, but the one marked No. 2 appears to be a plant that I have grown as the Black Pepper (*P. nigrum*); but I have seen other kinds with the same name, but I suppose they are the same purpose economically. Send them to the director of the Royal Gardens, Kew, asking him to name them for you.—J. J.

4634.—The Kie-Kie of New Zealand.—J. Roberts asks if this plant is not a Pandanus? He has seen it wreathing the trees with a beautiful soft, and it is said to yield a very agreeable fruit. No, my friend; this is not a Pandanus, for I do not remember that the genus is represented in New Zealand; but it belongs to the same natural order. It is the plant called *Freyinotha Bankii*; it has long narrow leaves, which are spinulose; and the so-called fruits are the bracts which surround the male flowers; these are fleshy and pure-white. They have a delicious flavour, and are highly prized by the Maori, who call them *Tawera*. I have grown the plant, but do not know any place where you could obtain it in this country.—J. J.

4635.—*Polygonum affine*—G. H. sends a specimen of this plant for a name, and it is less charmingly beautiful than I cannot help but notice it here. The leaves are about 8 inches long, somewhat oblong in shape, more or less wrinkled, minutely toothed at the edges, and pinnate. The flowers are produced in racemes, which are as long as the leaves, and of a bright rosy-red, becoming paler with age. It is a native of the Himalaya Mountains, where it is said to grow up to 14,000 feet elevation, consequently, it is quite hardy with us here; and I would specially recommend it to my friends and readers who have a bit of woodland in the country as a plant they should make attempts of in the Grass and other things.—J. J.

4636.—*Xylophylla latifolia*, J. Roberts is the name of the specimen you send with the remark, "It makes a very pretty plant, especially when, as now, it is in full flower all round the leaves." The above is its name, and it belongs to the Sparge-wort family; but whilst you are quite right about its making a very pretty plant, you are wrong about its flowering round the leaves, because these are plants that very seldom form any leaves—at least, in cultivation—and I never saw this plant with a leaf but once. This is formed on the tip of what you take to be a leaf. It is small, something like the *Chamaedaphne*. The organs you mistake, and very naturally, for leaves, are simply flattened branches, and it is around these flattened branches that your flowers are growing.—J. J.

4637.—Grubs eating leaves (Heron).—I cannot say what insect has eaten the leaves of your plants; there are so many that might have done so. The best way of finding out is to examine them at night. If the caterpillars of a moth are the culprits, it is not of much use dressing the ground, as the eggs are laid on the plants, and the caterpillars do not touch the ground. From the appearance of one of the leaves I am under the impression that the holes are caused by the rays of the sun being concentrated on certain parts by shining through drops of water, which causes withering and the death of the leaf at those parts; in consequence of the leaf being killed or knocked out, causing the holes. I know that holes in leaves are at times caused in this manner, but I am uncertain if this is the case in the present instance.—O. S. S.

NAMES OF PLANTS AND FRUITS.

Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C.

Names of plants.—J. P. B.—*Coronilla* species apparently, but poor specimen.—*Nema*.—*Periploca graca*.—J. T. Marshall.—*Tradescantia discolor*.—*Asteron*.—*Coccoloba flavescens*.—K. Mitchell.—*Hippocrepis thymoides*.—Rose 'Oleire de Dijon'.—N. Maddison.—*Dogwood* (*Cornus*).—G. G. Wardine, Ramsey.—1, Cannot name; 2, *Sedum Spaldii*; 3, *Sedum acre*; 4, *Inseuifolius*; 5, *Saxifraga hypnoides*; 6, *Inseuifolius*; 7, *Euphorbia parviflora*; 8 and 9, Cannot name; 10, *Podophyllum Emodi*. Another time please send better specimens, and only six of them.

Names of fruits.—H. Gamble.—Apples all too small to name.—J. M. G.—Apples: 1, Empress Alexander; 2, Blenheim Orange; 3, Norfolk Seedling; 4, Pear Bourré d'Amantia.—F. H.—Apples: 3, Norfolk Seedling; 6, Five-veined Pippin. Others we cannot name. Pears: 1, Not recognized; 2, Williams' Bon Chrétien.—B. Akkuna.—Apple sent was decayed too much to recognize.—Box of Pears without name or address.—K. Ouellette.—1, Not recognized; 2, Winter Nellis; 3, Brown Mead.—H. G. H.—Pear: 1, Williams' Bon Chrétien; 2, *Eswood*.—H. Carter.—Apple *Carlitio Cedillo*.—H. J. Sheppard.—Apples: 1, Fearn's Pippin; 2, Empress Alexander; 3, Bymer; 4, Blenheim Orange; 5, Yorkbair Beauty; 6, Not recognized; 7, Cox's Orange Pippin; 8, Norfolk Seedling. Pear not recognized.—J. J. Alfred.—Pear Bourré d'Amantia.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

J. H.—Lift the Plum-trees in October.—G. A. Lambert.—Celery-ty; dust the leaves over with soot when they are wet with dew, and keep the roots of the plants well supplied with water.

BIRDS.

A reasonable note.—Now that the close season is well over the birdcatchers are busy, and young healthy birds can be purchased at a very reasonable rate which, with care, will make splendid songsters for next year. Cook Goldfinches at eightpence each, Linnets from fivepence to sixpence, Bullfinches from a shilling to eightpence, Siskins at the same price, Skylarks at a shilling, also Thrushes and Blackbirds. Cook Goldfinches have the shoulder black, in the hen it is brown; cook Linnets have the web of the flight feathers broadly white on one side, in the hens the white stripe is very narrow and does not touch the quill; cook Skylarks have the outer wing-feathers longer than in the hen, so that if the outer feather is drawn downwards to the end of the tail the shoulder still remains angular, whilst in the hen the shorter feather being drawn farther back, rounds the shoulder. Be careful to notice these points. Cook Thrushes you must catch yourself to tell the sex.—A. G. BUTLER.

NEW PHOTOGRAPHIC COMPETITION FOR 1893.

Owing to the early date at which our prizes were announced to be sent in this year there was not time to properly take many kinds of outdoor fruits, flowers, and vegetables; therefore we offer further prizes for these things, to be competed for during the present year; allowing till the end of November for the work.

Class I.—FLOWERING PLANTS.—A prize of FIVE GUINEAS to the sender of the best collection of photographs of flowering plants grown in the open air or under glass. This series may include flowering trees and shrubs of all sorts.

Class II.—BEST GARDEN FRUITS.—A prize of FIVE GUINEAS for the best collection of photographs of any of our good garden fruits: Grapes, Peaches, Apples, Pears, Plums, or any other fruit grown in Britain. Fruits should not be crowded in dishes if good and clear photographs are sought.

Class III.—BEST VEGETABLES.—A prize of FIVE GUINEAS for the best collection of photographs of best garden vegetables. The object of this is to get fair representations of the finest garden vegetables under the old genuine names. We do not want to exclude real novelties when they are shown. In all cases the name of the variety should be written on the back of the photograph.

Class IV.—AUTUMN FLOWERS AND LEAVES.—A prize of FIVE GUINEAS will be given for the best series of photographs of autumn flowers and leaves in the house in a suitable vase, table, or other kind of indoor decoration.

WHAT TO AVOID.—Cut flowers or plants should not be arranged in vases with patterns on them. Backgrounds should be plain, so as not to come into competition with the beautiful flowers. Figures of men or women, barrows, watering-pots, rakes, hoes, rollers, and other implements, iron railings, wires, or iron supports of any kind, labels, and all like objects should be omitted. Dwarf flowers are ineffective when taken directly from above. The camera should be brought low down for such. All photographs should be mounted singly, and not several on a card. The photographs should not be less in size than 5 inches by 4 inches. The following are the rules to be observed by all competitors.—

In any of the departments, if no collection of sufficient merit be sent in, no prize will be awarded. All competitors not winning a prize will for each photograph chosen receive the sum of half-a-guinea.

First.—The photographs may be of objects in the possession of either the sender or others; but the sources whence they are obtained must be stated, and none sent the copies of which is open to question. There is no limit as to number, and no fee to pay. The Editor is to have the right of selecting and publishing any of the chosen photographs. The photographs may be printed on any good paper that

shows the subjects clearly; but those on albumenized paper are preferred for engraving.

Second.—The name and address of the sender, together with the names and description of the object shown, should be plainly written in ink on the back of each photograph. This is very important.

Third.—All communications relating to the competition must be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C., and the class for which the photographs are intended should be marked on the parcel, which must also be labelled "Photographic Competition." All competitors wishing their photographs returned, if not successful, must enclose postage stamps of sufficient value for that purpose.



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GARDENING ILLUSTRATED.

No. 758.—VOL. XV.

Founded by W. Robinson, Author of "The English Flower Garden."

SEPTEMBER 16, 1893.

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LILIUMS FOR EARLY FORCING.

TAKEN as a whole, the genus *Lilium* affords but few species or varieties that may be forced very early into bloom, and yet be regarded as profitable from a commercial point of view. To be profitable at all they must be so at the first attempt, simply because when forced early into flower the bulbs suffer so much in consequence as to be of little or no use ever after, and particularly does this apply to those belonging to the longiflorum group. All those who take them in hand, therefore, should bear this in mind from the beginning and act accordingly, doing their best to make the best of them in the first season. All Lilies which may be forced, however, do not behave quite so badly as those of the longiflorum section, and of none is this so true as the fine old Lily so frequently seen in gardens almost everywhere throughout the country—I mean the Madonna Lily (*L. candidum*). This grand old-fashioned flower may, provided disease keeps away from it, not only be forced into flower quite early in the year, but, what is more, it may later on be planted again in the open ground, and there left for a season or two to recover itself and once more be forced, and with good treatment in the interval, prove quite as satisfactory as when originally forced. It must be stated, however, that the measure of success to be hereafter attained will greatly depend upon the treatment the bulbs receive after they have flowered when first forced. To the commercial man—the grower for market—whose business it may be to cultivate for the flowers alone, this being able to utilize the bulbs again after a season or so of rest should be, as it is in some few instances known to the writer, a subject for serious consideration, for herein lies much of their value. Growers of bulbous plants, and in particular those who go in for early forcing and have to purchase year after year fresh supplies of bulbs either from home growers or from Continental sources, know something of the uncertainty and risk attendant thereon, and how narrow the margin of actual profit is when the flowering is completed. Such men as these will not be slow to recognize the

VALUE OF A BULB that may be grown by every one of them in ordinary garden soil, and one, moreover, that will provide enough bulbs of fine quality for future use without having one again to pay the top price of the market. Now this is exactly what may be done with *Lilium candidum*—a Lily of easy culture in most gardens, and in good loamy soil producing wonderfully firm, solid bulbs, the equal of which rarely ever reach us from Continental importations. These latter are frequently loose and generally fishy to the touch, too light also in proportion to their bulk, and produce results in a like degree as a consequence. Home-grown bulbs of this Lily, on the other hand, are distinctly solid and heavy, with the scales closely imbricated; these are the bulbs to do good service, and those interested should use their best endeavours to secure them. The present is a capital time for obtaining them, as it is of importance when intended for forcing that they

should be potted while dormant, and before the new radical leaves from the bulb. Having secured the supply of bulbs, get them into the soil with as little delay as possible. If, as I have said before, they are grown for the flowers alone, I would suggest putting several bulbs, according to their size, into 10-inch pots rather than adopting the usual method of planting the bulbs singly in 6-inch or 8-inch pots. With the soil fairly charged with roots there is really very little opportunity in this particular case for the bulb to develop itself, an item of importance where the well-being of the future bulb receives consideration. Apart from this, the above size of pots afford but very little depth, besides being often troublesome by the top-heaviness. Five or six bulbs in a 10-inch pot, or larger if in stock, have a much better chance, because while affording a much greater depth of soil, abundant room may still easily remain for giving a thorough watering when necessary, a matter often very imperfectly performed when small pots are employed. This, then, I hold to be an advantage to the bulbs, helpful in the production of a good crop of flowers, and a decided saving of labour, as well as satisfaction that the work as far as possible is properly performed. The

POTTING MATERIAL for this Lily need be no elaborate mixture, good loam constituting the bulk. Very little or no manure need be used; indeed, the crop is much more likely to keep free of disease where none is employed. Add a little sharp sand, or old mortar rubbish or charcoal will do equally well, potting rather firmly and covering the bulbs an inch deep with soil. When potted plunge the pots in coal ashes, and for the time being withhold water from them entirely; but when the radical leaves display signs of renewed activity they may receive light showers occasionally, never allowing the soil to become saturated. The plunging material, I should have stated, should only just hide the pots from view; if employed at a greater depth it has a tendency to draw and weaken the radical leaves, and these when taken from the ashes are frequently broken or injured and sometimes lost. Where radical leaves spring from the bulb it is important that they should be preserved and retained, as they materially assist in the production and development of the roots. This fact is amply demonstrated by those bulbs of this Lily which, from some cause or other, do not send forth these leaves in due course, and invariably it will be found that the roots in these instances are inferior and root-formation sluggish generally. Some people in starting this Lily for forcing or pot culture do not in the first instance cover the bulbs with soil at all, but are content merely to place the bulb on the surface of the soil, and when about to start into growth to cover them with soil. I fail to see, however, the wisdom of thus unnecessarily exposing a bulb in this manner to all the varying influences of temperature and climate to which we are accustomed just at the moment when we are expecting it to push forth growth, and when the keeping of the bulb in a uniformly plump condition should be one of our chief views to assist in the speedy formation of roots. The Madonna Lily, it should be

remembered, does not produce stem roots, so that there is nothing to be gained by thus exposing the bulbs, and I strongly urge not only covering the bulbs with soil, but adding a little covering of the plunging material also. Later on in the year, say early in November, when a fair amount of roots has been produced, the whole hatch may be moved into a cold pit or frame, giving plenty of air day and night for the present. The end of the year will be quite soon enough to introduce it into heat, and let this at first be gradual, as this Lily is very sensitive to artificial heat, and a temperature too warm will have the effect of producing a weak, puny growth. A temperature of 50 degs. to 55 degs. will suit well, using no more water at the roots than is absolutely necessary.

IN FORCING this Lily, studiously avoid the use of the syringe over the plants; damp the floor or other available surfaces early in the day while the ventilators are still open, avoiding a close, stuffy temperature for one the reverse. It is undoubtedly well known that in wet seasons this Lily in the open ground is very susceptible to a disease which ruins the crop in three or four days, and it is equally so under glass if the use of the syringe is freely indulged in and the atmosphere overlaid with moisture. If kept moist—but not wet—at the root and a comparatively dry, warm atmosphere maintained, there will be no need to fear disease in the early forcing of this Lily, which, though a common-place plant in many gardens, is undoubtedly one of the best of its race, and still the purest and most chaste of all Lilies. Yet another Lily specially suited for early forcing is the new well-known

EASTER BERMOUDA LILY (*Lilium longiflorum* Harris), a kind now grown in immense quantities for market as well as for private use. During the last ten years enormous quantities have been sent to this country from America, where it undoubtedly finds a home remarkably suited to its free growth and full development. It is, perhaps, even more in demand than the species just noted, being very serviceable as a pot plant for general decorative purposes, as well as popular among out-flowers in many and various ways. It may also be subjected to hard forcing when occasion requires, the primary consideration being to produce a fine spike in the first season, because when once subjected to forcing, the bulbs are of little value after. Probably the climate which produces it so plentifully and of such quality may have the effect of restoring it again to its former healthful vigor, but certain it is that in England at least the trial is so much waste time. I have repeatedly tried to reanimate the bulbs of this kind, but have never had the slightest success, and eventually had to consign them to the rubbish-heap as worthless. The only service they ever rendered was when I turned them out of pots as soon as their flowering was over and roughly planted them in an out-of-the-way corner, where they had no attention whatever. Under this treatment many produced another spike of bloom, and though small, bearing sometimes three flowers, they were, nevertheless, valuable, particularly enough these flowers, because wanted just at the time, realized even more in the market than many of the very

superior flowers that had been forced into bloom. But while a few flowered thus and were useful enough at the time, the bulk of the batch was only represented by shattered fragments. The earliest consignments have already arrived, and the herbs should be obtained at once and potted without delay. In the purchasing of this Lily little or no disappointment should ensue, inasmuch as the bulbs are generally offered in sizes of so many inches' circumference, which gives the purchaser an opportunity that may be repeated with other things to the better satisfaction of all concerned. It generally happens with most imported bulbs that the best—which in this case may also mean the largest—are the cheapest, but on more than one occasion with this Lily I have proved the contrary to be the fact. For example, let us take three sizes as usually offered, these having a circumference of 5 inches to 7 inches, those of 7 inches to 9 inches, and those of 9 inches to 11 inches, the last, of course, being simply magnificent in point of size. What I wish to point out, however, is this—that if anyone required to spend say £3 or £10, and his object was flowers for market, I should unhesitatingly advise him to purchase medium-sized bulbs, because he would obtain more flowers for his money than if he purchased the largest bulbs, for it should be remembered that because giant bulbs it does not follow that this increase of size means increase of flowers to the same extent; and another thing, very large flowers are not so much in demand as medium ones, because these latter are suited to a larger number of buyers.

AS POT PLANTS again, those of medium height are decidedly the most useful. Plants of 6 feet or more high, and with from eight to a dozen flowers, are excellent in many floral groups and duly appreciated. These are also very imposing for home decoration, but, regarded all round, those of medium size are at once more serviceable and far more easily accommodated and managed. This Lily delights in a fairly rich soil, and produces abundance of large roots very quickly when potted; indeed, I have had the pots almost fully charged with roots in three weeks after potting about the middle of August. There is a lesson in this their eagerness to start root which should not be lost sight of, particularly as inquiries are at times made concerning malformed flowers. These Lilies are grown in a much hotter country than our own, hence mature earlier, and are ready to recommence growth in proportion. To keep these bulbs dry and out of the soil till early the end of the year is, therefore, a great mistake. It is not unlikely that such a course would tend to malformation, though half-a-dozen other things may lead up to similar results.

SECURE YOUR STOCK OF BULBS EARLY, then, and let them root in proper season, as is the forcing of Lilies, or, indeed, any other plants, a full complement of roots is one of the most important items to success. In potting use pots in proportion to the bulbs, giving at the original potting the sized pot in which it is intended to flower them, subsequent potting being of little or no good, but frequently the reverse. Pot firmly and plunge in coal-ashes, covering 6 inches deep. A few weeks in the ashes will suffice, for the bulbs are just as eager to produce top-growth as they are roots; and when the points show above the ashes remove them at once to a cold pit, in which they may be darkened for a while and by degrees inured to the light. Give air abundantly for the present, as they make very rapid growth even with frame protection, while a close, stuffy atmosphere will also conduce to the more rapid increase of green-fly, a veritable foe to this particular Lily; indeed, it is almost impossible to grow it unless the fly, and if this gets the upper hand it is difficult to get rid of it. In consequence of the attacks of this insect pest I prefer always to pot this Lily singly. I have found that dipping the plants is the best means of eradicating them, inasmuch as the fly congregates in the top of the plant, and in this position is more difficult to kill by fumigation, but it cannot escape when it comes to dipping the plants. The most effectual way is to fumigate thoroughly in the evening, which clears off any insects existing on the exposed leaves and stems, and follow in the morning by dipping the tops of the plants in Tobacco-water, or in soap and Quassia; this will have the effect of

leg out all those existing in the closely imbricated heart-leaves. Unless some such means are adopted, fumigation alone becomes a very serious expense where Lilies are grown in quantity. When growth is completed and the huge ribs on the summit of the stem, there is no longer a hiding-place for the fly, and ordinary fumigation will then suffice.

GARDEN WORK.*

Conservatory.

The days are visibly shortening, and the sun, though hot at times, is losing its power. No shading will be required now; but the ventilation should be ample and free, both night and day. This being the season when the plants which have been placed outside to ripen up growth are housed again, this night ventilation is very important to prevent the plants coming from the open air receiving a shock and losing their foliage. This is especially necessary in the case of hard-wooded plants. As a rule often lose foliage which might be retained if the conditions of housing times were made more suitable. Watering also requires more care till the plants settle down under the changed conditions. What to observe there is about a collection of plants. But so do they well require a light cool-house, where the plants can have careful treatment, without the presence of those soft-wooded subjects which always require a good deal of moisture, and a damper condition of the atmosphere than is good for them. If plants must be grown in a mixed collection of plants, only a few varieties, such as *Hymenocallis*, *Wilmoreana*, *Cavendishi*, and *ventricosa*, should be kept. The *ventricosa* section are very handsome, and are not so difficult to manage as the triflorus and other hard-wooded sorts. Especially are very useful winter-flowering plants, and should now be under cover. They will bear a close, warm atmosphere better than the others. Good specimens of the *Encalyptus* (Blue Gem) form pretty good subjects; the blue glaucous plants come out well in the conservatory. There seems to be springing up a demand for these for room-plants, there being an impression abroad that they have some effect in warding off disease. Whether they have or not, the idea of growing a *Gum-rose* or two indoors is not a bad one. Winter-blooming stuff, such as *Cineraria*, *Primula*, and *Cyclamens*, should here very free ventilation night and day to make the plants vigorous yet sturdy. Hardy winter is a valuable principle in a winter-blooming plant. Keep *Arum Lilies*, *Salvia*, *Eupatorium*, and such subjects out as long as it is safe to do so; but they must not be exposed to frost. Roses intended for forcing should be pruned and top-dressed. As far as possible prune so as to leave a single stem, or two inches if not a bud or two, the strongest bloom. The same principle is applicable to Tea Roses. A plant all soft-wood shoots is not of much use for forcing, as the blooms must be small and poor. This out the summer-flowering climbers, and give encouragement to those plants which are effective in winter.

Stove.

Do not let *Poinsettias* get pot-bound before shifting them on, or the bottom-leaves will fall. These plants should have a little artificial heat now regularly. Therefore, they must be moved now from cold pits. The same remark applies to most of the soft-wooded stove-plants, which are better kept in low pits or frames during summer. Referring again for a moment to the *Poinsettia*, what a grand plant this makes planted against a wall in a house where heat is used in winter! Where the trunks of scabrous plants are required for cutting, two or three strong plants set out against a wall in a light-house where a temperature of 50 degs. is kept up in winter will yield hundreds of heads for the knife to deal with. This plant might be associated with *Euphorbia jasquiniflora*, both of which are splendid plants against a wall in winter, the young shoots being trained to wires. A drier atmosphere should be maintained now, but the change should be very gradual, or the plants will be attacked by insects. The work of destroying insects must be incessant. It is perfectly true that when the conditions of growth are favourable, insects do not give so much trouble. Let a check come from any cause, and insects become more numerous, and soon begin to swarm, and no plant can be badly attacked with insects without serious injury being done. Therefore, in reducing the atmospheric moisture to meet the shortening days allowance must be made for the drying effects of fire-heat. In a general way when fires are first lighted it is quite possible that injury may be done by overheating. Some persons cannot make a small, steady fire that will just circulate the quantity of heat required and no more.

Hard-wooded Plants.

As soon as the house for these has been cleaned or painted and made ready, all New Holland plants, *Cape Haths*, and other hard-wooded plants should be placed under cover. Make the change for them as gradual as possible by leaving on air night and day so long as the weather will permit. If time permits the staking and tying may be done now; but very frequently this work has to be postponed till the bad weather comes in winter.

Zonale for Winter-blooming.

Discontinue picking off flower-buds, and before heavy rains come the plants should be placed under cover. It is not likely much will be done with these in a lower temperature than 55 degs. to 65 degs., and the house must be light and dry. I have had *F. V. Russell* very good planted out in a border in a light-house, and any good free-blooming variety, such as *Wright's Gem* or *Henry Jacoby*, will do well planted out in a warm-house. One of the most useful plants to grow in quantity for the production of cut-flowers in winter is the *try-leaved variety*, *Mme. Crocote*. The flowers are soft-pink, semi-double, and have long stalks. It grows and flowers freely, and is one of the best winter bloomers.

* In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a month later than is here indicated, with equally good results.

Bulbs for Forcing.

A good many of the Roman Hyacinths will now be potted and making roots outside plunged in Cocoa-nut-fibre. Freesia will be coming on without plunging in cold frame or pit, neither will require much water for the present. One good watering settles the soil, but when plunged the bulbs get moisture enough for a time, at any rate, from natural sources. Hyacinths, early Tulips, Narcissus, Squills, Bermuda and Old White Lilies should be potted now and plunged to cold pits.

Chrysanthemums.

Where large numbers of Chrysanthemums are grown the work will be increased. If the plants lack support the leaves will lose colour, and if the disbudbing is not promptly done the buds which are just being selected may perish for lack of nutriment.

Window Gardening.

The most brilliant plant for the room garden just now is the Starborough Lily, and its culture is simplicity itself. When a good potful of bulbs has been secured do not be in a hurry to divide. Let the bulbs grow, and then place outside, and there will be plenty of blooms.

Outdoor Garden.

The rare ones opportunity for the Carnation layers, which now look strong and healthy, and the soil will soon be in condition for removal. There is a manifest advantage in early layering, and there is also an advantage in moist soil in using a light gritty compost to surround the plants, and to hold the layered shoots are to be pegged. The beds to receive the layers should be got ready, and in turning over and intermixing the soil look closely for wireworms. A dressing of soot will be useful for all the Dianthus family. If not already done the time of the early-budded Rose has now arrived. Considering the character of the season, the buds have taken fairly well. There has, of course, in consequence of the drought been a great loss among Standard Briers, and Standard Roses will be dear this coming season. Intending planters will do well to place their orders in good time, as it is likely the best plants will go early. The late-started Briers may be boded any time this month, the sooner the better, of course; but at the usual season of budding many of the Briers were unrootable, but the growth has since been rapid. The leaves of the Linas and other early trees are falling, reminding us that autumn is near. Outings of tender plants of which more stock is required should be taken at once. "Geraniums" should be kept outside yet. Get a good stock of Yellow and White Marguerites, spring-stuff does not get large enough to make an early display. Many hardy things may be rooted from cuttings, preferably under glass. The White-leaved *Clematis* redicans make a good edging, and bring perfectly hardy plants to use in ornamental gardening in the place of Box-outtings if the ends of the shoots will root during the autumn under glass. *Pentstemon*, *Tufted* and other *Fenestras*, will root now with certainty.

Fruit Garden.

Apples and Pears were well cultivated here, I think, never been better in season. There will, I dream, be plenty of small rubbish; but this is the fault of the system, or, rather, want of system, adopted in orchard management. Some of the late sorts will be fit to gather earlier this year, but it will be well to wait till the fruit are perfectly fit for gathering before removing them from the trees. Striped Apples are out of much use, and Apples gathered before they are quite ripe are sure to shrivel. Court-Pendo Plat is a bright-coloured fruit, and keeps well if allowed to hang till the last moment, but if taken from the tree too early nothing can prevent its shrivelling. This Apple is rarely in good condition when exposed on shelves in the fruit-room; but packed in barrels and boxes in a cool room it will come out right next January, or later if required. The best way to pack late Apples and Pears—the best specimens, at any rate—is to wrap each fruit in tissue paper and pack in layers in barrels. These may often be purchased cheaply from the grocers and provision dealers of different towns, and if taken care of they will last many years. Root-pruning, should any be necessary, may begin very shortly. In capable hands the work may begin now, doing those trees first where the wood is getting firm. Work of this kind may be done earlier this year. This matter has been so often referred to it is hardly necessary to go into details further than to say that severe pruning of either root or branch I do not recommend. When carefully done, root-pruning is the proper means for checking luxuriant growth, and inducing a more healthy habit. Very plants intended for forcing free from runners, and stand the plants thickly on beds of ashes.

Vegetable Garden.

Late-planted Calery should have liquid-manure twice a week, not a mere dribble, but a good honest soak. The longer nights and the dew will cause rapid growth if the roots are kept moist and firm. The Early Kale, of course, sowed up, and succulent crops will soon be ready for that operation. The work should be done when everything is dry, and the soil must not be allowed to penetrate the centre of the plant. Draw the leaves up carefully, and secure them with a string of netting before applying the soil. Press the soil firmly round the plants with the hands at the top, as this will keep out the wet and facilitate the blanching. Young seedlings of Caulis, Sprouts, Potatoes, and Cauliflowers, &c., must be kept from weeds. Potatoes are fairly free from disease so far as the tubers are concerned, but I have noticed symptoms of disease in the foliage some days ago; but, on the whole, there is less disease this than has been seen for some years. Up to the present Tomatoes in the open air are quite free from disease; at least, I have seen none, and the crop is ripening up well, and most, on the whole, have been a paying crop, though the prices have been ruled low. Broccoli plants in pots set out now in a house where fire-heat can be used when required will set some fruit during the autumn, and will be right for fruiting early in spring. Plant a good breadth of Cabbages, and fill in the spare south borders with Lettuces and Endives. Sow Turnip Radishes, and keep well supplied with water. Clear off all old stems and dead leaves from Globe Artichokes. The young plantations will be bearing now. Liquid-manure will help them now. Strip the seeds from Asparagus-plants, they are very excellent, and will give a good crop of trouble in the future if they ripen and drop about. E. HOUDAY.

Work in the Town Garden.

The weather still remains extremely dry, and plants of all kinds under glass, as well as many of those outside, require copious supplies of water, though in many cases not so much now that they are going to rest as two or three months ago. In a season like the present, what may be termed "dry weather" flowers are alone of any use in the garden, and some of the most useful are the common "Geraniums," Petunias, Verbeas (where growing in deep and rich soil), Galliarides, Gesanias, Phlox Drummond, the French and African Marigolds, and two or three more. I do not think I have ever seen the Soapdragons (Antirrhinum) doing better. They have flowered most profusely, and at a low height than usual. I have a quantity of the pure white and yellow-flowered forms, and find them not only of the greatest value from a decorative point of view, but unsurpassed as cut flowers, being so very pure in colour, and lasting so long a time in beauty. It is worth while remembering that chelidonium varieties are easily increased and perpetuated by means of cuttings, inserted new in sandy soil under a frame or handlight, as well as by seed. Gladioli, too, are flowering extremely well, and so are plants of a succulent nature, such as the Mesembryanthemum (by the way, what a gem is tricolor in this season), the brilliantly-hued Portulaca, &c. Michaelmas Daisy

THE COMING WEEK'S WORK.

Extracts from a garden diary from September 16th to September 23rd.

Have just had the heating apparatus overhauled and put in condition for use. In one case the fire-bars had given way; another, boiler had never been properly set, the flues both at the sides and on the top were too small. It is sometimes difficult to get a bricklayer who really understands setting a boiler, and one of the mistakes they make is to have the flues too small, that is difficult to keep the draught clear. No flue should be less than 2 inches wide; 7 inches would be better for large boilers. The boiler in question has been uncovered and the flues altered, and I am persuaded the cost will be saved in fuel, and in the greater ease with which the flues can be cleaned with hot and brush. Another matter will be brightening of the chimney. A few chimneys cannot be recommended. The fire wants space to do its work, and a lofty chimney where the boiler is large is a necessity. No chimney should be less than 15 feet; several feet higher will be better. Moved a lot of late-potted Tuberoses which have been grown cool up to the present into a house where fire-heat is used to give size to the blooms, which are now

Solenum have set a good crop of berries; but those plants which I turned out early enough to make their blooms outside have set the best. To get plenty of berries ripe enough for autumn work they should be placed outside by the end of June, and should stand thickly in an open situation. I have just been doing a little budding. A few Dwarf Blazes and Minette had been left till now; I suppose chiefly because they had not made much growth and the bark did not work well. However, the bark works freely now, and I have no doubt the buds will take well. Potted up a number of Mrs. Sabine Pinks for forcing. This plant forces well, and the flowers are valuable. I generally depend upon young plants, but this year I have about a hundred of last year's plants in pots for early blooming. A rich top-dressing will be given, and the plants will be helped with liquid-manure.

CHRYSANTHEMUMS.

EARLY-FLOWERING CHRYSANTHEMUMS.

DURING recent years, one has heard almost as much of the early-flowering Chrysanthemum as the big, highly-fed giants that are placed on exhibition tables in murky November. This is a healthy taste, as the early-flowering kinds, so-called for the reason they bloom in September and early October, are not pampered, nor is mere size arrived at in the individual flower, as if size signified perfection. Much has been written in previous issues of GARDENING concerning the culture of Chrysanthemums, whether in bloom in September or December, so that the present notes will be devoted to pointing out a few of the newer kinds not grown by everyone. The majority of the early-flowering varieties belong to the Japanese class, and this is a pleasant fact to record, as this section of old was chiefly composed of the Pompons, such as Roh, very pretty it is true, but far eclipsed by the later acquisitions that rival in beauty of colouring and expression the finest November kinds. Amateurs who cannot boast even of a greenhouse can have them with little expense, and, if the weather is at all favourable, enjoy them in the open, keeping out of the many other things that bloom at the same time. Of course, the queen of all early-flowering Chrysanthemums is Mme. Desgranges and its varieties, which are too common to describe. I must point out, however, that they should not be over looked, as they are very beautiful, extremely free, and easy to grow. A small bed of Mme. Desgrange makes a charming show of colour, and the flowers are useful to cut for the house. The danger in getting novelties is that one is apt to lose one's head over them, and purchase things far inferior to older acquisitions that cost half the price. One of the best of all the more recent varieties is M. Gustave Grunerwald, which may be described as a pink-flowered Mme. Desgranges. It has all the good qualities of the type, the flowers large, and very delicate pink, which passes to white with age. It is as yet rather expensive, but will get cheap in time. Madame G. C. de Brialle is a fine variety; the flowers large, of a creamy-white colour, and dark centre. Albert Chanson is of merit; the flowers golden-yellow in colour, with stripes of rich crimson. Alfred Fleuret is a charming kind, the flowers thin, but very pleasing in colour, rose-lilac, which passes to white, and shaded with a rosy tint, whilst the centre is yellow. Autumn Queen is a slim, early kind; the petals broad, drooping, and deep-yellow, touched with rose. Mme. Dufort is of a crimson-red colour, with tinge of gold to the petals, whilst the centre is of a similar shade. Note may also be made of Mme. Mathilde Cassegrain, which have a large flower, and of nonken-yellow colour, tinged with violet-rose, whilst the centre is yellow, shot with salmon, a soft association of colouring, one melting into the other. Madlle Marguerite Puaige has a crimson flower, with a shading of light-buff, and the central petals are reserved, showing the old colour. M. Pierre Cassegrain has a crimson flower, with the petals tipped



Group of early-flowering Chrysanthemums.

are in many cases fast expanding, and unless where growing in mellow and shady situations a few cans of water or liquid-manure once or twice a week will do the plants a world of good, and increase the size and number of the blooms wonderfully. In all town gardens a collection, larger or smaller, of these charming plants is absolutely indispensable, for with plenty of these and Chrysanthemums there will be no lack of bloom until the winter fairly sets in. An excellent companion to the Asser is the stately Pyrethrum uliginosum, one of the most graceful of all autumn flowers, and which thrives and blooms abundantly in all but the very coolest places. In the greenhouse Fuchsias are fine now, provided they receive abundance of moisture and a moderate amount of shade, and they are also very useful in shady borders and window-boxes. Begonias in pots that have done flowering should be stood out under a sunny wall until the foliage and stems die away, or sharp frost sets in, withholding water by degrees as they go to rest; then bowen them, and keep the tubers or pots cool and dry, yet safe from frost. Get the last batch of "Geranium" cuttings inserted as soon as possible. If wet or cold weather sets in they will do better under glass than outside. Early-struck cuttings of the large-flowered Pelargoniums had better be potted up singly as soon as fairly rooted.

opening, as will be shortly. Potted a number of Begonias. Looked over the forcing Chrysanthemums to take off runners, which the plants are inclined to produce now, and opened the plants out to give free access to air to ripen growth. Sometimes manure-water is given with the view of giving substance to the crowns, but for early forcing the advantage is very doubtful, and if the plants are growing in good substantial material liquid-manure is not required now. I am still putting in cuttings of bedding "Geraniums." Not because I believe in late propagation, but the beds must not be cut hard in early in the season. If I had the space I should like to plant out stock of the principal variety to the reserve garden for the purpose of producing cuttings; but this cannot be done only to a very limited extent. Have discontinued picking of flower-buds from Zonal Pelargoniums intended for winter blooming. They will soon be placed under cover, as shelter from heavy rains will be necessary now. Potted up Arum lilies from open air bed, and lifted Salvia and Eupatoriums from bed where planted to make growth. These plants are much larger, and will throw more bloom than when grown in pots, and with care there will be no check given. The plants are doing better potting in the shade of a lolly wall than they were established. Will be taken indoors before frost comes, as Salvia especially will not bear much frost.

with old gold, and the centre of a similar colour. Four other varieties deserve mention. One is *M. Zephir Lionnet*, of a rosy-purple colour, very pleasing when the twisted petals are reversed, showing an old gold tone. President Leon Say is of a salmon shade, with stripes of red, the reverse of the petals old gold, touched with violet. Two good varieties are *Souvenir de W. Holmes*, so named after the late secretary of the National Chrysanthemum Society, and the colour of the flowers is crimson, touched with buff, the centre yellow. Vice-President Hardy has a bold bloom, the petals broad, but yellow, with stripes of crimson. This selection will form the nucleus of a good group, and others may be added as opportunity occurs. Each year now many first-class novelties are added, forming a class of remarkable interest and beauty. C. T.

TREES & SHRUBS.

4152.—**Planting Clematis.**—If the plants are in pots you may plant them out at almost any season of the year, but if to be lifted, the autumn and spring are the two seasons for the work. Put them in good garden soil, and the best kinds are the following: *C. Jackmani* is very beautiful; it is almost too well known to need description, and its wealth of rich scarlet-purple flowers never seem monotonous. *C. montana* will also succeed in the position mentioned. It is not so well adapted for a small garden as the others, but it will soon cover the house, creating a sheet of pure white in spring, when the flowers are produced in greatest profusion. *C. flammula* will grow quickly and tall, but there is a host of kinds. You will do well to put your trust in *C. Jackmani* and *C. montana*, the latter being the more robust, but the former may be added to give variety.—C. T.

—The best time to plant is November, as the plants are quite hardy, and they become better established when planted before frosts set in too severely. Any large dealer in plants and trees can supply the Clematis. The plants are generally grown in pots; and good strong ones are supplied at about eighteen-pence each. One of the very best is *C. Jackmani*, raised by Mr. Jackman, of Woking, thirty years ago. This variety has rich purplish flowers. Other good sorts are *Deviensis* (blue), *James Bateman* (pale lavender), *Fair Rosamond* (bluish), *Mme. Van Houtte* (pure white).—J. D. E.

—Any nurseryman will supply plants in pots of the varieties named, they being popular kinds. Any time during March or April is a good time to plant Clematis, the roots taking possession at once of the new soil, growth following in the same order, while any good garden soil, with a small portion of partly-decayed manure added, will grow these plants. A compost of loam, peat, and manure will produce better results. If quick growth is important the extra trouble of preparing the soil is time well spent. Abundances of water at the roots and over the foliage before the blooms expand, and during hot and dry weather, will facilitate progress and prevent attacks of mildew, a fungus to which this climber is subject. It is important that the young shoots be secured to the wall as fast as they grow, not only for the sake of appearance, but for the welfare of the plants themselves. The first named commence to open its sweetly-perfumed flowers in May, and scarcely need any pruning. The second is perhaps the most free-flowering of all the Clematis family. This requires close annual pruning, February being the most suitable period. The blossoms are produced on the current year's shoots. The two latter varieties flower from the last season's shoots, therefore need but little pruning. They flower late in the summer as well as early. *Montana* (pure white), *Jackmani* (rich purple), *Sir Garnet Wolseley* (mauve), and *Empress of India* (mauve, with purple bar).—S. P.

—These may be planted either now, in the early autumn, or in the spring, March or April; but perhaps with such a cold aspect it would be better to wait until the latter time. As regards a selection of the varieties, the best way would be to go to a good nursery and suit your own taste now that they are in bloom. Any respectable nurseryman will supply you with plants.—B. C. R.

4513.—**Brown wood ashes.**—Yes, wood ashes of this or any other hard wood form an excellent addition to potting soil. The best way is to fill the surface of the rougher parts for drainage, and of the smoother sides with a two-inch part of the whole may be added to the compost and thoroughly mixed with it.—B. C. R.

4511.—**Clematis Jackmani.**—If you buy a plant in a pot in the spring, and put it in with half a barrow-load of good loam and well-rotted manure, it will make good growth during the summer. In the autumn, when the leaves have died, cut it down to within about 6 inches of the ground and cover the base with fine ashes; the object of cutting down Clematis is to strengthen the plant and make it throw up additional shoots; when as many are produced as you require a little trimming will be sufficient.—A. C. BUTLER.

—There is no better time for planting Clematis Jackmani than the present. It will strengthen the bottom if the plants are cut down at the end of the first season after planting, though many plants are not cut down at all, but simply allowed to grow and get strong in their own way, which they will soon do if the site has been well prepared. Whatever pruning or shortening back is necessary should be done as soon as the buds show signs of moving in spring. In a general way all the pruning required is to dress the plants over by the removal of dead growth, tendrils, &c., or shorten back weak shoots.—E. H.

—This free-flowering variety requires close annual pruning to give it vigour of growth. Early in February every year cut back the whole of the previous year's shoots to within an eye or two of the base from whence the growth commenced. In buying a new plant the chances are that it would be cut down in the manner indicated at the time of purchase, say end of March or early in April, that being a good time to plant any kind of Clematis, for the reason that growth is then active, and the roots quickly take to the new soil. This variety is most accommodating as to position, while a southern exposure is perhaps the best; it will succeed very well on a northern aspect, and certainly capitally against a west wall or screen. Any good garden soil will suffice, provided abundance of water is given the roots during hot weather in summer, with an occasional dose of liquid-manure at the roots, and the foliage vigorously washed with clear water sometimes, always choosing the evening for this. During a summer like the present this Clematis is subject to attacks of mildew if the roots are not maintained in a moist state; this fungus, of course, prevents the blossoms expanding properly. If it is necessary to provide fresh soil, owing to the present being unfruitful, a small quantity of peat, added to some fibry loam and half decayed horse-manure, makes a capital compost. The shoots ought to be fastened to the wall or trellis as they grow.—S. P.

4450.—**Araucaris.**—I have answered several queries respecting this tree in *GARDENING*, and can sympathize with those who wish to keep the "Monkey Puzzle" in good health; but the fault is in planting such a tree, which is never satisfactory, except under certain conditions. One of the finest specimens in England is at Dropmore, but there everything in the Conifer way thrives luxuriantly. There is practically no remedy when the tree is in the condition mentioned by you. Evidently the root is not deep enough, or it has, like in so many gardens, finished its course. Even in such places as Kew, where everything possible is done to promote their welfare, they are in a half dead or dying condition—an eyesore rather than an attraction. Why they are planted is a mystery. I hope no reader of *GARDENING* will plant the Araucaris unless he is assured beforehand that the position is in every way suitable for it. Moreover, its peculiarly distinct character is completely out of harmony with the majority of things in gardens.—C. T.

4458.—**Striking Ceanothus.**—The varieties of Ceanothus are all evergreen, therefore their leaves do not fall off. The best time to strike cuttings is during the first or second weeks of September. Choose half ripened shoots of the current year not over-strong, cutting them into 6-inch lengths, be careful to cut squarely across below a joint, from here roots are formed, if the cut is made half way between two joints, the stem decays right up to the joint, and the cutting fails to root. Dibble them firmly into sandy soil in a 6-inch pot, or if a quantity are required place a 1-inch layer of sandy soil in a shallow frame, making it quite firm, sprinkling a little sand on the surface to be carried down with the dibber.

on this sand at the bottom of the hole the cutting rests. Roots form quicker in sand than soil. Give a gentle watering to settle the sand and soil about the cuttings firmly, as without the base of each is quite firm they cannot make roots. Plunge the pot in ashes up to the rim in a cold frame, give shade when required if the sun is powerful, and keep the frame close, with the exception of admitting a little air for an hour each day to dissipate condensed moisture. By the following May they ought to be nicely rooted and be ready to plant out where required. It is not necessary to provide rich soil for any kind of Ceanothus; they grow freely in any garden soil, provided abundance of water is given the roots during the summer; too gross a growth is liable to injury during the winter from frost.—S. P.

4509.—**Outtinge of "Geranium," Pansies, &c.**—Cuttings of Zonal Pelargoniums should have been taken in August and rooted in the open ground, but the continuous drought has prevented my plants from producing wood, so that I shall have to put up the old plants and take most of my cuttings early in the spring. Pansies have suffered even more severely, but with a little wet weather will doubtless shoot out young growth. When this appears take up the old plants and pull them to pieces, using each shoot with a few roots attached as a young plant. These rooted shoots are more certain than cuttings, although the latter may be struck at any time from now up to the commencement of the winter frosts.—A. C. BUTLER.

—For "Ceriniums" the beginning of August is the best time, in my opinion, inserting the outtings in the open ground; but they may be got in, in pots or boxes, up to the end of this month (but the sooner the better), placing them in a half-shaded spot in the open until cold or wet weather sets in, then house. Cuttings of Pansies may be struck in a cool-frame, or under a handlight, in July, August, and September, or in March on a gentle hot-bed. Those of Gooseberries and Box may be inserted early next month in the open ground.—B. C. R.

—I have before given advice on this point. Now is the time to take cuttings of Pansies, and the work should not be delayed. Select short, stubby side shoots, which should have, if possible, what is called a heel, as they root much better under these conditions. Make up a little bed for them in a cold frame. Any old light will do, as they merely want protection for a time. But even this treatment is not essential, only there will be far fewer failures than without the light. When the cuttings are put in give a gentle watering through a fine-rose watering-pot. In the spring they may be lifted and planted out in the positions they are to adorn. Remember that Pansies require a deep, cool, moist soil. "Ceriniums" may be struck from well-ripened cuttings in the open if the work is done at once, as we may in a week or two's time get an early frost, but the soil at present is warm. It would, perhaps, as the season is getting so late, be better to put the cuttings in pots, inserting them round the side of 5-inch size and placing them in the greenhouse. They will root readily, and ordinary garden soil will suffice. During the winter keep them on the dry side, free from decaying weeds, and before planting out pot them on so as to get good plants for the garden.—C. T.

4507.—**Treatment of Lilies.**—You may plant the Lilies in the autumn, as thousands of bulbs of *L. auratum* are purchased about this time at auction sales, and put out in the garden. You may keep your bulbs in pots until the spring, but it would be better to get rid of them at once. I much prefer Lilies in the open than in pots, and if you have Rhododendron beds, or of American plants, such a spot would suit the Lilies to perfection. They go well with evergreen shrubs, and the rising shoots in spring are protected from late frosts, whilst the flowers of both Lilies gain in contrast with the shrub foliage. *L. lancifolium*, or *L. speciosum* as it is also called, is very pretty when thus associated. Plant carefully in well-prepared soil, and if the position is in a border, see that the steeple is good deep loam. When they have been in this place for a year, apply a top-dressing of manure, but this latter should not be dug in the soil. Lilies do not appreciate it greatly in actual contact with the bulbs.—C. T.

FERNS.

DAVALLIAS.

THIS genus, established just a hundred years ago by Sir James Edward Smith, the first President of the Linnean Society, represents a few beautiful plants, and they are very useful for general decorative purposes, either grown in pots, or when placed in baskets and hung up to form ornament in this way. As a family it has been considerably extended by the addition of many species which other authors class as *Leucostogies*, *Ilumata*, *Acrophorus*, *Odoatosoria*, and some others; but the true *Davallias* only are included here, and they are distinguished by having the *Indusium* attached by its base and sides, and buried in the substance of the frond—a little pitcher-shaped chest enclosing the spores. These plants are all creepers or of sub-erect habit, with mostly firm and shining green fronds; and they are deservedly popular, from the stout rhizomes which are clothed with large and stout chaffy scales, and which give them the appearance of hare's feet. They are popularly known as Hare's-foot Ferns. These plants require to have their fronds pegged down upon the surface of a good turfy peat soil, being careful not to bury them beneath the surface. Indeed, we once saw a collection of these plants entirely destroyed by being potted in this manner, so that we particularly wish to call attention to the fact, for if their rhizomes are buried in the soil it has a very injurious effect upon them. As before remarked, they make handsome plants when grown in hanging-baskets, whilst the cut fronds of many of the kinds are charming when used as the background or framework for a shoulder spray, and for the decoration of ladies' hair for an evening party; but in the latter case small fronds must be chosen, whilst others of larger size are very useful for wreath-making or similar purposes. They require a larger surface space than depth of soil, and their rhizomes should be moderately raised above the surface in a little ridge or mound, and be pegged down to the surface, and by this means remarks my friend "Jane Hudson" will, I hope, endeavour to see her way to growing some of these Ferns well. Some of the very best kinds I here briefly describe—

D. BULLATA.—This is a particularly interesting plant, and one that is easily recognised, for now, at this season of the year, the fronds begin to turn yellow and fall away, until in the autumn they are all fallen, leaving nothing but a mass of bright-red rhizomes, and which are very appropriately named *Squirrel's Legs*; but in the spring time, when the young fronds are unfolding, it is one of the most charming plants that I know. The fronds are some 6 inches to 9 inches long, or more, and they are about 4 inches to 6 inches across. Small fronds of this plant are well suited for personal decoration, or for cutting to mix with cut-flowers, and it makes a fine plant for climbing over and up any place; but it requires to be so set that it does not remain in sight during the winter season, because at this time it is devoid of all its fronds, nothing being left but the bare rhizome during the winter, so when the plant is dormant it should be kept in a cooler house, and the plant be kept moderately moist. Much damage I have seen come to this species through being kept too hot and too dry.

D. CANARIENSIS is the typical plant known as the Hare's-foot Fern, and it is a plant that is found in the South of Europe, in Madeira, and the Canary Islands, so that it naturally comes to be a cool greenhouse plant; but I have never seen this *Davallia* so fine as when growing in a nice warm greenhouse; it has fronds some 12 inches or 18 inches broad and much divided, and of a rich deep green.

D. DISSECTA (No. 1) of the set sent by "J. H."—It is a plant that resembles "Cacode" very much, but it is stronger in its growth, and it has stouter rhizomes, and these are

coated with large pale-brown chaffy scales; it, moreover, is an evergreen plant and retains its fronds in all their verdure through the winter months, requiring the heat of the stove.

D. FIDUCIARIA (here figured) and its variety *plumosa* are amongst the most beautiful of any known Ferns; but coming from the Fiji Islands, of course, they are stove plants. Your No. 4 is either the species or its variety *plumosa*; the rhizomes are small, the fronds large and broad, finely cut and divided, and rich deep-green in colour.

D. FALLIDA, better known in gardens by the name of *D. Mooreana*, is a thoroughly distinct plant; the rhizomes are somewhat underground, and it has large and spreading fronds which are very distinct and very elegant. I have found that it stands well when cut and put with out flowers. This is No. 3 of "Jane Hudson's" specimens. I cannot make out No. 2; it is too small and the fronds are not fertile, neither does she give me a bit of the rhizome to look at.

J. J.

4180.—Plants for winter.—Every one, I think, is of the same opinion as yourself. We do not want winter to destroy the present beautiful aspect of the garden but unfortunately we cannot hinder the arrival of frosts. Enjoy the flowers whilst there is time. Your question



Davallia filix-foemina.

is somewhat foolish. Of course you cannot keep the garden as gay in winter as in summer, and those who love flowers seek the greenhouse or the conservatory in the winter months to enjoy plants. All you can do is to hope that frosts will keep off until late in the year, and get in some time in September plenty of bulbs—White Aconites, Snowdrops, Crocuses, and other early flowers. If you have such things as the *Polygonum cuspidatum* in the garden, leave the stems, as their polished nut-brown colour is very pleasing in the "dark" months of the year. The fragrant *Coltsfoot* will scent the garden in December, the *Hellebore* flower if the weather is at all kind, and the *Winter Cherry* (*Physalis Alkekengi*) will make a gay patch of colour with its crimson-coloured calyxes that hang like little Chinese lanterns on the leafless shoots. The best *Hellebore* is major; but one does not often get the plants in bloom in December. You can also plant the form *atitollis* which blooms earlier. To keep the flowers pure in colour, put over each clump a bauble of light, to protect them from rains and frosts.—C. T.

4518.—Medlar and Rose.—The first of these is a fast grower during the first ten or twelve years, after this it seems to grow less quickly, although in reality it is not so. The rate of growth being spread over a more numerous body of branches. The thick lignified

you mention from a cesspool is far too strong for Rosee, whether established or not, unless it be freely diluted. Strong doses of manure do no good, and you cannot possibly apply enough to reach more than a few of their roots; and this is oftentimes fatal. Reduce the sewage, and then apply liberally enough to reach the bulk of the Rose roots. Your fear of over-manuring is useful, and not enough practised by the majority of amateurs.—P. U.

—The Medlar is not a quick-growing tree, but it is most picturesque, and when small is very charming on the outskirts of a lawn, especially in early summer, as then the branches are studded with the pure white flowers. Certainly do not use the offensive stuff you write about. You will kill your Roses, and such material, if used at all, which is not necessary, must be greatly diluted. I know a splendid garden of Roses where comparatively little manuring is done. The soil is excellent, and suitable top-dressings are given in spring; but the beds are not soaked with nasty liquids that make the garden positively noxious. Fancy soaking the beds with such muck! The fragrance of the flowers is destroyed, and no one who respects his nose could go within yards of the plants. This is not gardening.—C. T.

—The Medlar is the slowest grower of all fruit-trees, and never attains the proportions of a large tree. It only passes under the designation of a tree by courtesy; it certainly has no rightful claim to it. There is no doubt but that the thick liquid from your cesspool is too strong to be given to any plant or tree. I should say for Roses it wants diluting with six times its bulk. In that state it may be given once a week in dry weather all the summer.—J. C. C.

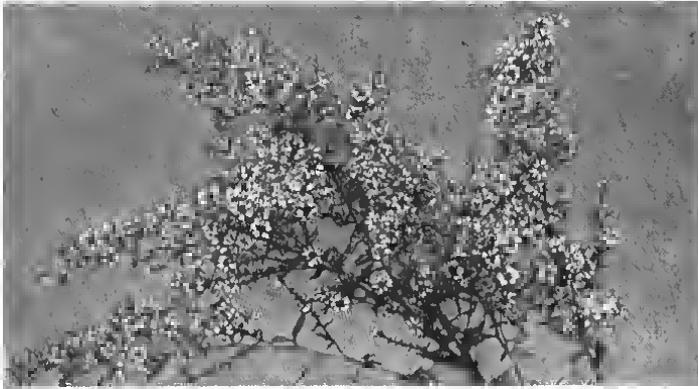
ORCHIDS.

BARKERIAS.

I AM asked by "John Foden" to say a few words about these plants, which he calls *Epidendrums*: Now I am somewhat old-fashioned, and I like to keep to the old name of a genus until I can see some cause for altering, and in the present instance I think the genus *Epidendrum* is cumbersome enough. "J. F." appears to have been growing his plant of *B. Skinneri* quite right and well, and I have no doubt if he still continues to treat it in a rational manner that he will be rewarded with a fine display of bloom about the middle of November, for I do not think that there will be any plants this season which will be slow in sending up their spikes of bloom; but in some seasons I have seen that species in flower at the end of the month of March; but, of course, as these flowers last for several weeks in full beauty when treated properly, such a plant may have opened in the early part of February. To treat these plants properly they must be grown in a cool-house, but they should not be subjected to the same conditions as the *Odontoglossums*, for these *Orchids* like the shade, but *Barkerias*, on the contrary, enjoy bright sunshine, and they like to be kept always during the growing season in a thoroughly wet condition. They are plants too that like to have an abundance of air by both day and night, yet still the atmosphere must always be kept properly charged with moisture, for these plants, although they make thick and fleshy roots, they yet cannot be bound best upon a bare block of wood. Consequently, a tub of water or some such accommodation should always be kept handy, so that they be soaked down and dipped conveniently at any minute in the day, and hung up again directly to drain, and this is the system to grow these plants well, and to continue them on in a healthy condition for years. Do not upon any account experiment with pot culture, for under this routine you are sure to have a miserable failure, for the plants get small by degrees and miserably less. The following are the best of the species and varieties which I have grown myself, and seen others grow, and all are exceedingly beautiful, well deserving the careful attention of every grower of *Orchids*.

B. ELEGANS.—This plant, although found first by the collector, Ross, in 1837, it was nearly twenty years afterwards before it became common in gardens, and even at the present time it is not so common as it was in Mr. Sander's vast

emporium, where almost any showy species of Orchid can be found, it is rare in this country. The stems are slender, about a foot long; the leaves are deciduous, falling away during the resting season, as they all do, and during this time they require to be kept cool, and a great deal drier, but they will require to be dipped about three times in the course of the week to keep the stems from shriveling. The flowers are borne in a somewhat loose raceme, and measure nearly 2 inches across, the sepals end



Lilac Starwort (*Aster elegans*).

petals spreading, white suffaced with rosy-lilac, the large lip being white, with a large blotch of rich and bright rosy-orange near the point. This beautiful plant is the original upon which the genus was founded; but there is another plant which was introduced by Mr. Sander, of St. Albans, a few years ago, and called

B. BARKERIOLA, but it is very nearly allied to it, and probably only a mountain form of the same plant.

B. CYCLOTELLA.—This is another truly beautiful plant. The flowers are as broad as *B. elegans*, and are wholly of a deep-magenta, with a white centre to the lip.

B. LINDLEYANA is a free growing plant, having bright rosy-purple flowers, and a white disc. *Lindleyana Centensis* is a variety with flowers of a much deeper colour. It is also a very free-flowering sort, but the species is very variable in colour.

B. SKINNERI—It is nearly sixty years ago since this plant was first found by the gentleman whose name it bears, and it is one of the most beautiful of winter-flowering Orchids, usually blooming in the first months of the year, the flowers being deep purplish-rose colour, with some orange petals on the disc.

B. SPECTABILIS—It is just turned fifty years ago since this beautiful kind first flowered in this country. In growth it is similar to the other species, and it produces flowers about 3 inches or more across, and these are rosy-lilac, the lip nearly white at the base, dotted with bright-red. It blooms during the summer months, and is a very desirable plant.

MATT. BRAMBLE.

4478.—*Agapanthus umbellatus albus*.

—I see no reason whatever why this plant should not submit to moderately early forcing if they are properly prepared, by which I mean given a good rest before introduced into a warm house. The end of January is probably as early as it is safe to begin forcing, and no doubt it will respond to fire heat sooner the second year than the first, as it would die down earlier and so secure a longer rest and be ready for forcing in a corresponding time. Your experience proves that both the blue and white variety require the same treatment, and that it is wrong to keep the plants altogether without water during the winter. If your plant wants repotting let it be done as soon as the flowers fade. It will then be well established in the soil when the time comes to force it again.—J. C. C.

4479.—**Gas-lime and wireworms**.—You may safely put fifteen or sixteen cart-loads of gas-lime on two acres of ground. I should advise it being applied very shortly now; spread and let it lie on the ground for three or four weeks, then work it in, and do not sow or plant anything before next March.—E. C. R.

OUTDOOR PLANTS.

MICHAELMAS DAISIES (ASTERS).

This genus, as is well known, is one of the most puzzling amongst hardy flowers to the botanist as well as the gardener. Hardly two collections are named alike, and something like uniformity is very desirable, seeing that new seedlings are being raised annually by our growers, and there is now little doubt that

Aster hybridus as freely as *Aquilegiae*. When the greater part of our autumn flowers begin to show the woe and yellow leaf, Michaelmas Daisies are looking their very best, and even long after the early frosts have blackened the Japanese Windflowers and the Dahlias, Asters stand out almost alone bright and cheerful, with their varied starry flowers and graceful arching stems. Beginning to bloom as they do early in July they carry us well into November. It is very remarkable that comparatively little notice is taken of the rapid advance Asters are making in size and colour of flower. In many old gardens you still see the very worst and poorest of the *A. Novi-Belgi* forms, with which our later acquisitions are not to be compared. Planted in groups amongst Rhododendrons and other dwarf shrubs is no doubt the way to see Asters at their best. Under such conditions they require no stakes, and little care; they take up no space that is otherwise wanted, and all through the autumn and early winter they are very refreshing. What could be better than masses of such species as *A. cordifolius*, *Shortii*, *Drummondii*, and *agittifolius* in our woodlands, or even amongst our choice shrubs. While the stronger varieties of *Novi-Belgi*, such as *Robert Parker*, *Archerfield*, *Harpur Crewe*, *Apollo*, *formosissimus*, *Purity*, and *floribundus*, might be grouped with effect amongst our Rhododendrons and coarser growing shrubs? Their habits are so varied and their flowers so beautiful and changing that there is hardly a limit to what may be done in the autumn garden with Michaelmas Daisies, while the delicately elegant branches of the varieties of *A. cordifolius* *Photograph*, *Diana*, and *elegans* remind one more of a clond than a bunch of Daisies. Amongst the Himalayan species two stand out prominently, the one an early flowerer (*A. diplostephioides*) and the other late (*A. Thomsoni*) (see page 399). This latter is one of the most distinct, and, to me, most beautiful and useful of the Himalayan Asters in cultivation. It rarely exceeds a couple of feet in height, is of a neat compact habit, the large pale-lilac flowers being produced in great abundance on strong plants. The stems are very leafy, the leaves broad and distinctly toothed, and of a pale green. It begins flowering early in August, and continues until October. It is one of the few Asters that will not stand division. The best way to increase it is from seeds or cuttings of the young shoots in spring. *A. diplostephioides*, re-introduced by Kew last year, is a giant amongst Asters. The flowers are solitary on long straggling stems, 4 inches in diameter, rich bright lilac purple, with a golden disc. *A. Schreyeri* is a dwarf trailing species more suitable for the rockery, and readily increased by stolons. Of the European species, *Amellus* and

acris are by far the most useful in the garden. This latter species is a most variable *Aster*. *A. Amellus* is also variable, the varieties in the garden being called *major*, *besserabians*, and *smelloides*; but I confess to seeing little more varietal difference than might be readily got from a packet of seed. By this we it may, *Amellus* is a fine *Aster*, and so bright and neat that we can hardly have too much of it. The great centre of the Michaelmas Daisies is North America, and to this group belong most of those grown in the garden. Perhaps no less than two-thirds of our cultivated Asters may be traced to *Novi-Belgi* pure and simple, or to hybrids between that species and *A. laevis*, another remarkably beautiful and extremely graceful species, of which there are two or three distinct varieties. To *Novi-Belgi* belong the named varieties known as *Robert Parker*, *Andromeda*, *Harpur-Crewe*, *Cellops*, *densus*, *Flora*, &c.; indeed there are no less than between forty and fifty distinct garden varieties, among which are some of our loveliest autumn flowers. *A. Nova-Anglia*, with its robust habit and large rose and purple flowers, stands head and shoulders above all the other species, a grand border plant and a free bloomer. *A. patens*, *patinus*, *polyphyllus*, *salicifolius*, *turbinellus*, *paniculatus*, *tataricus*, *umbellatus*, *multiflorus*, &c., are all worth a place in the garden, while amongst the dwarf kinds, *A. scaberrimus*, *ericoides*, *Lindleyanus*, *versicolor*, *vimineus*, *spectabilis*, *corymbosus*, *diffusus* var. *horizontalis*, *levigatus*, *nanus*, &c., stand out prominently. There is plenty of scope for selection, and so they are all easily grown in any good garden soil, they will be found most desirable additions to the autumn flower garden. All the species may be raised from seed; the majority are readily divided in autumn or spring, and most of them may be increased from cuttings taken off as growth begins in spring. K.

4524.—Transplanting White Rockets.

—The proper thing to do is to plant them out in the positions they are to be beautiful, and this should be done when the weather is not too dry, but before frosts occur. Rockets require frequent transplanting, and plants two years old should be divided. The majority of hardy plants do not like disturbance at the root, and the Rockets are an exception to the rule. The soil for them should be fairly moist, well prepared, and if this treatment cannot be given, they are very unsatisfactory.—O. T.

—The single Rocket is so hardy that you may transplant them at any time. A few of the plants set out now in an open place will do better than those that are left crowded, and will probably give you all the flowers you want. Seedling Rockets are not very choice subjects, and as you do not appear to know what they are, I advise you not to burden yourself with a great number of plants. It will be better to devote the space to something else.—J. C. C.

—I find the best time to transplant the Double White Rocket is immediately after flowering, breaking the roots up into moderate sized pieces, and setting them out 15 inches to 18 inches apart; but plants raised from seeds would be stouter, and not so valuable, and if not too crowded might be thinned out now—better now than wait till spring.—E. H.

4505.—**Manuring ground**.—The only artificial manure (if it can be so termed) that should be applied in the autumn is lime, which is almost equally beneficial, applied in moderation, to either light or heavy, or poor or rich land. Spread it thinly over the surface, let it lie two or three weeks, and then dig it in. Stable or farmyard-manure is, as a rule, best dug or trenched into the ground in the autumn, while nearly all the numerous artificials, simple and compound, should be applied in the spring or summer, just as the new growth is commencing, and in some cases again afterwards a short time before the plant has to make any special effort. For general outdoor purposes I know of nothing to equal Thomeon's Viper and plant-manure, though for certain crops the silicate is also excellent.—E. O. R.

—Artificial manures are best used after the crops are planted, or at the time of planting. If dug in during the winter a large percentage will be washed out before the plants could use them.—E. H.

4501.—**Nitrate of soda**.—The soda may be applied in the state in which you receive it, and from early spring until late in summer. It is, however, best to apply it in showery weather.

If you want to permanently benefit your lawn, you had better lay out your money on rotten manure or good earth, and give it a dressing early in the month of November. Such an application will do ten times more good than any of the forcing manures like that to which you refer, as they are quickly exhausted. I dealt with a cricket-ground about this time last year in the way I suggest where the sward had nearly disappeared, owing to the constant play, and it quite recovered by the spring.—J. C. C.

— The proper time to apply this excellent stimulant is during the spring or early summer, just before the young growth commences, or, in the case of a lawn, at any time up to the middle or end of August; it is too late now. The right way to apply it is either in the solid form, just before rain, crushing it finely first, and then sprinkling it evenly over the ground at the rate of 2 lb. or 3 lb. per rod; in dry weather it should be dissolved in water at the rate of 1 oz. to each gallon, and the lawn be thoroughly soaked with the liquid. It takes some little time to dissolve perfectly in cold water.—B. C. R.

— The easiest way of applying nitrate of soda is to sprinkle it evenly over the lawn in showery weather, or just before rain is expected. The present is a good season to use, as after the scorching summer the turf needs support.—E. H.

4520.—**Hiding a block paling**—There are many plants suitable for the purpose, and we should try a Gloire de Dijon Rose which would look remarkably well in such a position. The heavy, fragrant flowers would be in fine contrast. Clematis Jackman is another good climber for the purpose, or C. montana, which produces a wealth of white flowers in spring. Plant also Jasminum nudiflorum, which is studded with yellow flowers in the winter and spring months. A few Ivies, good kinds, such as Emerald Gem, Kerria japonica fl. pl., the Jew's Mallow (which has rich-orange double flowers), Honoyonokles, Pyracantha, or Fiery Thorn, and the Wistaria. There is no want of subjects, and you may make a selection from the above named. I have not mentioned Virginian Creepers, as they are planted every where. One gets tired of them, even of the useful Ampelopsis Veitchii. The position is too shady for the Rose. Try the Ivies, and I have seen the yellow-flowered Clematis succeed well in such a spot. The soil must be well prepared, or they will grow in poor stuff, riddled with the roots of the trees, and keep the soil moist for a time. We may have plenty of dry weather yet.—C. T.

— Why not paint the paling with an enviable green colour first, and plant overgreen Privet, Irish Ivy, or common Laurel, against it? The latter would perhaps grow better under the trees if the soil is at all heavy. The chief point in planting either of these subjects is to properly prepare the soil first by digging it at least 2 feet deep and adding plenty of manure if the soil is poor. Should the first be dry after planting give abundance of water to the roots of the newly planted shrubs, as under the trees they would suffer otherwise. It is useless to plant any of the usual quick growing climbing plants, like Convolvulus for instance; the position is not at all suitable.—S. P.

— There is nothing better than Ivy. Strain a few wires along, as Ivy will not cling well to black pallings.—E. H.

— Irish Ivy and Virginian Creeper would soon cover up the ugliness. Neither of these seem to object to being ever shadowed.—A. G. BURLING.

4471.—**Wood ashes.**—Why not make them yourself? It is only necessary to make a fire, and when well started, put on a lot of any rough wood, let it get well alight, and then partly cover it with weeds, rough bits of turf, or garden refuse of almost any kind, just to check too rapid combustion. In a garden of any size a fire of this kind ought to be made frequently, or even kept going almost constantly; for one thing it is by far the best way of getting rid of all the rubbish, and for another the products are invaluable not only for potting purposes, but as a top-dressing for many vegetable crops in seed-beds, &c. Such burnt material is equal in value to any artificial manure, especially for Turnips, Carrots, Onions, Potatoes, and other root crops.—B. C. R.

ROSES.

4510.—**Roses for button-holts.**—Duo de Rohan and Prince Camille de Rohan are undoubtedly the two best growers amongst those of a dark velvety colour, but the forms of the flower-huds are hardly so suitable for your purpose as some others. Regarded in the latter light Emperor and Emprise are the best, but they are poor doers, being much subject to mildew. On the whole, I think the two first named and General Jacqueminot and Chariss Lefehvre will suit you admirably as dwarf plants. You must plant them in good soil, and only prune moderately.—J. C. C.

— I would choose the following four varieties as being the best dark velvety Roses for coat-flowers under glass: Prince O. de Rohan, General Jacqueminot, W. F. Bennett, and Fisher Holmes.—P. U.

4504.—**Rosses from cuttings.**—Cuttings of all kinds may be rooted in bottles of water. Small bottles are best that will hold only one or two cuttings, which should be made of firm wood, and taken off, if convenient, with a bit of older wood. The bottles should be hung in a light position. They may be hung against a wall in the open air if cuttings are put in now. When water evaporates the bottles must be filled up.—E. H.

— I do not see why you should wish to root Roses in bottles of water, unless as an experiment. However, they may be rooted in this way. Choose young growth about half ripened, and use a glass bottle with clear rain water. Place a few pieces of charcoal in the water to prevent putrefaction, or the young roots will commence to rot off just as you were about to pot them up. An ordinary living room or greenhouse will do very well to keep the bottles in; but Roses are rooted much more safely and satisfactorily in a sandy soil compost.—P. U.

— Although Roses strike fairly well in bottles of water in heat it is a much more certain method of propagating them in a cold frame, or even out-of-doors entirely they strike readily. The point is to have cuttings of the right kind; those that are soft and unripe are not suitable. Shoots of the current season's growth in a half-ripened state, cut into 6 inch

lengths, strike root easily if not square below a joint, and inserted firmly in sandy soil. It is most important, however, that the soil at the base be made quite firm; if not, roots cannot form. If a frame is to be used no time should be lost in putting in the cuttings. A layer of soil, 4 inches thick, on a bed of coal-ashes, made firm, affords a sufficient rooting space. Give a good watering afterwards, to settle the soil about the cuttings. Keep the light bottles except for an hour occasionally; it should be

tilted a little to dissipate condensed moisture. If the sun is powerful shade the cuttings from bright sun to prevent their flagging. If the convenience of a cold-frame does not exist a good strike is possible out-of-doors. Choose a sheltered border; chop out a trench, 4 inches deep; scatter some sand along the bottom of the trench; make the cuttings 8 inches long, and plant them firmly in the trench 3 inches apart; tread the soil firmly about them, and mulch the surface between the rows with leaves, coal-ashes, or Cocoa-nut-fibre refuse to prevent the frost lifting the cuttings out of the ground. The end of September is early enough for this plan.—S. P.

4516.—**Rosses in beds.**—"Inquirer" should not touch his plants with the knife until early next spring. A full description of pruning, more so than could be incorporated in the reply to a single question, will appear in these pages in due season. The best plan will be for "Inquirer" to wait until then, carefully persevere it, and pay great attention as to whether his sorts are suitable for pegging down or not. In the meantime he may mulch them with stable manure as soon as winter approaches.—P. U.

— Much depends upon what the Roses are. Hybrid Perpetuale may be cut back at the end of April to within 9 inches of the ground, all ugly sprigs and very old wood being removed. Teas should not be cut back in the same way; but the long straggling shoots may be shortened in the autumn, and unsightly branches removed.—A. G. BURLING.

4525.—**Ross Gloire Lyonnaise.**—By no means out the shoots back, but leave them to peg down next year in the place of those pegged down this year. I have treated it so for six years, and now the plants have shoots 6 feet long for another year. It never fails to send up an abundance of them, and they sometimes flower at their tips. It is not a great autumn-blooming Rose like the true Teas are.—A. H.

— Your question as to whether you are letting your plant make too much growth depends on the space available. If there are uncovered spaces after you have allowed a width of 9 inches for each branch you may peg the new-made shoots down at once. If there is not so much room available, and there are no signs of flowers upon the old wood, you may cut out the latter at once and peg the other down in its place. Under any circumstances the old wood should be cut out in winter when there are young shoots to take its place, always assuming that there is a sufficient number of the latter to cover the surface. Although Gloire Lyonnaise is a beautiful Rose, I think it is more suitable for covering a pillar than for the purpose you are using it. Should you be writing again would you be good enough to say if you find the flowers have a pendent habit when the growth is pegged down, as I am interested in this form of Rose-growing?—J. C. C.

— "Micawber" is treating this Rose correctly. By all means let him encourage the long upright shoots breaking out from the base. These must be pegged down next year in place of those which were pegged down and bloomed this summer. It is best to cut away the old wood which has already flowered, and so throw more strength into the new shoots. The old wood would have to be removed next spring, if not done now, and it is useless to allow it to absorb so much of the plant's energies. Besides, you can manure and work the ground during this autumn, if such wood is cut away now.—P. U.

4520.—**Treatment of Rosses.**—From your description you are evidently treating the plants very well, and I heartily wish you the success you deserve next spring. Keep the plants rather dry at the roots for a few weeks, and admit as much light and air as you possibly can. This will conduce to better ripening of their wood. No artificial heat at present. Prune early in January. You ask in what manner, and do not give any names of the varieties. Presuming that they are all strong climbers, prune very slightly, merely cutting away immature tips to long growths, and any weakly or extra tips that may exist.—P. U.



OUR READERS' ILLUSTRATIONS: ASLEY THOMPSON. Engraved for GARDENING ILLUSTRATED from a photograph sent by Miss E. Wolley Dod, Edge Hall, Malpas, Cheshire. (See p. 395.)

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4514.—**Unhealthy Roses.**—Your Roses are suffering from the most dreaded of all pests—mildew. The cause of this fungoid disease is sudden changes in the temperature or drought at the roots; or perhaps this season it is both combined. The prevention is difficult in the open ground, where we are almost entirely at the mercy of the elements; but under glass it is not so difficult. Frequent syringing with a weak solution of any insecticide containing a little paraffin, at the rate of a tablespoonful to a gallon of the solution, also a little flowers of sulphur, will kill it; but the whole mixture must be kept well stirred at the time of application. If practicable, remove the cause as much as possible, or no permanent benefit can accrue. Mildew is generally more or less prevalent in the autumn, when cold nights and mornings are followed by hot and bright days.

—P. U.

—Your Roses are afflicted with mildew, canned, I have no doubt, through the want of water at the roots. A cheap and very effectual remedy for it is dust from a public highway. If the bushes are liberally sprinkled with it the mildew will disappear, at least for a time, but a good root watering is also necessary. You must understand that I do not claim any special value for road dust in this direction, further than it possesses the same power as any other material that is made up of minute particles, by drying up the fungoid growth of which mildew is composed. Perfectly dry dusty peat, if shaken on the leaves, has the same effect. It is well known that sulphur will destroy mildew, but that is a remedy that is more costly than road dust when there are many plants to be dealt with.—J. C. C.

—The plants are attacked by mildew, which is far too common among Roses this season, owing, of course, to the excessively dry weather. If they had been kept well watered with liquid manure at the roots, and frequently syringed overhead, this would probably not have occurred, and you may have some trouble in subduing it now. The foliage may be thickly sprinkled with sulphur, but a better remedy still is the Mildewmors advertised in GARDENING, which will soon get rid of it.—B. C. R.

4530.—**Management of pot-Roses.**—You ought to have put a thick shade on the glass over your Roses; indeed, the whole of the roof should have been shaded in such weather as we have had this year. It was quite right to place the plants out-of-doors, but as they did not improve I am afraid the roots did not get all the water they wanted. If the plants want repotting you may do it now, using for a compost good turfy loam and a little sand mixed with it. When repotted place them in the house again.—J. C. C.

—Here is a short outline of the routine for a cool-house such as you describe. Procure your plants as soon as possible, if from the open ground. Pot them into the following compost. Loam, one-third; leaf-soil and manure, one-third; the remainder being made up of any old and well-decayed refuse from a rubbish-heap. Drain the pots well, and make the soil firm around the roots. Now stand them on the north side of a wall or hedge; or, better still, half plunge them in a cool pit. By January they may be pruned, bearing in mind that different classes and varieties need pruning in different manners, and which have frequently been described in these pages. Let them come on as steadily as possible, and when the temperature rises to the heights you mention, or even before that, give your glass a slight shading with some wash. You must keep them clear from insects and also maintain a fairly even temperature; say 40 degs. to 50 degs. during the winter, and gradually rising to 60 degs. and 70 degs. through the summer months. While in growth plenty of water must be afforded them, and as the roots permeate the soil, a few applications of weak liquid manure will be very beneficial. By the end of August it is well to rest the plants somewhat, and this can be secured by withholding water and allowing more air, or else by placing the plants in the open air; I prefer the latter plan.—P. U.

4490.—**Fashion flower in fruit.**—Such a crop of fruit is not at all uncommon in a warm dry season. The fruits are useless as food, and the only thing I suggest is to let them get quite ripe and sell them, which some of the wholesale seed merchants might give a moderate price for.—B. C. R.

FRUIT.

SOME GOOD AUTUMN PEARS.

MANY excellent kinds of Pears ripen during the autumn, and it is difficult to make a small selection. Marie Louise (Fig. 1), an admirable kind either for standards or on walls, is too well known to need a word either of description or recommendation. I may say, however, that its season may be greatly prolonged by not picking all the fruit at once and the same time, but a portion only at intervals of a week or ten days.

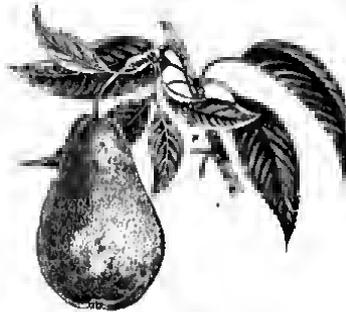


Fig. 1.—Pear "Marie Louise."

That first gathered will ripen proportionally earlier than the last. Duohesso d'Angonlomo (Fig. 2), one of the largest of Pears, is handsome both in shape and appearance. In warm seasons the flesh is buttery and melting, but frequently it is cross-grained and gritty. It is a noble exhibition Pear, and to ensure its always being good it should be grown on a south or west wall. It is a free bearer in any soil and aspect. Red Doyonné is a well-known little Pear that is always good. I find it succeed admirably grown in the form of bushes, well ploched in, and at the same time fed liberally with manure or manure-water. The pinching checks the growth and makes it fruitful, whilst the manuring increases the size and quality of the fruit. Louise Bonne of Jersey is a Pear well known to most fruit-growers, but amateurs and cottagers do not grow it nearly so extensively as they should do. It is one of the surest of fruiters, either as a standard or on walls, and in quality is all that can be desired, and in a good fruit-room it will keep a month in usable condition. Durondean is one of the most beautiful of all Pears, the skin being a shining russet, streaked with deep red on the side next the sun, whilst the shaded side is, when fully ripe, a pale yellow; the flesh is most delicious, and the tree is an abundant bearer. It is worthy of a wall and the most liberal culture. Calabasse Tougard is also a large, handsome-looking Pear of excellent quality; it is one of the few kinds that ripen best on the trees, but it requires to be used as soon as it is gathered, for it soon rots deceptively at the core; if gathered before it is ripe it rots before it becomes in any way usable, except for stewing. H.

4506.—**Planting Strawberries.**—Make your bed and put out the plants at once, without the loss of a day. Had they been got in in July, just before the rain, you would have had double or treble the crop next summer that any plants set out now are likely to produce. Still, if extra strong runners, with a ball of earth to each, or, better still, plants established in small pots, can be had and planted at once, a fair crop of fine fruits should result next season. A good distance for most varieties, in ordinary soil, is 18 inches apart, with a distance of 2 feet between the rows. As regards the best kinds, British Queen is the finest flavoured of all, and if it can be grown should certainly be included, but it does not thrive everywhere. Falling this, Dr. Hogg is an excellent substitute, and for the two others President and Keen's Seedling will be about the best.—B. C. R.

—The best time to put out Strawberry plants is early in August. The object of getting them out as soon as possible after the layers are rooted is to have them established and grown into good plants before the winter, so that they

will be strong enough to bear a crop of fruit the following season. Light gravelly soil does not suit the Strawberry, but I have grown on such soils splendid crops every year by treating the Strawberry as an annual. The young plants set out this year in August would bear a crop the following season. New runners would be layered in small pots for a new bed, and the old plants then were destroyed. The ground is trenched and manured well, the plants being set out 2 feet apart. The best three sorts are Keen's Seedling, President, and British Queen.—J. D. E.

—No time should be lost in making a new plantation of Strawberries. If deferred much later the chances of a crop of fruit is very much diminished, whereas if stout plants are put out during the current month a fair quantity of fruit is assured. The best varieties to grow are Vicomtesse Hericart du Thury, Sir Joseph Paxton, and Waterloo. Those ripen in the order named, are all good bearers, and of good quality also. What the first-named loses in size of its fruit is made up in quantity, being a most prolific bearing sort. The land should be deeply dug, or, what is better, trenched 18 inches deep, and should also be well manured. The rows ought not to be less than 2 feet apart, and if 2 feet 6 inches they would be all the better, especially where much foliage is made. The plants will succeed very well 2 feet from each other, in some districts but 16 inches is given; but this is where but a thin crop of foliage is obtained. The soil varies very much in different parts, having a direct influence on the foliage crop, that it is necessary to look around and see what are the state of existing crops in this respect; but the distance named between the rows is sufficient for all purposes.—S. P.

—If very early Strawberries, combined with size, are required, plant Noble. For succession plant Sir J. Paxton and President, and for late use Elton Pine. Plant now, the sooner the better if the ground is in proper condition. Plant 2 feet apart each way.—E. H.

4500.—**Vines in a cool-house.**—Vines may be grown in a cool-house, but if there are facilities for making a border it will be better to plant them out. I have seen Vines carried on for a number of years in large pots and tubs with the aid of artificial manures. And for a small house where there is no convenience for planting out, a Vine in a pot of the largest size will last a number of years; but I think the chief value of pot-Vines consists in their adaptability for early forcing, and so saving the permanent Vines.—E. H.

—No; the Vines will grow far better, as well as require less care and labour in watering, &c., if planted out in a well drained border of good loamy soil than in pots. At any rate, for a few years, or unless they have to cover a considerable space, it is not, however necessary to afford two or three Vines so large and wide a border as is usually supposed, and a border 3 feet or 4 feet in width, and 2½ feet in depth, including drainage, will afford quite enough growth for a small house, and with the aid of some liquid and artificial manures, judiciously applied, they will produce a considerable number of fine bunches annually. To grow a pot-Vine properly requires no inconsiderable amount of skill. B. C. R.

—No, it is not best to grow Vines in pots in a cool-house on account of the labour they give in watering, and also because when the roots have the run of a good border they are more productive, giving a greater number of branches and larger berries. On the other hand, Vines grown in pots will ripen their fruit a fortnight earlier because they start into growth sooner in the spring, owing to the warm air of the house acting on the pot and imparting warmth to the roots. If you use pots 20 inches in diameter, and take moderate crops, 600 set of Vines will last three years.—J. C. C.

4502.—**Packing Peaches.**—To send Peaches safely by post they must be packed well, as things are usually more knocked about in the parcel post than when sent by rail; still I have sent small parcels of Peaches by post quite well. In the first place, strong tin or wood boxes must be used, and the fruit must be packed tightly, so that under no amount of jolting or knocking about will they shift. I should not send more than one dozen in a box, and these should be packed in one layer; therefore the box should be made to fit the Peaches, allowing for a fair amount of packing. A box 4 inches deep

luscid will carry large sized Peaches. The best packing material is paper shavings, but dry clean moss, well beaten with a stick to make it soft and elastic, will do. Place a layer of the packing material to the bottom of the box, and spread over this half a sheet of cotton wadding; then wrap each fruit up carefully in tissue paper, and run a strip of cotton wadding round each fruit to take off the pressure where the fruits meet. This is better than wrapping each fruit in wadding, because the strip may be doubled, and will in consequence offer a larger buffer to the pressure. Turn the remainder of the sheet of wadding placed in the bottom over the top of the fruit, and fill in with paper shavings or Moss. Make the box quite full, place on the lid, tie down with strong string (never use nails). The lids of Peach boxes usually have strips of wood nailed on the under side at each end, so that under any circumstances the lids cannot move when tied down. The fruit should not be dead ripe when packed.—E. H.

In the first place, the fruit should be gathered before it is fully ripe; if left on the trees until quite soft it is next to impossible to pack them without bruising. Instead of squeezing the fruit on the top to test their stage of ripeness grasp the fruit with the hand, giving it a steady pull. If it leaves the stalk fairly easy it is ready for gathering. Wrap each fruit in soft tissue paper two or three folds thick. Then prepare a strong tin or wood box by lining it with freshly gathered Moss, perfectly dry and well beaten to render it soft and springy. The box should not be more than an inch deeper than the fruit, allowing a layer of Moss under and over the fruit. Carefully pack the Moss between the fruits so that they do not touch each other, nor must they touch the side of the box, but be thoroughly surrounded with Moss. Fill the box tightly with the Moss, so that the Peaches cannot move; tie the lid securely over, but do not nail it beyond just a tack or two to keep it in place. Where Moss is not available Cotton wadding or wood wool will answer very well. Nothing is better, however, than the Moss properly prepared.—S. P.

I frequently send both Peaches and Nectarines by post, and they carry admirably if they are packed firmly in light shallow wooden boxes, and one layer of Peaches in each. Wrap each fruit up separately in tissue paper and pack them rather firmly in the lightest wood shavings. This material I like better than paper shavings or cotton wadding. They must be packed so firmly, without pressing them too much, that there is no danger of them shifting. A layer of the packing must be placed under and another over the fruit.—J. D. E.

4451.—Pollarding Apple-trees, &c.—Every thing would depend upon the condition and vigour of the trees. I have seen trees do well after and make fine heads. It is about on a par with re-grafting, and this result is in proportion to the vigour left in the tree.—E. H.

4456.—Best Strawberries.—Unless one is thoroughly acquainted with the soil it is best to plant for main crop only thoroughly reliable kinds, and these should include Sir J. Paxton and President. Vicomtesse de Thury is very valuable on indifferent soils and is a good variety; Jane Veitch, very large; Elton's Pique, good late sort. Among more recent sorts Prince Teck, in the way of Sir J. Paxton but larger; Barnes' Prolific; Noble, very early; Waterloo, very large, are all good; and on good Strawberry soils I should always include British Queen.—E. H.

4515.—Myrobalan Plum.—This, which is also known as the "Mirabella" and "Myrobella," makes a fairly good fence, though I should prefer ordinary "Quicks" myself. It can be obtained of most nurserymen.—H. C. B.

You could not have looked through catalogues of leading firms, as the Myrobalan Plum is a common tree. It is also called the Cherry Plum, and its botanical name is *Prunus myrobalanus*.—O. T.

Prunus myrobalanus is sometimes called the Cherry Plum. Any nurseryman can obtain this, if he does not possess it, from the large tree and shrub nurseries in the country. It has been recommended for hedges planting, but I like the White Thorn better; it makes a neater and better hedge.—E. H.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruits and vegetables for drawing. The drawings should be made with the best manner, and will appear in our course in GARDENING ILLUSTRATED.

HOUSE & WINDOW GARDENING.

AURICULAS FOR A WINDOW-BOX.

THESE fascinating little flowers, long forgotten and neglected, are now again in high favour, and collections of Auriculas are to be met with on all sides. Being perfectly hardy, they are equally suitable for a garden, a cold greenhouse, a glass porch, or window-boxes, in which they bloom during April, even in a north-west aspect, which suits them well. Auriculas are divided into two distinct families, the alpine Auricula and the Primula Auricula, the latter being the most suitable for growing under glass (without fire-heat), and the former, alpine Auriculas, the most useful for window-boxes. They can be procured in clumps during September, and planted in the box at once, using plenty of drainage at the bottom, with compost of turfy loam three parts, to one part of leaf-mould, and a sprinkling of soot and old stable manure. Auriculas should not have too rich soil, and must at all times have plenty of air. Their cultivation has been known ever since the beginning of the seventeenth century, when Clusius, a great Auricula lover of ancient times, wrote his "History of Rare Plants." Until of late years, however, the alpine Auricula has been neglected, although the Primula Auriculas were a perfect orna with our grandmothers, who were well acquainted with the four different types of these plants—i.e., green-edged, grey-edged, white-edged, and self, the last section comprising a number of beautiful velvety blossoms of purple, yellow, maroon, &c. Alpine Auriculas, on the other hand, are either edged with deep-brown or claret colour, the centres being yellow, or else the edge is purple, with a pale cream-coloured eye, and they bear but little farina on their leaves, the thick white pollen which covers the leaves of the Primula Auricula family being usually absent from the alpine, although there are now some hybridised varieties which also have whitish leaves. The outline of both kinds is very similar, and not in any way difficult, young plants being best procured as offsets, with a little root attached where it is desirable to grow them in pots, when they can be ranged in the front of the box (the pots sunk in Cocoa-nut-fibre or fine ashes), and potted in September, using small sized, and standing the plants in a shady place with a north aspect until they are established. They should not be too freely watered after repotting. The compost should be used in a fairly moist state and water withheld from the plants for two or three days, as they are otherwise liable to rot off. Covering them with a bell-glass during this time is a help to them, or placing them in a steady frame with the glass on, where they can have the damp air which they need to support their foliage until

for summer flowers. They may then be repotted, removing most of the old soil, and examining the roots carefully for any sign of decay, which should be cut out with a sharp knife, the disease being thus prevented from spreading. Auriculas should always be grown in small pots, and may often be repotted into clean pots of the same size they had last, dividing the clumps if necessary. They may also be planted out in moist shady borders for the summer, if a garden be available, and this is perhaps the best plan, as they ripen their crowns well here (if not allowed to suffer from want of water in hot weather), and can be potted up or placed in boxes in September, backed up by well-grown plants of English Ferns, such as Scolopendrium vulgare, and the handsome crested varieties of the Hart's-tongue, which can now be procured, alpine Auriculas make a charming window-box, being especially suitable for those aspects where other spring flowers are late in blooming. L. R.

THE KITOERN GARDEN.

LAYING OUT A KITCHEN GARDEN.

4526.—In the absence of particulars as to site and size of the garden, I must assume a good deal in giving information on this subject. Presuming the garden is in the form of a square, facing due south, and has a wall or fence around it, the most convenient plan of arrangement is to divide the garden into four equal-sized parts, commonly called "quarters," if the garden is not more than an acre in extent. Assuming that the boundary is equal on all sides, a border 10 feet wide should be formed alongside the boundary. These borders are useful for growing small vegetables in, such as Carrots, Beet, Broad Beans, Early Potatoes, Dwarf Peas, and saladings, as well as providing space for the raising of plants for the flower-beds, such as Wallflowers, Forget-me-nots, &c., all of which need space. The border facing the north is most useful for many subjects. For instance, summer Turnips, extra late Strawberries, as well as a reserve ground for shrubs that may be required for filling the flower-beds during the winter months. Close under the wall affords a capital place for the growth of Mustard and Cress during the summer months. Next to this border should run a path 5 feet wide, and parallel to the border. Down the centre and along the top the paths should be at least 6 feet wide, if the garden is an acre or less in proportion. On each side of the centre path a flower-border might be made, in width according to fancy, the back of the border of say 6 feet wide might have a single row of espalier trained fruit-trees—say, Apples and Pears. Cross paths should intersect the centre one for convenience in working. In forming the paths both sides should be on the same level and parallel to each other. The bottom of the path should be of the same formation as the finished path, slightly higher in the centre and rounding to the sides. Whether the garden is on a slope or dead level the edges should follow the same rake. Before making the paths the edgings must be put down, no matter of what they are constructed. Box is the best of living edgings, when properly planted and regularly attended to in keeping it out short. A very neat and interesting edging can be formed with flint or other stones, planting Double Daisy, Pinke, Arabis, Sedum glaucum, S. Lydium, or Herniaria glabra at the back of the stones, allowing it to grow over them and thus form a living edging as well as being a showy one as well. Even strips of board made secure in the soil will answer the same purpose as the stones, but they do not give quite so nice an effect until the edging is complete. If there are no natural means of getting rid of surplus water from heavy rains drains must be laid. A single row of 2 1/2 inch pipes down the centre of each path, with small catch pits built at the side of the path and connected with a short length of pipe, will take away a quantity of water, and if these drains can be connected with a main drain at the lowest point in the garden, running into a tank or pond, the water will be useful. Not less than 3 inches of rough material, such as stones, broken bricks, or clinkers, will be necessary for the bottom of each path. Over this quite an inch of fine gravel should be laid and made quite firm. Paths made in this manner are always dry and pleasant to walk

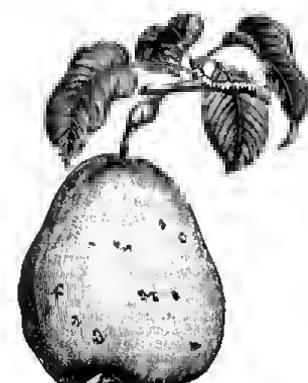


Fig. 2.—Pear "Duchesse d'Angoulême." (See page 400.)

the roots are able to perform their work. Failing a frame or bell-glass, they may be placed in a box with a few inches of damp coal-ashes at the bottom and covered with a piece of glass for a few days, after which they are best out of doors with their pots sunk in ashes in a shady window-box. The plan of growing them in pots has the advantage, that they receive no check in flowering in April, although it is necessary to remove them in May when the box is wanted

upon. All the garden intended for cultivation should be trenched 2 feet deep, rotating the surface-soil till at the top, and returning that from the bottom of the trench to the same place again. The management of the different kinds of fruit depends so much upon circumstances. Presuming there are walls, those facing south will be the most suitable for Peaches, Nectarines, and Apricots; Pears and Cherries succeed in a western exposure; Plums grow admirably against an eastern wall; around the edge of the quarters small fruit, such as Red, Black, and White Currants and Gooseberries, may be planted 4 feet from the edge of the path, planting a bush Apple-tree every 20 feet. Strawberries should occupy a position on one of the quarters, and so should Raspberries, choosing the most damp corner for the latter. Permanent crops, like Rhubarb, Asparagus, and Sea-kale ought to occupy one quarter by themselves, as this plan leaves the three remaining quarters free for rotation cropping of such vegetables as Potatoes, Peas, Cabbage, Winter Greens, and root crops. As it is not wise to follow a crop of Cabbages with another of Brussels Sprouts, for instance, if the three quarters are left entirely free from permanent subjects this repetition of cropping may be avoided. In a short article like this it is impossible to deal so fully with this subject as it deserves. More than a general idea cannot be given; particulars as to details of any one point would be freely given by permission of the Editor.

— You send so little information to guide one in giving you an answer, that only general principles can be referred to in doing so. As a rule, it is best to keep vegetables and fruit as distinct as the circumstances will permit. That portion of the space set apart for fruit should adjoin the lawn or pleasure grounds, so that the passage from one part to the other should be less objectionable than leaving the flowers and plunging at once amongst the Cabbages and Potatoes, assuming this inquiry to refer to a garden of only moderate dimensions. The portion intended for fruit should be the whole of the width; then should follow lines of pyramid or bush-trees of Apples, Pears, Cherries, and Plums. Next to these should be lines of Gooseberry and Currant-bushes, and to follow these may come Raspberries, and then the Strawberry-beds. For still smaller gardens a line of espalier-trained Apple or Pear-trees makes a good dividing line between the flowers and vegetables. The middle portion of the space should be occupied with such vegetables as Onions, Carrots, Cauliflower, Beans, &c., and such subjects as Asparagus, Sea-kale, and Rhubarb should be located at the farthest end. With regard to the direction of the beds I like the rows of the different crops to run north and south, and in laying out a new garden it is easy to arrange for this being done. Good gravel is the best material to make the walks, and a well kept Box-edging is superior to everything else need for that purpose.—J. C. C.

TURNIP CULTURE.

TURNIPS may be had in good condition nearly ten months in the year by sowing a little seed at various times from the first week in March to the last day in July. A light gravelly soil, well broken up, is that which is most favourable to the production of good Turnips, but they will succeed in all sorts of soils if properly prepared. Gardens that are situated somewhat low and moist, with moderately rich, well-cultivated soil, will produce early Turnips of the best quality, though such gardens are unsuitable for the generality of spring crops. The first crop should be sown about the last week in March, in an open situation, where the ground is light. When sown two or three weeks after midsummer, and the plant becomes established, there is no difficulty in securing a crop on tolerably well-managed land. Others to succeed those sown the previous month should be put in about the end of April. This crop will be ready for use by the end of June; those sown at the end of March, if they escape the flea, will be ready for use by the first week in June. Another sowing should be made early in June, and a sowing for the main crop about the first week in July. In all cases locality must decide the time to sow the last crop. As a rule, large Turnips are not required; therefore they should be sown just soon enough to insure roots about the size of one's fist. It

is a good plan to make two sowings at an interval of a fortnight from each other. Turnips are in all cases best in drills about 1 inch deep and 14 inches apart. Late crops should be sown rather wider apart than earlier ones, in order that light and air may circulate freely among the foliage and about the roots, otherwise the leaves get watery and incapable of resisting severe weather. As soon as the plants have made leaves 1 inch in width, the hoe must be at work amongst them, cutting up weeds and stirring up the ground. They should be thinned to about 12 inches from each other in the row. In dry weather give them a good soaking or two of water, and hoe between the rows at least once a week. I ought to have stated that it is not essential that the ground should be prepared just previous to sowing the seed, it being an advantage to have it prepared some time beforehand, when it is not required for other purposes. In all gardens of limited dimensions every inch of ground is an object, and the moment one crop is gathered the ground should be turned up and planted with another. Manure freely and dig deeply, and the soil will be capable of bringing to perfection, two, three, or even four crops in one season. For early sowings of Turnips, the best are early American Stone Strapleaf, which is very early and good; Early White Dutch, a sort that becomes quickly fit for use; Early White Stone; and Early Snowball. For the main crop there is nothing better than Red Globe; it is an excellent variety, and it has the good property of remaining a long time fit for use, and also a good midseason kind in the one here figured, Yellow or Golden Maltose Turnip.



Turnip "Yellow or Golden Maltose."

For late winter use Orange Jelly and Chirk Castle are fine hardy sorts; the flesh of the latter is beautifully white, though the outside is nearly black, and the flavour is good; but the flesh of the former is yellow, and, therefore, to some objectionable. The greatest enemy to the Turnip crop is the fly, which is most to be feared in fine, sunny seasons; heavy rains and cold springs destroy them. One remedy is to dust the ground all over with quick-lime as soon as the plants appear above the surface; this, in most cases, is effectual. Some apply gas-lime three or four days after sowing the seed; sifted wood-ashes, put on as soon as the plants show their seed-leaves, have also proved an effectual remedy. R.

4463.—Seed from Tomatoes.—Choose medium-sized, perfectly formed fruit of any kind, wait until they are perfectly ripe, then cut them in pieces, taking out the seed along with the pulp, place it in cold water, washing the seeds free from all flesh and juice of the Tomato. Lay them thinly in a dry place for a few days until they are thoroughly dry, then they are ready for storing.—S. P.

4531.—A small greenhouse.—A Vine could certainly be successfully cultivated in such a structure as the one described, even without the aid of any artificial heat. I should certainly recommend a Black Hamburg in preference to any other, especially if the local climate is fairly warm, and the situation moderately sunny and sheltered. Otherwise a Royal Muscadine or Buckland Sweetwater should do well. I do not know exactly what the gas-stove mentioned is, but personally have a strong objection to the consumption of gas inside a plant-house in any form. A flue would probably be more suitable,

and certainly less costly as regards fuel; if gas is used at all it should be in a properly-constructed stove with a boiler, in connection with about 25 feet of 3-inch piping. A Vine, however, does not need any artificial heat during the winter—in fact, it is better without it, most decidedly, and a heating apparatus would only be necessary if you wish to grow any tender plants in pots, &c., as well. In a totally unheated greenhouse attached to a small residence near here a really magnificent crop of Black Hamburg Grapes has already been ripened, though, of course, this has been an exceptional season: but with a sunny south aspect there need not be many failures.—B. C. R.

INDOOR PLANTS.

4523.—An Ivy-leaved "Geranium"—Your Ivy-leaved "Geranium" is, I expect, Madame Creusse. I grow it largely for supplying cut flowers in winter, and always pruned rather hard back about May. If out back now, unless in a very warm house, there will not be many flowers in winter, but all dead wood should be removed now, and the young shoots trained in. Give liquid-manure for three or four weeks twice a week.—E. H.

—Pick off all dead leaves and flower-stems, and tie the shoots either to the wires which support the branches, or to the latter themselves. So much more blooms will be had from the plant next year by following this treatment than though it was cut down to within three or four feet of the ground. The Ivy-leaved "Geranium" does not break readily into new growth like an ordinary "Geranium" of the Zonal section. I have some plants treated in the way recommended, and they have been in their present position for the last fourteen years. The wall is 12 feet high and thickly covered.—S. P.

4503.—Compost for the Oleander.—The Oleander thrives well in a soil composed of two parts peat, one part loam, and a fair proportion of sharp silver-sand. It is most important to provide good drainage in the pots, as the plants require a large quantity of water. The reason why the Oleander presents such an unsatisfactory aspect in the majority of gardens is because they are never or seldom shifted into large pots, but kept stoving in the same size from year to year. Another fault is in not giving sufficient heat during the growing season, so that the flowers can expand well. Oleanders are often grown in rooms, but they are not good plants for the purpose, as the temperature is too varying, and artificial warmth is required.—C. T.

4527.—A span-roofed greenhouse.—The proper place for a boiler will be a point between the greenhouse and coach-house, and on the same level as the latter, or, if possible, slightly below. Preferably it should be placed in a small, separate shed or the like, so as to avoid dust, &c. For a propagating house of the size named about ten rows of 4 inch piping would be required, equalling 200 feet altogether, and with a few feet for the coach-house a boiler capable of heating 250 feet to 300 feet should be employed. A small plain Saddle, set in brickwork, would do, or one of the larger sizes of the upright independent slow-combustion description would come cheaper as well as require less attention, and consume little, if any, more fuel. As the pipes in the propagating-house will be on a considerably higher level, a valve must be placed in the flow thereto, in order to check the current and throw some heat into the coach-house.—B. C. R.

—There is no difficulty in heating the coach-house and greenhouse from one fire. Fix a dome-top boiler in the coach-house, and carry pipes from it up into the greenhouse. You will probably get all the warmth you want to air the coach-house when you want a fire for the greenhouse. It will be better, however, to be able to heat the two structures separately, in case it should be wanted. A flow and return pipe along the back and two ends of the coach-house will be sufficient, and the same quantity of piping will do for an ordinary greenhouse of the size you mention if the pipes are 3 inches in diameter. If you heat separately you will want feed-cisterns in both buildings and valves in both sets of pipes to turn off and on, the cistern

In each case being above the highest point of the pipes.—J. C. C.

4521.—**Begonias after flowering.**—You have done wrong. The Begonias were not ready for ripening off, and their beauty must have been very short-lived. It is a common but great mistake to withhold water until the tops have quite died and the water must be withheld gradually, otherwise too great a check is imposed. It is too late now to do much good, but treat the others as advised. When they have quite died down, then lay the pots on their sides, under a greenhouse stage or similar place, where they will not be exposed to drip or frost. In the spring, when commencing to grow, take them out, repot them, and start in gentle heat.—C. T.

—These plants should not be dried off immediately they are done flowering. Water should be gradually withheld by not giving them so much, and gradually reducing the supply; when the leaves assume a yellow tinge the plants of the tuberous varieties should have no more water until they are started again in the spring. Amateur cultivators and some gardeners have very crude notions about "drying off" plants. It is necessary to observe when the plants get to the stage when they may be dried off; and that is easily ascertained by the change in the wood or leaves.—J. D. E.

—The plants have been put on the stage too soon. Take them out and stand them on ashes in a sheltered and sunny spot out-of-doors, giving a very little water as long as the leaves retain green, and gradually withholding it as they turn yellow and fall. This treatment will mature the growth thoroughly, and render the tubers sounder and larger than any other method. Bring them inside before there is enough frost to penetrate the pots.—B. C. R.

4503.—**Tree Carnation outtings.**—Cuttings of leafy firm shoots of Tree-Carnations will strike now in a frame. I should dibble the outtings in pots in sandy soil, which should be kept in a moist condition, and be shaded from bright sunshine.—E. H.

—I am now busy striking Tree-Carnation outtings; it is not too late, but to make sure that they will strike a little bottom-heat is necessary. Mine are treated in this way. I have a low pit to spare, unheated, and I put in about two barrowloads of stable-manure in one corner of the pit. Some Cocoa-nut-fibre or spent tan is put over it, and a couple of hand-lights. I use for the cuttings small 60-sized flower-pots. They are well drained and filled with fine sandy soil. The small side outtings are best, and seven of them are planted in each pot. They form roots in two or three weeks. They must all be struck in the same way.—J. D. E.

4182.—**Creepers for a small greenhouse.**—The best creeper or climbing plant for a greenhouse is the white variety of *Lapageria rosea*. The second best is *Lapageria rosea* itself. Some varieties are much better than others.—J. D. E.

4519.—**Malmesbury Carnations.**—The best compost for these is a mixture of good turfy loam four parts, one part each of leaf-mould and very old hot-bed manure, one part of burnt earth, plenty of sharp sand, and a dash each of soot and Thomson's or other good artificial manure. Drain well and pot firmly. But for water flowering they ought to have been established in the pots some time ago. In winter they prefer a temperature of about 55 degs., with free ventilation on all fine days, and a dry rather than moist atmosphere. Keep them also near the glass, and water only when really necessary.—B. C. R.

—These do not flower so freely or so well in the winter as the Tree-Carnations. To get anything like a good bloom in the winter strong plants should be grown, struck from cuttings or layers early in the year, and grown on in pots to be planted in their flowering pots at the latest in September. Use good yellow loam, leaf-mould, and decayed stable-manure, with a little sand added. The plants should be placed near the glass in a heated house; but the atmosphere of a fernery would be too moist for them. The vinery would be better.—J. D. E.

4523.—**Cleaning Camellias.**—The Camellias are infested with white scale, which is worse if such a thing is possible—to get rid of them meansy-bag. Every bit of the plants, wood and foliage, must be sponged over several times with a strong solution of Chlorure of Lime, 4 oz. to the gallon, used warm; use a brush for the hard wood.—E. H.

—The plants should be thoroughly dressed with soft-soap and water, Tobacco-water, or some such preparation as *Picreol Oil*, which is an excellent remedy for the scale, evidently smothering them. The plants should be thoroughly worked, working the beetle well in at the joints and corners where the pests congregate.—C. T.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in *GARDENING* free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of *GARDENING*, 37 Southampton-street, Covent-garden, London. Letters on business should be sent to the Publishers. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as *GARDENING* has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondent who seeks assistance. Conditions, soils, and manures vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in *GARDENING* should mention the number in which they appeared.

4533.—**Bottling Grapes.**—How is this done, and how long will they keep? Will some reader kindly reply?—HAMBOURGH.

4530.—**Treatment of Nut-trees.**—Will someone kindly inform us as to the management, pruning, and growing, &c., of Nut-trees?—M. N.

4540.—**Oleander.**—What are the best—1, White and 2, the most profuse flowerers; 3, and bearing the largest flowers?—HILSONVILLE.

4541.—**Removing old tree stumps.**—Will someone kindly inform me of the best way to root out old and decayed tree-stumps on a meadow or field?—M. N.

4512.—**Raising Quail.**—Will someone kindly tell me if there is any plan by which Quail can be raised from hatched in one year, or other wise the best plan to raise it?—E. C.

4513.—**Neapolitan Violets.**—I want to start a bed of Neapolitan *Viola* Vicia. Will someone kindly tell me how I should proceed, and what sort is the best?—AMSTERDAM.

4514.—**Fowl manure.**—Will someone kindly tell me what plants in seed put into fowl-manure to, and those that will grow with it, and if I must mix it with anything else?—E. J. H.

4545.—**A fine Snowdrop.**—I have growing in my garden a Snowdrop 15 feet high, the stem is 6 inches in circumference, and I would like to know if this is not an extraordinary flower?—R. WILSON.

4516.—**Roses from outtings and seeds.**—I should be glad if anyone would give me some little information concerning the method of raising Roses from outtings, and seeds?—E. BUNNERS.

4547.—**"Thrips" on Vines, &c.**—Will someone please tell me the best way to clear Vines with fruit on, all size or nearly ripe, of "Thrips," also on plants in same houses, such as *Fuchsia*, &c.?—W. H.

4543.—**Bedding "Geraniums."**—Will someone please tell me the best bedding soil, and John Gibbons are good bedding soil, and also give the names of a few other good ones for bedding?—W. H.

4540.—**Elagnia ocaprolata.**—Is there any chance of flowering the plant in a pot, or must it be planted in a bed in a greenhouse? It makes rapid growth, but has never flowered, though in my possession for three years.—K.

4550.—**Saving Cucumber-seed.**—I should be very much obliged if anyone would inform me how to save seed from Cucumbers growing in a greenhouse? I have two turning yellow. Did I ought to put them to rest on anything?—DORRAGON.

4551.—**Tortoise stove for greenhouse.**—Will someone kindly tell me if a Tortoise stove combustion stove, and of what dimensions, would be suitable to heat a lean-to greenhouse facing east, 7 feet by 8 feet, to give a temperature of 60 degs. in winter?—A. O. G.

4552.—**Snails in a garden.**—Please tell me how to get rid of snails? They crawl all over my carpet in the night. I have a depth of 18 inches under my floor. I have stopped holes where I thought they come, but they leave their slime over everything.—CONSTANT READER.

4553.—**White Thorne from seeds.**—Would anyone please to give me any information as to when would best be the time to plant seeds of White Thorn? And also which would be the best way? And also how long would they be before coming through the earth?—H. H.

4551.—**Heating a greenhouse.**—I have a lean-to greenhouse, one of the cheap ones. Will someone recommend me the best paraffin stove with hot-water pipes to set for it? The size is 12 feet by 8 feet. Belong of thin glass, will require a good deal of heat.—AMATEUR.

4555.—**"Geranium" outtings.**—Will anyone kindly let me know if I can have "Geranium" outtings over the winter in a cold frame used for growing Cucumbers in summer? If so, please suggest how, also best remedy for keeping the leaves from damping off?—JONAS.

4556.—**Evergreen creeper.**—Will any person kindly let me know the names of six or eight evergreen creepers, to grow at the south side of my house wall, 30 feet high, and to flower in spring or summer, something worth looking at? Also say when to plant and best soil?—JONAS.

4557.—**Tobacco.**—I have lately been drying leaves of the Tobacco-crop by hanging them on string in rows in a tent. Will someone tell me what must be done to get the leaves into condition for smoking in a pipe? I collect the culture has been tried in England with some success.—F. C.

4558.—**Evergreen hedge.**—Will anyone please to let me know what to plant at the north and east side of a forest to hide an unsightly underwood, something that will make a thin evergreen hedge about 6 feet or 7 feet high? I was thinking that Privet would be a quick-growing stuff.—JONAS.

4550.—**Heating a greenhouse.**—Which is the best system of heating a greenhouse, size 25 feet by 14 feet, span-roof, brickwork, in which are two Vines? I wish just to keep out frost, and I should prefer a system that needs attention once in twelve hours only. Will some reader kindly advise?—AMATEUR.

4530.—**A greenhouse for profit.**—I have a conservatory, 25 feet long by 10 feet broad, heated with hot-water pipes. There are two Vines and a few flowers in it. I should like to make it profitable this winter if possible. Would anyone kindly advise me what to grow? I had an idea of forcing Rhubarb.—AMATEUR.

4561.—**Tea-Roses.**—Would anyone kindly give me the names of 24 additional Tea-Roses suitable for outdoor culture with flowers having erect habit? In autumn I intend planting outside three dozen Tea in a sheltered position on west-coast of Scotland, and I wish to be advised of the very best varieties to select?—DANIEL HILL.

4502.—**Unhealthy *Fuchsia* and Ferns.**—Will someone kindly tell me what the disease is that my *Fuchsia* and Ferns are affected with? They are covered with small, light-coloured insects, and are full of black spots, which causes them to turn yellow and fall off. What will be best to do with them?—J. S.

4563.—**Management of Pear-trees.**—I shall be glad of information concerning the management of Pear-trees? I have three trees in a well-cultivated garden, growing on walls. Every other fruit and vegetable has been very prolific. These trees have never borne much fruit. This year two of the trees have one Pear each, and the other tree two Pears. How is this to be accounted for?—A. L., Rugby.

4564.—**Feather eating.**—My fowls (*Geme*), both some of the cockerels and pullets, eat their feathers. They are in a field, with plenty of Grass and Heath. They have as much soft food as they can eat in the morning, consisting of ground oats and "thrice," with scraps of meat and vegetables and Corn—Wheat—in the afternoon. Will "Doulton" kindly advise me? The grit in the field is like small portions of granite.—CHURTWAD.

4505.—**Catching Rabbits.**—I shall be very glad of suggestions for catching Rabbits, which at present destroy the plants in my garden? I have put wire-netting round each bed, but the Rabbits either get through or under it. As my garden adjoins a wood which swarms with them, I fear the plague will always continue. I cannot shoot the Rabbits, so should like to hear of some trap or net that would either catch them alive or kill them at once, without torturing them as the ordinary trap does.—HUMANE.

4556.—**Treatment of *Hippocrepis* snipe.**—Having had some bulbs of this plant sent me from Ceylon, I shall be glad of some information about treatment, as though I have had them four years there is no sign of their coming into flower. The plants are not healthy, but have not increased in size at all. When first bought they had increased in size at last, past, and leaf-mould, walk out of the pot, and put into vinery heat. Why do they not give increase or flower, as the bulbs are of a fair size?—VINA.

4507.—**Violets in frames.**—I shall be obliged if anyone will inform me the best mode of obtaining Violets in frames during winter? Last winter I grew them in pots and they were a failure. In the spring I removed the plants into a wire border. Should I this autumn take only the runners or the whole plant with runners included? I propose to plant them in the frame without pots, and shall be glad if you will kindly give me information as to soil, culture, and general management? I have a *Marie Louise* and *Comte de Brazza*.—F. K. J.

4563.—**Climbing Roses.**—Would "J. O. C." or someone else please to give me a little information? I have a span-roofed greenhouse, 24 feet by 10 feet, ends stand east and west, and it gets the sun all day. I have two Vines on the front side. I should like to have the remaining part of the Climbing Roses, if the house is suitable? Would the Roses on the front side be better placed in an outside border? Would back side be better placed inside the house? How many plants, and what kind are best for wearing purposes? How to prepare the soil? Present soil very light. Could I do without additional heat?—NOVICA.

4569.—**Cabbage growing.**—Would someone kindly tell me how to cultivate ground for Cabbage? After I took up my early Potatoes I set out some healthy Cabbage-plants, and for some time they went forward splendidly. Now, just when they are beginning to heart, they have all turned yellow, and are dying away, and I have pulled some up, and I find the root very large—what is termed club bedded—and with wireworms attached. Would someone tell me a way to stop them? I may set Potatoes here be the only vegetables grown on the ground before. The soil is stiff, but sandy, and excellent for Potatoes.—E. J. H.

4570.—**Gloriosa superba.**—I had a splendid bulb of the above sent to me straight from India last winter. I potted it as directed in sand and leaf-mould, giving very little moisture, in March, in a forced vinery. I removed later on to a bottom-heat in frame, and was told to expect it to bloom in autumn. As yet there is no sign of growth, either root or leaves. Can anyone suggest a cause, as the tuber looks sound and plump as when I received it? Is it a plant that is likely to rest a year, as I have experienced some other bulbs do, as *Fritillaria persicum* and *Kemischaticum*? What am I to do with this winter? Remove it from pot and replant next March or leave it in the same pot till it starts? Any advice will oblige.—VANA.

4571.—***Physanthus albens*.**—I bought some seeds of this about seven or eight years ago, and succeeded in raising some plants, one only of which I kept for my own pleasure. I grew them on until I had it in a 5-inch pot, well filled with roots; but not a single flower was to be seen. I got nearly sick of it, the more so as I was led to hope for something especially beautiful, "rivalling even the *Strophomena*." I was tired of giving it house room, so in the spring, when the frost had gone, I planted it out-of-doors without caring whether it lived or died. However, to my

surprise it has taken kindly to the change, has grown more in the last few months than ever it did before, and best of all there is no flower-bud in almost every joint, so now my hopes are raised again. I should be glad to know if it would be safe to leave it out-of-doors all the winter. If not, what can I do with it?—J. H. BARN.

NAMES OF PLANTS AND FRUITS.

Names of plants—*B. C. P.*—*Citasetum ceruuum*, *W. W.*—*Lycaete Dactyloca*.—*L. B.*—1, *A. Cypripedium*, like *C. Pitecherianum*; 2, *Cypripedium Godefroyi*, not *C. bellatulum*.—*F. G.*—*Oncidium Jonesianum*.—*W. O.*—1, *Plumbago variegata*.—*Mrs E. B. Smith*.—*Specimens of Ceanothus too poor to attempt to name.*—*H. Smith, Blackwater*.—*Tecoma (Bigonia) radicans*.
Names of fruits—*M. M.*, 57.—*Apple Mère de Menage*.—*Dr. Carter*.—*Apples*: 1, Not recognized; 2, *Werner's King*; 3, *Hawthornden*; 4, *Early Harvest*.—*Alpha*.—*Plums*: 1, *Kirke's*; 2, *Felinoe of Wales*; 3 and 4, *Idnities*, *Mitchellian's*.—*Frank Avery*.—*Pear Duchesse de Angoulême*.—*H. P.*—*Apple Collin*.—*B. Powell*.—*Apples*: 1, *Cyrille Codlin*; 2, *White Calville*, may be; 3, *Yorkshire Beauty*.—*E. Carter*.—*Fuchsia Dominiana*.

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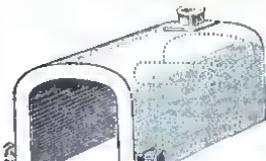
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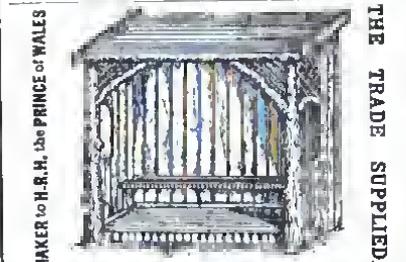
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SEPTEMBER 23, 1893.

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ROSES.

SEASONABLE NOTES.

It will be well now to look over any notes taken down at the various Rose-shows of the year, as where choice or new varieties have been noticed an early order is generally necessary if good plants are to be secured. At the same time I would earnestly advise my readers to look up the habit of any variety fresh to them. If not of vigorous growth, be chary of purchasing it. We have such a vast variety of really grand Roses, and of almost all shades, that a new one, unless most distinct and of good growth, is hardly worth purchasing and risking disappointment. The past summer has been peculiar in several ways, and many Roses that were once almost discarded have come to the front, and we need to be careful and shy of growing these one-season Roses. Then, again, there have been splendid examples of Horace Vernet and Duchesse de Bedford exhibited on almost all stands; but for the average grower these two varieties are useless compared to others, which nearly approach them in all but weak and uncertain growth. To the exhibitor they are indispensable, while they are much too uncertain to plant for garden decoration alone. I have been much struck with the serenity of such Roses as Comtesse de Serenyi, Duchesse de Valombrosa, and Madame Lacharme. One would have thought the past summer an ideal one for these double and light coloured varieties, yet I have not seen a good bloom of either, although I grew some hundreds of each, and have attended a large number of the principal Rose-shows. No doubt there will soon be many queries to hand respecting Rose planting, now that the proper season is close upon us. Anticipating these, I propose to give a few hints forthwith. Wherever possible endeavour to plant some time during October. This year almost all plants will be in grand condition by that date. I have more than once called attention to the rapidity with which Roses make new roots when lifted and laid on one side for a few weeks. It is self-evident that these would be of much more service if made in the plants' permanent quarters, as however carefully the plants may be lifted the second time a large number of these tender roots will be broken. Unless transplanted early, we do not get many of these roots, and I am quite certain that a good lot of these is almost equivalent to the Rose being established a season. Both the Hybrid Perpetuals and Teas will be in a fit condition for lifting by October. My plants of the former are already fit, and I am contemplating lifting a batch for potting up to throw early bloom under glass, a few notes upon which shall appear shortly. Teas and Noisettes, growing so much later than the majority of the Hybrid Perpetuals, may be lifted a little later on. But if we were to wait until all of their wood was ripe we should find ourselves into mid-winter. Some of the wood is sure to chivel upon autumn-planted Teas and Noisettes; still, I would prefer to plant now than during December. If not then wait until February or March.

MANURES.—Now a few words about soil and manure. I have frequently tried to point out how close a bearing these have upon one another. A manure suitable for a light soil is not equally so for the opposite. If your ground is stiff, apply horse-manure, soot, leaf-soil, and old decayed vegetable refuse. The clearings from road-sides are also very beneficial, as they contain a large amount of grit, which tends to keep the soil more open. On the other hand, if the soil be light, avoid all of the above, with the exception of decayed vegetable refuse and weeds. This is excellent for all soils. Should the soil be very light, it is well to get some stiff loam; the stiffer the better, so long as it is not clay. Turn the stiff soil into a lump, and incorporate a fair amount of cow-dung, pig-manure, and any stimulant of a stiff and close nature. When this is applied, it will bring your soil into much better heart for Roses.

STOCKS.—This is always an important question with the amateur, and one upon which a great divergence of opinion exists. I have tried them all, and under different conditions; here is the result of my experience, extending over twenty-five years. Use the seedling Brier for Teas and Noisettes upon deep soils, especially if they be somewhat stiff. The cutting Brier is better for shallow soils, and also for these sections of Roses in light ground. All Teas and Noisettes will thrive upon the Brier in any form, whether seedling, cutting, or hedge Brier in the form of short etardards. I much prefer the latter for these varieties whose blooms have a drooping tendency; Niphotos and Souvenir d'un Ami may be quoted as examples. Grown as dwarfs from the ground, these, and similar kinds are often spoiled by rain and dirt; but on a Brier of about 2 feet they escape this to a great extent. Briars are also good for all Hybrid Perpetuals, Bourbons, and Hybrid Teas; but the Manetti is considerably earlier, and upon light soils is equally suitable for most of the best three sections or classes of Roses. A few of the most notable exceptions are Captain Christy, Marie Verdier, Louise von Houette, Sultan of Zanzibar, and Her Majesty. It is safest to avoid the Manetti entirely when growing Teas, although a few, like Gloire de Dijon, &c., will thrive well on it. A curious fact is the grand way in which some of the Dijon Teas will thrive on this stock, and yet others will not. For example, Kaiserin Friederich likes it, while another Dijon Tea, Bouquet d'Or, abhors it. The Manetti is, as before remarked, considerably earlier than the Brier; but it is not quite so constant in growth, nor does it produce blooms so late as the latter. For pot culture, I prefer all classes, Teas included, to be grafted upon the Manetti.

THE POLYANTHA is also a useful stock, but I do not think it is any improvement upon the Brier. For a few of the extreme growers, especially in shallow soils, I would rather have them worked upon the De la Oriferaie, a stock which produces more sap than the Brier, and consequently can keep up the supply so necessary to the extra vigorous varieties. I also find that William Allen Richardson, Bouquet d'Or, and Maréchal Niel form a more complete stock with this than with any other stock. During October it will be well for my readers

readers, who like to grow their own Roses from the first stage, to propagate a few stocks of the Brier, De la Oriferaie, and Manetti. They are readily struck from cuttings, made 6 inches to 9 inches long, and inserted in sandy loam.
P. U.

4508.—Climbing Roses.—As you have a couple of Vines on the front roof of your house, and it is only 24 feet long, you will have room for no more than one Rose at each end on this side. On the back side you may plant four or five. As you are using no artificial heat, the Roses may be planted and treated exactly the same as the Vines. What will suit one will be equally suitable for the other, but insect pests will trouble the Roses most. The necessity of keeping these down is rather against the Vines when fruit is showing. Make your soil heavier by adding pig-manure, also a little very stiff loam. I should choose the following six varieties: W. Allen Richardson (orange), Climbing Perle des Jardins (yellow), L'Idéal (metallic red and copper), Reine M. Henriette (red), Mme. Chavry (rich salmon), and Climbing Niphotos (pure white).—P. U.

In a house with such capital dimensions you ought to be able to grow Roses and Vines together with a fair amount of success. You had better not attempt too much. The front side should be confined to the Vines only, and Roses on the other side, and the border for these should be inside the house with the entrance exposed to the light. For a length of 24 feet four Roses will be sufficient to fill the space. The sorts may be Maréchal Niel, Climbing Niphotos, General Jacqueminot, and Climbing Devonshire. The last mentioned should be cut down at the end of the first year to within 1 foot of the border if it has only a single stem, the object being to secure two or three main branches, which will reduce the vigour and enable you to confine the branches to a smaller area than can be done when only one is left. Treated in this way a plant will last for a number of years, and be in flower more or less all the summer. You had better take away half of the present light soil—the lower half—to the depth of 2 feet, and make good with the same quantity of heavy loam, and instead of using animal manure, secure half a cwt. of crushed bones to mix with the soil. If you can allow a width of 4 foot from the border do so by all means, but 1 foot less will do fairly well. You can do without artificial heat for the Vines and Roses, and grow a few tender plants during the summer; but if you wish to cultivate the latter throughout the year, you will require artificial heat during the winter.—J. C. C.

4561.—Tea Roses.—You ask for the names of an additional twenty-four varieties. As you do not give the names of those you already possess, it may be that I shall name several of them in the following list. If so, and you will state them in another query, I will gladly replace them with others of an upright habit. You are wise in choosing those of the latter form, as they are much more exempt from dirt, and also show their beauty more prominently: Amzone, Anna Olivier, Catherine Marnet, Cleopatra,

Dovoniensis, Dr. Grill, Ernest Metz, Edith Gifford, Innocente Pirola, Luciole, Mme. Falcot, Mme. Hoste, Mme. Lombard, Perle des Jardins, Safrano, Isabella Sprunt, Souvenir d'Elise Vardon, Pauline Labonté, Souvenir de Paul Neron, Sueset, The Bride, Mme. Charles, Souvenir de Thérèse Levat, and Comtesse de Naidailac.—P. U.

— It is not likely that any two growers would recommend the same varieties for this purpose. I shall, however, give you the names of those which I either am growing myself or have soon doing well in other places. My choice would be: The Bride (this is a much hardier Rose than its appearance indicates), Grace Darling, Vicomtesse Folkestone, Speciose, Princess of Wales, Marie Van Houtto, Mme. Lombard, Mme. Eugénie Vordier, Mme. de Watteville, Comtesse de Naidailac, Anna Ollivier, Perle de Lyon, Mrs. James Wilson, President, Safrano, Jules Finger, Catherine Mermet, Letty Colas, Dr. Grill, Françoise Krüger, Gobault, Lady Mary Fitzwilliam, Mme. Charles, and Camoens.—J. C. C.

4546.— **Roses from cuttings and seeds.**—It would have been better if you had started the former method of propagation a little earlier; anyhow, no more delay should occur. Proceed as follows: In the first place, do not work any hut strong and free growers. Choose wood a little over three parts ripe; that from below a flower just past its beauty is generally in a good stage. Make the cuttings 6 inches to 8 inches long, and insert them in sandy soil on a warm border, affording them an occasional sprinkle overhead and slight shade from midday sun. This is for outdoor striking. If you have a frame or pit make the cuttings smaller, do not remove any of the foliage, use a sandy compost of leaf-soil and loam, no manure, and keep them close in the frame, sprinkling them overhead occasionally. If you have neither pit nor frame, but possess a small greenhouse, place the same cuttings in pots or pans, the former preferred. Stand the pots in a box, cover over with glass to keep them close, and let the box be upon the floor or in some cool corner of your house. As the cuttings make roots gradually remove the glass until they can stand the full air of your house. When this stage is reached pot them off singly into small pots of the same compost, and stand them back in the box for a short time, keeping them close for a week or so and then gradually removing the glass again. After this they may be treated the same as other Roses and either grown in pots or be planted out in the spring. Seedlings are best if raised in boxes under glass in the early spring. Use the same compost recommended for cuttings, filling the box about two-thirds. Sow thinly, cover the seeds about twice their own diameter with soil, and then place a sheet of glass over all and stand them in some fairly warm corner. It is well to make the soil fairly moist at first, and then to keep them dark until the seed germinates. If you prick them off while in growth great care will be necessary. Hence the advice to sow the seed thinly, as you can then leave them to grow in the box all of the first year, it being much safer to move them when dormant. They may either be grown on in pots or planted out into a small bed of prepared soil. As a few seedlings ever prove worth the room I prefer the latter plan.—P. U.

— With regard to the cuttings, you had better wait until the middle of October before you insert them, and then have a bed of sandy soil made up in a frame to receive them. Have the soil fairly dry and made quite firm; into this fix the cuttings quite firm, 6 inches apart. Get the cuttings from the current year's growth, rejecting the soft tops and hard bottoms of fairly strong shoots. After the cuttings are put in, water well, and then put on the light, and let the frame remain closed all the winter, except to moisten the soil when necessary, and to remove any dead leaves. Protect the frame with mats in time of severe frost, and in mild weather—in March—commence to give a little air, at the end of May removing the lights altogether. With regard to the seeds, collect the hips about the middle of November, and place them in a flower-pot and cover them with sand. During the winter stand the pot on the floor of a cellar or cool shed. Next March take the seeds out of the hips and sow them thinly and deep in pans of soil; the pans being at least 6

than 6 inches in depth, and then the seedlings can remain in them until the following spring, when they can be planted out in the open. It is best to keep the pans under glass the first year, not necessarily in a greenhouse; the protection of a pit or frame will do. If you have many seeds they may be sown in well-prepared ground in April. In that case the young plants require to be taken up in the autumn and protected from frost until the following May.—J. C. C.

— Roses are frequently raised from cuttings, some varieties from roots much more freely than others; and the best time to put in the cuttings is when the young wood is nearly ripe. I have been more successful by taking cuttings from pot Roses early in August. The young wood is taken with a heel attached, and the cuttings are made about 4 inches or 5 inches in length; plant them firmly in flower-pots filled with fine sandy loam; cover them with a hand-glass or a close frame. If they are planted in the open garden October is the better month. Seeds may be sown in beds in the garden after they have been cleaned from the fleshy substance; they do not all come up in the second year after sowing.—J. D. E.

GARDEN WORK.

Conservatory.

It will soon be necessary to use a little fire-heat on cold nights if the house contains many valuable specimens, especially if Kentias and other choice Palms are grown, but do not use more fire heat than is necessary to keep the night temperature about 50 degs, at night, and if the thermometer does not fall below 50 degs. without fire-heat the fire need not be lighted. Hard-wooded plants ought to be under cover now. These always do best in a house by themselves, where the temperature, ventilation, &c., can be made suitable to their wants. We are sometimes compelled to grow soft and hard-wooded plants in the same house, and we occasionally meet with men who succeed in doing things well under such conditions, but they are heavily handicapped where the two classes of plants are mixed. The conservatory, properly speaking, is the show house, where all plants in bloom may for the time being mingle together, but during the growing season they should, if possible, be kept separate. A light weak liquid manure occasionally will benefit Camellias now, and if the plants are heavily budded some of the buds should be thinned out; the flowers will come finer, and the strain upon the plants will be less. Large specimen Camellias are very useful for furnishing large houses. They form grand background and centres, round which other plants can be grouped, but Camellias are not of the same order. Ladies say they are so stiff and formal, and the prevalent taste is in favour of lightness and grace, and fragrance is especially valuable in flowers, and this the Camellia lacks altogether. Genetsas are valuable for winter flowering. I have seen these planted out in summer and lifted again in September. The tendency when this is done is to get the plants into large pots, and with most of us it is necessary to keep the size of the pots as small as is consistent with the health of the plants. Acoelias are valuable conservatory plants. In the old days we planted them out either as dense bushes in the borders or to cover pillars and walls, and in any situation they acquitted themselves well, but it is only in old-fashioned places that anything like a collection of Acoelias can be found now, though I think it is a pity they have been discarded, as they are among the best of the late winter and early spring flowering plants. Acoelias arvensis, Drummondii, grandis, longiflora, magnifica, and Riccartii are all good, and the last-named should be planted out in the border, and trained up under a rafter, and allowed to fall about gracefully when in bloom. There are many other species, all of which are valuable conservatory plants. They are easily raised from seeds, but cuttings make the best plants, as they are dwarfer and sturdier, and flower more freely. The Orange family are deserving of more attention.

Unheated Greenhouse.

The season is close at hand now when the flowering plants we have hitherto had in this house will fall through damp and cold. Tuberosa Begonias will go to rest. Lilies of the lanifolium section will also be ripening their growth. These will take no harm if placed in a corner where the sun shines to finish ripening. They can then be plunged in Cocoa-fibre. Early-flowering Chrysanthemums of the Mme. Desgrange section will keep the boxes gay till the autumn-flowering varieties come. For winter large clumps of Christmas Roses in variety in large pots or tubs will be charming. Veroniceas, such as Andersoni, and its varieties, in large bushes will last in flower a long time. These may be grown outside with the Chrysanthemums during summer. Baskets filled with variegated Ivies and Vines elegantissima will be light and elegant suspended from the roof where there is room. For winter work large bushes of Laurestinus and Jasminum nudiflorum will be useful. American Aloes in large pots or tubs will only require the protection of a glass roof in winter, if the roots are kept fairly dry. In cold weather watering must be done with judgment and care.

Stove.

Achmeas are not so much grown as they were formerly. This is, I think, a loss, as it was an easy matter to help them on in heat in spring, and as they come into blossom move on to the conservatory, where they would remain in

* In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.

flower for a long time; the pots could then be laid out for their eldes, and the plants encouraged to go to rest for the winter. Gesnerias, such as cinasbarins, are now becoming effective, and the early-flowering Amaryllis will soon be on the move. The Hybrid Streptocarpus are exceeding useful, and are so easily raised from seeds, which may be sown in spring, and grown on in heat. At present these are generally grown chiefly in peat, but a little turfy loam mixed with the peat will be an advantage. Peat is not nearly so much used in plant growing as it was thirty years ago. It was then thought necessary to pot all Ferns in peat, but it is now found that the majority of Ferns, both tender and hardy, will do better in loam. Ferns must be kept going regularly now, but avoid overwatering the house; 60 degs. at night is quite high enough for the average collection of stove plants. It is important that the wood of the flowering stove plants should be well ripened. This involves more ventilation and a little less water, both in the atmosphere and also at the roots. The early-started Caladiums will soon be past their best. These may be placed together in some corner, and gradually dried off. Small-growing Caladiums will not bear so much starving as will the more robust growing varieties, and the cuttings, if dried too much, will do very dry rot, or at any rate the bulbs will die and rot away if they get quite dry. There are many things coming on now which require more room.

Cucumber House.

Steady progress should be the order of the day at present. Steady frost must be kept up, but the night temperatures need not exceed 55 degs, and if it does not fall below 60 degs. no beam will be done. I am assuming only strong plants were put out, and that they were allowed plenty of room; 6 feet for each plant to occupy will be none too much space. I would rather plant wider apart than nearer, especially for winter bearing, as they soon fill up when they get fairly into growth. Another point to be considered is never use cold water, nor yet topdress with cold soil.

Gold Frames.

Violets must have abundance of air, and just water enough to keep the roots in a nice, genial, healthy state. Tender things must be taken to warm-houses. I am thinking now of the young winter blooming stuff which are usually grown in frames in summer. Recently potted Frezias are growing freely in frames. Romes Hyacinthas are coming on. Lilies Harriet and other Lilies may be potted, covering the tubs with glass. This will give room for a little rich stuff as a top dressing when the flower-spikes are coming up. All bulbs will do well in frames for the present.

Window Gardening.

Though the season is fast abating away, the window-boxes are still very effective. A set of boxes which I often pass are filled entirely with a collection of Ivy-leaved Pelargoniums. The boxes are entirely covered with over-hanging growth, and the whole has a distinct and pretty effect. Indeed there is no lack of bloomers. Scarborough Lilies, Tuberosa Begonias, and Double Zonal "Garaolum" are still in good form. Some day gas will be appreciated by the electric lights, and a great impetus will be given to plant culture in rooms.

Outdoor Garden.

There is no better time than the present for planting climbers and creepers on walls, if they are kept in pots as many of them are nowadays. I was looking at a wall the other day that was planted with variegated Ivies and the Clematis "The General." The Clematis and Ivies were planted alternately, and the wall thus nearly covered the arrangement was very effective; much more so than a heterogeneous collection of plants (some of which would probably fall) would have been. It is always better in planting conspicuous walls to use well tried subjects. Ampelopsis Velutina is largely used for covering buildings, and it will in a few years reach the top of the tallest buildings, and when well established there is no further trouble to be taken. Other useful plants are the Clematis Thomas, Escallonia Macrantha, Scarlet Trumpet Honeysuckle, and the Wisteria sinensis for lofty walls in good aspects. Among flowering shrubs suitable for covering walls are Magnolias of different kinds, Camoensis, various, and the Rose Acoelias make a charming covering for a lofty wall. One of the most elegant wall plants is the Tamarisk, and in a few years it will cover a large space. There are seen in flower now, and old plants against a wall flower very freely. The only drawback is there is nothing but bare sticks in winter, but this is the condition of many of the most beautiful flowering objects in winter. Another useful wall plant may be mentioned—viz., Berberis stenophylla. It is a charming thing at all seasons, and for north aspects the Cotoneasters are very effective. To a certain extent the Tuberosa Begonia is bound to take the place of the Pelargoniums in the flower-garden. When the colours are well selected, charming masses of scarlet, white, and yellow may be obtained with less trouble to keep through the winter than "Geraniums," and seedlings are so good now that expensive plants need not be purchased. The tubers when ripe may be packed in sand and kept in the cellar till signs of growth appear. The Dwarf Hybrid Cannes also will be useful for massing when they get cheap enough.

Fruit Garden.

Grapes in cool houses are ripening well this season, even though they are cutting on the amber tint so much appreciated without much help from the sun. In the case of Muscats and Light Grapes generally all surplus growth should be removed to let in the light and sunshine to finish them off. Gros Colman wants an early start to finish it properly before the sun has lost its power. Where the Grapes have been cut attention should be given to the perfect ripening of the wood, and all young wood carrying soft foliage will be better shorn back. There is not likely to be much grape wood this season, as the Vines are deep-rooted, and in that case set about lifting them at the first favourable opportunity. I used to think the best arrangement for Vine-borders was to have them partly inside and partly outside, but the last half dozen years' experience with inside borders has proved to my mind that with liberal feeding inside a border is the best; especially in the case of large houses. The water supply must be liberal, and there should be a hose to apply it. Fruit gathering will pay demand attention, though

the crops are heavy—too heavy, in fact. As the fruits are so small the crop in many orchards will not be a very profitable one. Vigorous young trees are bearing fine fruits, but on the old trees the fruit is only fit for cider, and this is the best course to adopt—make it into cider and keep the best fruit only for home use, or to send to market. It will be quite useless to send cheap inferior fruit this season to a distant market. The salesman's life just now is not always a happy one. Many people with no experience of marketing, and nothing beyond a small surplus to dispose of, have generally exaggerated notions about the value of things in a large market, and are difficult people to satisfy. However, all things find their level. A very useful Pear to plant for market is the Hazel. It is an easy free bearing sort, just the Pear for the coster's barrow, or to sell in large quantities, and for profit it is no use planting Pears which cannot be relied on to bear. Young Pear or Apple trees which are growing too freely may be brought into a bearing state by lifting the roots now.

Vegetable Garden.

Thin out the best Turnips as soon as large enough. Each plant should have at least a square foot to spread out a good head of foliage to shelter the bulbs in winter.

will break away will begin to strike early in spring. If the requisite temperature is kept up. Tomatoes in winter will require a temperature of 80 degs. A rich top-dressing will be beneficial now. Plant out Lettuces and Endives on warm borders or beds with a southern exposure.

E. HODDAY.

Work in the Town Garden.

Except in the warmest and most sheltered localities tender plants of all descriptions ought to be housed at once. The season has been an extraordinarily early one throughout, and it is very probable that the winter will follow suit. Even if frost keeps off for a time cold wet weather is almost equally injurious to most kinds of greenhouse plants standing outside. Here in the south, again, though the days are warm the nights are very chilly, and at the time of writing a dry and harsh wind is making everything outside look so pinched and miserable that we are getting the indoor plants housed as fast as possible. Chrysanthemums in particular are in many cases exceedingly early, and must be got under cover directly the buds show the first signs of colour, but late varieties ought to be left in the open air as long as possible. In low or damp places, where early frosts are often destructive, even if the plants

next spring. Beds for Carnations should be prepared a month, and directly the earliest layers are found to be well rooted planting may begin. Part of the stock of choice varietals should always be wintered in pots. Cuttings of bedding plants of all kinds—Calceolarias, which will do any time next month, only excepted—ought to be all in by this. Purchase the stock of Dutch and other bulbs in good time.

B. C. H.

THE COMING WEEK'S WORK.

Extracts from a garden diary from September 23rd to September 30th.

Moved Zsop Pelargoniums to greenhouse, where warmth can be given when necessary. At present they will not be hurried. For the most part they are in 8-inch pots, as I find this size most suitable. During the summer all the flower buds have been pinched off, and as a consequence the plants are now strong and in a condition to throw a lot of bloom during the winter. F. V. Raspaill is grown largely for cutting, as the flowers hang well. For producing a mass of colour during winter, West Brighton Gem, Harry Jacoby, and Master Verulam are superior to the broader petalled varietals. All my stock of bedding "Araucarias" are still outside, and will remain so as long as they are safe from frost, and if a degree or two of frost should come, I have light covers which can be thrown over them until they can be placed inside. There is a distinct advantage in keeping them outside as long as possible, but, of course, frost must be guarded against. The beds of pelvies, especially "Fascinum," Verliens, and Begonias, are still very bright, and will be left out as long as possible, everything being done by picking off dead leaves and flowers to keep them in condition. Among the plants which have been provided to fill the beds when the summer hedges have shot their belt are Tufted Panicle in several distinct colours, including blue, yellow, and white. Dianies and Primulas are also largely used with Crocus and other early flowering bulbs. Masses of the early flowering Arabis alba are valuable, because of its earliness, and comething will be done with golden tinted and other shrubs. I am growing a collection of Double Wallflowers in pots for spring blooming. These are now established in 3 1/2-inch pots and will be plugged in a cold frame till Christmas, when they will be shifted into 4-inch pots and placed in a light position in a house where a little fire will be used. They associate well with intermediate stocks which do well under similar treatment. Where Violet-scented flowers are valued in the conservatory in spring, these plants ought to be grown. I have reduced the growth of the strong-growing climbers in the conservatory as more light is required by the plants below, and the time is near when more flowers will be looked for in the conservatory. Early flowering Chrysanthemums are now in fine condition, especially Madame Desgrange and its varieties. When well grown, this to my mind is the most beautiful late summer Chrysanthemum. Preparations will soon be made to place some of the earliest of the autumn-flowering Chrysanthemums under cover. It is useless to keep them out after the first week in October. In cold districts it may be necessary to house those whose buds are getting prominent growing in comparatively small pots. If sufficient nourishment is not given the leaves must go and then the blossoms will be poorly developed. Figs are wearing a good crop this year when the roots of the trees are under control. A few years ago the roots were lifted and brought nearer to the surface; a little fresh lumpy loam being added at the same time, this has been a marked advantage. Finished the removal of the Violets to frames for winter blooming. They were moved with balls and planted on the Melon beds, which had been specially prepared for the purpose, fresh soil being added to lift the plants near the glass. Busy gathering Apples and Pears. Shall not gather late keeping sorts yet. Prasad's Nonnuch and Warner's King, from young trees, are very fine. Planted Lettuces and Endives in every available warm border.

THE KITCHEN GARDEN.

TOMATOES UNDER GLASS.

FAILURES in Tomato culture are not so frequent as formerly, but sufficiently so to call in question the kind of treatment the plants very often receive. Grown in a rational manner, no fruit-bearing plant is more productive or gives better returns in a given space for the attention bestowed upon it; but, on the other hand, when in a debilitated condition, the returns are most disappointing. More often than not early Tomatoes are treated similarly to Cucumbers—that is, grown in a high and moist temperature; but the growth is so attenuated and devoid of stamina that what flowers do form fail to set. There is no danger of the plants becoming ruined through early fruiting, as the earlier fruits, if induced to form, assist in checking exuberant growth, and the succeeding blooms set better. What is needed is a strong, matured growth, built up by free exposure to sunshine with a warm, buoyant atmosphere. It is very annoying to have strong plants capable of carrying a good weight of fruit in a barren state through the blooms failing to set, and with early Tomatoes this is a very frequent occurrence. It is not during the very early stages that a warm and moist temperature is injurious, as in my case the seedlings are raised and grown on until repotted into 11-inch pots in the same structure as that devoted to Cucumbers and Melons. The only precaution taken is to keep them from becoming drawn,



Well-managed Tomatoes under glass.

though generally before severe frost comes. This bulk of the large sized usable Turnips will be lifted and stored. A good way of keeping Turnips in winter is to pull them up leaving the tops intact, digging a trench and turning the bottoms of the Turnips carefully to the trench, leaving the tops outside. Be careful in earthing up (clery not to let the soil fall over into the heart. In earthing up herbs let the earth lie loosely. The plants will not grow so freely if the soil is pressed closely against them. There is no better autumn vegetable than Yelch's Self-protecting Broccoli, the early plants of which are now just turning in; the hearts are very close and white. Three good Potatoes where quality is considered are White Beauty of Heshon, Snowdrop, and Schopmaster. This season has suited all these perfectly. French Beans in unheated frames should be covered with mats at night. Cucumbers also will require warm coverings just in case they get a little longer till the plants in the house are strong enough to bear. Watch the Tomato crop outside, and gather all the large sized fruits at the approach of frost. Small fruits may be pickled or used in some other way. Tomatoes under glass, if the plants are healthy, may be gathered through the winter. The blossoms which are not raised on the young wood will ripen in succession up till Christmas. The plants may be pruned back and the new shoots that

cannot be housed at once, they should be removed to some sheltered spot, as under a south or west wall or high fence, where a length or two of thin canvas can be arranged so as to run on wires over them on cold nights. Here they should be quite safe for another two or three weeks at least. How beautiful are the comely Chrysanthemums of the Drengre type now! The flowers are of the true Japanese formation, but not too large or marvellous, and therefore exquisite for almost any kind of decoration, cutting, &c. The original white flowered variety with its pale and deep yellow spots, G. Weimig and Mrs. Hawkins, are now well known, but some of the new Continental kinds, such as M. Gustave Guesard (rosy pink), Chev. A. Handleers (creamy white), Gaston Oh. de Brailles (buff rose with gold centre), which are in a very similar style, but of entirely new colours, should be grown as well as the older kinds. Auriculas should now be removed from the shady quarters they have occupied during the summer months and be accommodated in frames or low pits near the glass, where they will receive the full benefit of the sun, with free ventilation in mild weather. Any plants that seem to require it may be repotted now, keeping them close to the glass afterwards. If this is not done a light top-dressing of rich soil had better be given. Strongly cultivated pots of low into 3-inch or 3 1/2-inch sizes will mostly flower

which is easily prevented by exposing the seedlings to the light on a shelf near the glass. When the plants are allowed to stand pot to pot, even in a light structure, they are very apt to become much enfeebled, and the lower leaves, instead of becoming fully developed, are puny, with a very yellow cast. In most gardens the earliest fruits are produced from plants growing in pots and boxes, as these can be removed to other available places later on. In those gardens where space is limited sundry places have to be resorted to ensure their fruiting satisfactorily. I find that Early Ruby, Conference and Acquisition are admirably adapted for growing in pots and boxes, the growth not being so vigorous as in some of the other sorts. By the time the plants are potted into the 6-inch pots there is generally another structure other than the Cucumber-house in which to grow the plants, although it is advisable to allow them to remain until they have got over the shock of repotting. I place the plants on a temporary stage in one of the vineries just started. After being potted into the 6-inch pots they have become established, it will have to be decided whether they are to be grown as single stems or with two or three. The

SINGLE GORDON plants will commence to fruit the earliest, and if there is room this system may be adopted. Even with two or three shoots the method is the same. If the plants are repotted into 12-inch pots and other plants are coming on for succession, the leaders should be stopped after two or three bunches of fruit to a shoot are formed. It must not be thought that keeping the plants in the 6-inch pots is an aid to early fruiting, as in this respect they are not in the least more precocious; in fact, in the end they are behind others which have been early potted or boxed. A very dry or arid atmosphere is as much against a free set as an overmoist and close one. By keeping the atmosphere fairly moist the pollen is more potent, and sharply tapping the shoots in the middle of the day is generally sufficient. The two extremes of atmospheric conditions must be guarded against. The soil can easily be too rich and light and also loose. Where the soil is known to be poor a little kinsit and superphosphate mixed with it will greatly assist the plants; but, on the other hand, good crops may be produced with sound loam and a fourth of pulverised horse-manure. The plants delight in a firm root-run, this imparting a fruitful growth, as later on when they need assistance richer food in the form of clarified liquid will prove beneficial. In the early stages of growth Tomatoes should not receive nor do they need an overrich soil or a poverty-stricken one, both extremes proving injurious to the well-being of the plants. In conclusion, just a word of warning upon the penny-wise-and-pound-foolish plan of being niggardly with the fuel. This is not likely to happen early in the season, but to withdraw fire-heat later on will most likely result in an attack of disease. A.

4550.—**Saving Cucumber seed.**—When the fruit becomes of a yellow colour the seed will be ripe; but when it is intended to save seed from Cucumbers the plan is to fertilise the female flowers with the pollen from the male blossoms. Cucumbers will grow a full size and have no seeds in them sometimes. They may be chance fertilised, and in that case would have seeds in them; but to make sure they ought to be carefully fertilised when both the pollen and the flowers are in condition. When the fruits have been cut lay them on a shelf for a few days, and afterwards cut them open and remove the seed, wiping it with a dry cloth. When it has been laid out to dry for a few days put it aside for use in paper bags.—J. D. E.

In all probability the two Cucumbers mentioned as turning yellow contain seed; if they are swelled towards the point or "nose" they are sure to do so. Loop them up to the roof with some raffa or string, so that they lie in a horizontal position, and when they are quite ripe, which may be known by their being quite hard and sounding hollow when tapped,

cut them and lay on a warm, sunny shelf or in a window for three weeks or more. Then cut them open longitudinally, scrape out the seeds, dry them thoroughly, and store away for future use. It is better not to wash them if possible.—B. C. R.

— Sling the fruit to the wires by passing a string of melting round the end and securing it to a wire near. Cucumbers will not produce seeds unless the blossoms were fertilised. In the summer this is often done by insects, when the house has been freely ventilated. Some kinds—Telegraph, for instance—will not seed freely under any circumstances. The fruits may grow to a large size and ripen, but the



Fruiting-branches of Fig "Brown Turkey."

produce is small. The practice of sowing seeds from exhausted plants is not generally to be commended. The better way is let the plants devote their youthful energies to seed-bearing, and see that the blossoms are properly fertilised. Those who grow Cucumber-seeds for the trade generally adopt this course, and the plants from such seeds are more vigorous than the seeds from exhausted plants.—E. H.

— If the flower at the end of the fruit was not fertilised, either artificially or by insects, the chances are that it contains no seed. If the Cucumber is the same thickness all the way it has no seed inside, but should it have swollen at the extreme end into a knob-like form, that part contains seed. Allow it to hang upon the plant until quite yellow, or turning brown. The seed should then be taken out by cutting it in quarters down the middle and washed, laying them in a warm, dry place for a few days to harden.—S. P.

4560.—**Cabbage growing.**—If anyone could tell "E. J. H." how to cultivate ground for Cabbage to prevent club he would confer a boon on market gardeners and others of the greatest possible value. All sorts of "cure" have been put forward to prevent club, but none have been successful. The advocates of gas-lime have made sure that this would prevent it. I gave it an excellent chance on a piece of ground I intended to plant with Brussels Sprouts one year. The gas-lime was obtained directly from the gasworks, and a good dressing was dug in; soon after the plants were set out, and the dressing was so strong that quite three parts of the plants were killed, and the remainder were all badly clubbed. Select another piece of ground for the Cabbages, and if planted now to come in about May and June they will be free from club. There is a walk down the centre of my kitchen garden, and Cabbages planted on one side always club; on the other side they are free from it.—J. D. E.

— The soil needs lime. Give it a dressing at once, and put in a fresh lot of plants, using plenty of soot and wood-ashes or burnt soil round the roots of each. You will not be troubled much with clubbing afterwards.—B. C. R.

New Chrysanthemums.—The Chrysanthemum season, so to speak, for the present year has already opened, and doubtless readers of GARDENING, especially those in any way interested in this flower, like to know the best new things. Chrysanthemums are not like Daffodils, as they quickly become cheap, and within the reach of all who have not very long purses for plants. A very promising new Japanese variety was shown at the recent show of

the National Chrysanthemum Society, and is named Mr. E. Rowbottom. It is an English-raised seedling, like so many of our finest novelties, and belongs to the Japanese class. The flowers are self yellow, of a very delightful shade, and are attractive also for their fine form. They are not too large, as many of the later acquisitions, which are so big as to be simply coarse, monstrous blooms, fit only for the show board. Another new kind is named Samuel Barlow; the flowers, not too large, are rosy-salmon in colour, touched in the centre with yellow.—V. C.

FRUIT.

FIG-TREES IN THE OPEN AIR.

If the roots of a Fig-tree are in a suitable medium near the surface, so as to be under the influence of solar warmth, there will be some fruits. In damp situations, or where the subsoil is of a heavy nature, it will be better to keep whatever preparation is made for the roots well up from the damp subsoil. In such case I should prefer to lay down a base 6 feet square of concrete 6 inches deep. Cart a couple of loads of soil from an old pasture if obtainable, and mix with it half a load of builder's rubbish from the pulling down of old buildings, containing a large proportion of old plaster. Plant the Fig-tree on the top, with its roots from 6 inches to 9 inches from the surface. The roots, of course, would during the first dry summer make an effort to push down strong feeders over the edge of the base of the concrete, but it would be an easy matter to deal with these either in the autumn or spring. I have lifted the roots of Fig-trees at both seasons with about equal results, and with an impenetrable base 6 feet square beneath them, the roots, passing over the edge of the concrete, would be none the worse for an annual lift up. When the roots are kept near the surface, and the young

WOOD PROPERLY THINNED in summer, so that it may become hard and firm, there is not much danger to be apprehended from the frosts of an average winter. Still, unlike most other fruit-trees, the Fig is not injured by being thickly covered in winter, and, to make sure, it is generally advisable to cover the branches towards Christmas, as there is never any frost severe enough to injure the wood of Fig-trees before the middle of December. There are various ways of affording protection; perhaps the simplest is to uncoil the braiches, draw them together, and cover with Spruce or Yew branches. Dry Bracken will do as well, so will straw, or mats may be nailed over them. No great thickness of anything is required, and, as I have already said, in ordinary seasons no covering will be wanted; it is only to meet the severe winters which visit us at more or less lengthy intervals that I should cover at all. The best all-round kind for the open air with which I am acquainted is the Brown Turkey. Fruiting branches of which are here figured. I am told there are many varieties of Figs grown in Italy and in other Fig-growing countries that would be worth a trial here, and there is the possibility of something being done by raising seedlings, but Figs are queer things by hybrids. Still, there is hope for the raising of seedling Figs, as we are not yet overburdened with really good Figs suitable for open-air culture. Under fairly good management there never need be a failure of the Fig crop, as the young fruits do not start into growth until the weather is settled, and the blossoming period comes a good deal later. E.

4547.—**Thrips on Vines.**—These are very troublesome, and when they have become well established on the Vines it is difficult to remove them. Strong fumigation with Tobacco-smoke may destroy them, but this might give the ripe Grapes an unpleasant flavour, as the thrips can seldom be destroyed unless the house is fumigated twice, or even three times. Painting the pipes with flowers of sulphur when they are well heated is an effective agent of destruction; it kills red-spider as well. I have not seen any thrips on the Vines since I used the sulphur fumigating.—J. D. E.

— Fumigating the Vines with Tobacco-smoke on three successive nights will generally rid the Vines of this pest. It will be a good plan, however, to repeat the dose in about a

fortnight. The smoke will not hurt the Vines or the fruit; the smell will pass off in a few days if air is liberally admitted to the vinery. If the Fuchsias are in pots stand them out-of-doors for six weeks, letting the plants have a touch of frost. If they are planted out in the vinery, syring the leaves with soft-soap and Tobacco-water, not too strong.—S. P.

4538.—**Bottling Grapes.**—What is meant by bottling these is quite different to bottling stone fruits. Ordinary wine-bottles are filled with water and tied to a rail loosely; the bottom of the bottles rest upon a ledge, and are tipped over to an angle of about 45 degs. The bunches of Grapes are cut with the lateral branches attached to them. Insert the end of the bunch in the bottle of water, and the bottles being at the above angle will allow the bunches to hang clear. I have kept bunches of Lady Downes' Seedling Grape in good condition in this way from Christmas until May. All my Grapes not cut by the first week in January are preserved in bottles. The bunches take up a good deal of water, which has to be renewed once a week.—J. D. E.

—The bunches of Grapes are cut with enough of the wood on which they have grown to reach down the bottle for the Grapes to hang clear. It does not make much difference which end of the shoot is thrust in the water, as water will be imbibed from either end. Any room may be fitted up with shelves or racks for placing the bottles upon in a slanting position. All that is required is an equable temperature of 45 degs. to 50 degs. Grapes under such conditions will generally keep longer than if left on the Vines.—E. H.

4563.—**Management of Pear-tree.**—It is possible that root-pruning might bring the trees into a fruitful state, but I have my doubts about it. I have had no good results from regrafting unfruitful trees with other sorts that this is a case in which I should adopt the same plan in preference to any other, as I believe the secret of the barren state of the trees in question is that the position does not suit the sorts. If you are fond of experiments you may regraft two of the trees and root-prune the others.—J. G. C.

—Your question is really too meagre to tell what is required. You give no particulars whatever, and I should think that as other things in the garden seem to be satisfactory, that you have got varieties naturally shy bearing. Some kinds give comparatively few fruits, although the trees may be in the best of health, and received proper treatment. Send samples of the fruit, or say whether the trees seem to require pruning at the root through overluxuriance in growth.—C. T.

—The trees probably require root-pruning, if they are making much wood. The old aphorism "He who plants Pear-trees for his heirs" need not be true if the roots were kept under control. If you could get a practical man to look at them he would tell you what is best to be done, but the probability is that lifting or shortening the roots will have the desired effect.—E. H.

4500.—**Vines in a cool house.**—Notwithstanding that very good Grapes can be grown in pots, it is much more satisfactory to have them planted out in a border, either in a cool or unheated house. In pots they only last one season, whereas planted, the canes should be in good condition thirty years hence. It is not necessary to make a large border for Vines at once; in fact, it is a much better plan to make it piecemeal—say begin with a border 3 feet wide and add 2 feet to it yearly until the space is filled up. It is a matter of convenience whether the border is wholly an inside one or not. Good Grapes can be grown with the roots outside entirely, but from choice I prefer to have them inside the house, where they are more under control. The worst evil in Vine-border-making is that of having it too deep; 9 inches of drainage at the bottom, and 2 feet 6 inches depth of soil is quite sufficient for any variety. Freshly cut turfy loam is the best material for Vines to grow in when mixed with charcoal or old lime rubble, adding a small quantity of wood-ashes for the purpose of providing potash for the Vines. Farmyard manure should never be added to the soil when making a new border. If loam or freshly cut turf is not available, a sweet garden soil will answer very well, providing a little of Thomson's or Innes' Vine-manure can be added along with the charcoal, wood-ashes, and half-inch bones. When the border is added to yearly

fresh soil is given to the roots to run in—this is what they like. A retaining wall of turf can be built annually to keep up the loose soil; in this the roots will be quickly found showing what they like. As to the best varieties to grow, Black Hamburg and Alicanto are the most suitable of that colour for an unheated house, and Foster's Seedling if a white kind is required. One-year-old canes are the best for planting, but for fruiting in pots two-year-old canes are the best. Those that have been cut down once are the strongest, producing fruit the same year. Pots 12 inches in diameter are not too large for Vines to fruit in.—S. P.

FRUIT-TREES AS ORNAMENTAL SUBJECTS.

Why should not fruit-trees be grown more for their beauty when in bloom? When we consider the flowering charms of a great portion of our fruit-trees is it not surprising that they are not more grown for their beauty when in flower? In early spring nearly all hardy fruit-trees, such as Apricots, Peaches, Plums, Cherries, Almonds, Apples, and Pears, are more or less ornamental—the double-flowering Peach, Cherry, and Almond being particularly so. All of these trees should be planted more abundantly than they are, for in the spring no shrubs are more attractive. They may be grown in any form, bush, pyramid, or standard, and to various sizes; and when flowering as standards in the open borders they form conspicuous objects. A little attention, however, is required as regards keeping them well supplied with young wood, as upon this the flowers are produced. They should also be planted in good soil to induce them to make plenty of growth. The double-flowering varieties of the Peach, Cherry, and Almond also force well. They are of easy cultivation, and well deserve a place in the conservatory amongst other flowering plants. When grown for this purpose they should have the same care in cultivation as when grown for fruit. Young maiden plants may be obtained from the nursery; these should be potted in the autumn and placed in a cool house until required for forcing, when they should be removed to a warm house, where they will soon flower, after which they should be placed in the cooler quarters, where they will continue in bloom for a long time. After flowering the plants should not be placed outside all at once, as is the

open space in pleasure grounds or by the side of woodland walks, instead of the worthless subjects which now too often occupy such places. B.

4539.—**Treatment of Nut-tree.**—Filberts and the ordinary Cob-nuts are very easily grown. It is better not to prune them any further than merely to cut out any crowded growths, or such as would cause the trees to get out of shape. Nearly all the varieties of them have a tendency to throw suckers from the bottom of the trees, and they will continue to do this until quite a thicket of growths is produced; if this was allowed to continue, the suckers would take the sap intended for the trees, and prevent their assuming a shapely head of fruitful branches.—J. D. E.

—When a Nut-tree has been started right at the beginning there is not much difficulty in keeping it right, but old bushes which have been allowed to run wild from the first had better be thinned, only without much attempt at shortening. A young Nut-bush should be worked on the model of a well-managed Gooseberry, with an open centre and low wide-spreading branches, thinned moderately. The object of the pruner should be to fill the bush with feathery spray.—E. H.

—Presuming young trees are obtained from the nursery with from three to six shoots on a stem 2 feet long, they should be planted 8 feet apart in any open position in well dug soil, but not too heavily manured. Directly the leaves have fallen is the best time to plant. In February following the shoots should be cut back to within 4 inches of the base to induce them to push strong shoots. The next year the leader should be cut back to within 1 foot. The trees should be shaped so as to have about ten main branches to each. The side growths should be spurred in after the manner of Vines, as from these spurs the nuts are obtained in quantity. The centre of the tree should be kept open to admit of sunlight and air freely.—S. P.

4541.—**Fowl manure.**—This is suitable for all, or very nearly all, kinds of plants, but, being of a very strong and burning nature, it should be either given in a liquid form, steeping, say, a peck in a large cask or tub of water, stirring well, and then allowing it to settle before use, or else be mixed with five or six



Flowering-spray of Pear "Citron des Carmes."

usual practice with subjects that have been forced; they should be kept under glass and well attended to in the way of watering and keeping free from red-spider, aphid, &c., until the summer, when they may be gradually hardened off and finally placed out-of-doors in a position where they can have the full rays of the sun, so as to thoroughly ripen their wood. The common wild Cherry is very attractive when in flower. The wild Crab is also very attractive. Many trees of this sort would be well worth the trouble if planted in any

times its bulk of fine sandy soil, and the whole allowed to lie in a heap for a short time.—B. C. R.

4552.—**Snails in a garden.**—The only way of dealing with snails is to catch them, and they must be looked for early in the morning or in the evening, just as for slugs or caterpillars, which must be diligently sought for to get rid of them. If there is any particular wall which they climb, make a preparation of train-oil and soap, which if daubed along the bottom will prove a very good barrier.—C. T.

TREES & SHRUBS.

JUDAS-TREE (CERCIS SILIQUASTRUM).

This (leaves of which are here figured) is certainly not so often met with as it ought to be, and yet few ornamental trees are really more successful. In the South of England it will also succeed as a single specimen on the lawn, where it often assumes the proportions of a tree. In more northern districts it is deserving of a wall.

4536. — Evergreen creepers. — I am afraid you will have to include also some things that are not evergreen, if you wish for a good assortment. The majority of the most beautiful hardy climbing flowering plants are deciduous, but a few you may get, such as Magnolia grandiflora, which will be some time, however, before it gets to any size, and the Fery Thorn, or Pyracantha, which is a very handsome flower. In the earlier part of the year it blooms in profusion, and the clusters of white flowers are remarkably attractive, but in winter the plant is brilliant with orange-scarlet berries, which cluster thickly on the shoots, and are in rich contrast to the deep-green luxuriant foliage. Of course, such a plant will take far longer to cover the wall than the deciduous climbers. I give the names of a few deciduous kinds, such as Clematis montana, which is one of the best of all climbers, if you can keep it fixed well to the wall. I know a house absolutely covered with it, festooning about the windows, and in the month of May it is very charming with its lovely white fragrant flowers. It is a very hardy species, and will grow in ordinary soil. Then you may have Veitch's Virginian Creeper, which clings tightly to a wall, and grows very quickly. The colour of the leafage in autumn are very beautiful—gold, crimson, and allied tints. The winter-flowering Jasminum nudiflorum is a very pleasing kind, producing on its naked shoots in winter a profusion of yellow flowers, which give a glow of colour to the garden at a time when it is most needed. Against the wall a good plant of the double-flowered Kerria would make a show, as the flowers are produced very freely early in spring. Roses, such as (Flore de Dijon), would succeed well, and there is no finer Rose for an ordinary garden. It grows strongly, and is a perfect sheet of fragrant flowers in the summer months, and is not afraid to produce a few blooms in the autumn. The Wisteria sinensis is worthy of note, but this is also deciduous. All the things named will thrive in ordinary soil, and give no trouble. There are a number of things that might be recommended, but they are not really hardy, and likely to prove a nuisance than otherwise. You might get—but again the plant is deciduous—Chimonanthus fragrans, which blooms in the winter, and a good specimen will prove welcome, as the flowers are very fragrant, quite a rich spring fragrance, and of a rather dull yellow colour with brownish sepals.—C. T.

It would have been an advantage if "John" had mentioned his locality. If he resides in the south, Magnolia grandiflora (Exmouth variety) is a grand wall plant. It is rather slow in starting, but when 20 feet or 30 feet high it will be worth looking at. Escallonia macrantha, Ceanothus dentalis, C. Veitchi, Crataegus pyracantha. There are two varieties of this evergreen Thorn, the difference being in the colour of the berries; but I think the scarlet-berried sort is the most effective, but this is a matter of taste, and where winter effect is sought it might be advisable to plant both. Lardizabala hitrensis is a very handsome evergreen wall shrub. When first introduced it was thought to be tender, but it has proved itself hardy. It should be understood that things

which will prove permanent are often at the beginning of slow growth, but the plants named will give character to any building, and are worth waiting for. Have the site trenched up 2 feet deep, and any bad soil removed. If the soil is poor, manure liberally.—E. H.

— The White Jasmine (J. officinale) and the yellow (summer-flowering) variety (J. rotundifolia), and though not evergreen, the winter-flowering J. nudiflorum would make a nice addition; Escallonia macrantha, Garrya elliptica, Osteospermum chlorophylla, and C. Simondsii, Magnolia grandiflora, and M. Ericoidensis, and the Evergreen Rose (R. sempervirens).—B. C. R.

4512. — Planting Clematis. — The best Clematis for a north-east position is the beautiful white-flowered variety, C. montana. It is doubtful whether any of the other kinds would



Leaves of Judas-tree (Cercis siliquastrum).

do much in so cold a spot, but C. Jackmani, with masses of purple blossoms, might be tried. The end of February or beginning of March will be a safer time than the present to plant a young Clematis. If, however, a well-established plant of two years' old can be procured as once and well planted, mulching the surface afterwards with fresh manure, it might do well, and would start earlier than if spring-planted. Should severe weather set in, however, it would be best to mat it up, for plants which have not yet had time to get a thorough hold of the soil are much more liable to be destroyed by frost, followed by bitterly cold winds. The answer to this query depends so much upon locality, and also the amount of shelter which the north-east front of the house may have from other buildings, that it is difficult without information on these points to pronounce a definite opinion.—I. L. R.

4540. — Clematises. — These Clematises which produce the largest flowers are not the freest bloomers. The magnifolia section produce large flowers, but the Jackmani type are the freest bloomers. At the present time there are more of Clematis Jackmani sold than any other, and the variety of Jackmani called Snow White is a good companion to it. Henryi is also a good white, larger than Snow White. Countess of Lovelace (double lilac), Duchess of Edinburgh (double white) belong to the Florida section; the flowers are large and handsome.—E. H.

You ask a question that entails a somewhat lengthy answer. Many Clematises, although having beautiful flowers, grow weakly, and are not, therefore, of great value for the garden. The Clematises represent a large family, and are divided into different sections. First, we have the patens type, and varieties bloom in the spring form, it must be remembered, the old wood, so if you ruthlessly hack the shoots about you will cut away the flowers. Three very beautiful varieties of this section are Fair Rosamond (blush-white), Lady Londesborough (silvery-white colour), and Miss Bateman (white), of the Jackmani type. You must not secure C. Jackmani, which has very rich dark-purple flowers, produced very freely. It is one of the best of all Clematises for the

garden. C. Fiammola is worthy of note for its profusion of small white fragrant flowers. O. rubella (rich purple) is a good kind. Of the viticella type, very pleasing are the varieties Mrs. James Bateman (light lavender) and venosa (purplish-red), a very fine thing. C. montana will quickly clothe a house, as it is very free, and does not seem to care about position, the flowers being produced in the month of May. It is very hardy, grows in ordinary soil, and blooms profusely. There is a class of Clematises that does not climb at all, such as C. erecta, which is of erect habit. If, however, you require only a few kinds, limit yourself to those named, commencing first with the free and richly-coloured C. Jackmani.—C. T.

4542. — Raising Quick. — This query is a good illustration of the impatience of the present time. This is not a waiting age; but in the matter of raising Thorn Quicks there must be a considerable lapse between the sowing of the seeds and the setting out of the plants. But when strong Quicks, suitable for planting, can be bought for three or four shillings a hundred, why wait for seedlings? It will, under the most favourable circumstances, take several years to get Thorn Quicks large enough to set out, and most people find it better to leave this work in the hands of the specialist. Haws are generally kept twelve months pecked away in a heap of sand to remove or soften the coverings of the seeds. If planted as soon as ripe the seeds would not grow the first year, and it is found better to mix them with the sand in a heap for twelve months before sowing.—E. H.

The haws when gathered should be thrown into a heap, and covered with soil to get rid of their outer covering. The following April they would be ready in sowing broadcast in well-prepared soil, not too thick, covering the seed with fine sandy soil. Here the seedlings should remain for eleven months, planting them out afterwards in rows, 10 inches apart, the plants 3 inches in the rows.—S. P.

4541. — Removing old tree-stumps. — There is no better way of removing old decayed tree-stumps than digging round them, and grubbing them out. A good workman will soon clear a piece of ground. This is work in which experience is of greater use than grubbing or falling timber. It always saves labour to clear a good piece round the stump, so as to get well under it before beginning to cut.—E. H.

4558. — Evergreen hedge. — The broad-leaved Evergreen Privet makes a capital hedge, and it will grow in front of trees as well as anything; but the best of all evergreen hedges is the common Holly. When it has once made a good start it grows as freely as the Privet, and will form a very high hedge, which the Privet will not. Some persons would choose the Privet because it grows a little more quickly at first; but I would unhesitatingly select the Holly as making by far the best hedge in the end. Arborvitae and some of the Cypress family have been used as hedges, and in some soils do well; but I would place Privet and Holly before them.—J. D. E.

Nothing grows quicker than Privet, and if the evergreen sort is planted it will make a good blind all the year round. If the fence is required to keep cattle back the Privet alone is not firm enough; a Quick planted every yard strengthens the hedge considerably. Holly is perhaps the best of all evergreen hedges, but it is of slow growth. Whatever is chosen, the main point to observe is to prepare the site thoroughly by trenching the soil 18 inches deep and using manure freely, both in the soil and as a mulching.—S. P.

Privet would do well for the summer, but in severe winters it frequently loses its leaves. Laurel would be far better, and is quick growing, but the much slower growing Holly would make the best hedge of the three.—A. G. BURTON.

Nothing better, if time is an object, than the Evergreen Privet. Otherwise a Holly-hedge is superior to anything else of its kind, but it takes a good many years to attain a fair size.—B. C. R.

The common Privet makes a good hedge quicker than most others, and if a few Thorns or a few Myrobolans Plums are planted with the Privet they will help to strengthen the hedge.—E. H.

4511. — Clematis Jackmani. — The end of October or beginning of November is a good time to purchase and plant out this Clematis or any other. The plant would not be large, and no pruning is necessary the first year or any year. I allow the plants to grow freely as they like. If they are trained to a wall all they grow to are allowed to remain, and they hang out, after a time, as much as a foot or two

OUTDOOR PLANTS.

WILD GARDENING.

AMONGST the numerous species of strong and hardy herbaceous plants that are suitable for naturalising in woods or other semi-wild places, the following are a few that have been found to thrive well, regardless of rabbits or the encroachment of rank and wild vegetation. The plan adopted in some cases has been (and I think it is the best one) to plant bold colonies of distinct species in separate groups, while in others a mixture of herbaceous and bulbous plants has been tried, whilst a single specimen of such a rampant grower as *Polygonum cuspidatum* is quite effective enough in itself; it succeeds in almost any kind of soil or situation, and after planting out a single plant it will in a few seasons develop into a large, spreading bush, and when in full bloom is highly ornamental. Perhaps it is seen to best advantage and is most effective on a Grassy bank or rocky steep; it is infinitely more at home and beautiful in such a site than when crammed into a formal herbaceous border, where this truly wild ornamental plant may too often be seen kept a prisoner and restricted in growth by a constant application of the spade about its roots, instead of allowing its stoloniferous habit of growth unlimited freedom to ramify at its will.

BOCCONIA CORDATA (here figured) is a vigorous grower, but does not succeed so well on thin, poor ground as the *Polygonum*; it seems to prefer a deep and fairly good soil. It is a plant well worth the trouble of preparing a place for its reception by means of turning and enriching the soil. When seen in vigorous growth its tall stalks of large, uncommon, and curiously out-leaved of a peculiar hue render it an exceedingly attractive and conspicuous plant amongst native vegetation. The different sorts of Comfrey, although strong growing subjects, are suitable plants for distributing on the sides of wood rides

allowing them ample room to increase in size every time they are cut down after blooming. When forming these groups I have in some cases filled up the bare spaces between the plants with *Pulmonaria* (common Lungwort), so as to get the ground quickly covered, which I think answers better than waiting until covered by natural herbage, as rabbits are so mischievous wherever soil is exposed on the surface; and, moreover, the *Pulmonaria's* spotted leaves and pinkish-blue flowers produced in early spring are doubly welcome at that season. If the groups appear to the eye somewhat stiff in outline, which newly formed clumps invariably do, in spite of care, to give a natural appearance at once a few strong roots of Ferns are dropped in here and there, as it were, at various and irregular distances from the Comfrey, a plan I think worth doing, as the Ferns give an easy and more natural finish to a group than any other plants I have tried. Monkshood (*Aconitum tauricum*) has succeeded well in the woodlands; although not so robust as the preceding ones to fight against rough growing neighbours, it will, however, if liberally treated by giving it a good start in rich soil, be easy to establish in colonies where its dark-blue flower-spikes pushed up into prominent view at this season of the year cannot escape notice. Of course the rabbits do not deign to taste its poisonous juices; it therefore may be freely planted where rabbits—the worst enemies we have in the case of wild gardening—are plentiful.

WHITE FOXGLOVES and improved varieties of the common wild plant are very desirable additions to the wild garden; a group of the white variety of from a dozen to a score of plants growing near the stem of an Oak-tree a little distance from one of the principal rides in the ornamental woods is just now a pretty sight—not a bold, staring, conspicuous-looking colony, but half hid by surrounding subjects. Right in front of the group is a spreading bush, and on either side of the Foxgloves end close to them are some strong vigorous herby Ferns, their fresh green fronds half hiding the tall stalks of the Foxgloves, and giving a soft and refreshing contrast to the erect group of pure white flower spikes. The beauty of a group of flowers may, I think, be much enhanced by its surroundings; in this case the grey Lichen-covered stem of the hurdy Oak and the Ferns, etc., lend a soft and modest look to the smart, showy Foxgloves. A good sight had obliquely in passing either way is, to my thinking, more pleasing to the eye than when fully exposed to the gaze on every side, and in the semi-shade of the Oak-tree the pure whiteness of the Foxgloves and the refreshing greenness of the Ferns seems more strikingly intensified.

MULGEDIUM FLUMERI, a big hardy plant with huge leaves, doubtless flourishes best in a deep, rich, light soil; single specimens of it having been cut in the woods about three or four years, I can vouch that it can be planted in the rougher parts of a wild garden and left to take care of itself, as nothing seems to interfere with its rapid and vigorous growth. As an isolated plant on Grass it presents a bold and uncommon appearance, and when growing among other plants its remarkable leafage forms a strong contrast, and at once arrests observation; its fine and comparatively small flowers are not particularly attractive.

THE *CAMPANELLA LATIFOLIA* is one of the best of the species for the fringes of wood rides and drives. Only given a fair start in well stirred ground with the addition of some light rich soil, and it will soon develop into compact, vigorous, showy clumps, throwing up strong grass stalks laden with flowers. Too well known to need description, suffice it to say that no wild garden should be without this *Campanula*; there are many other varieties varying from 6 inches to 3 feet high, all desirable flowers for naturalising in woods and plantations; the dwarfier kinds of course, should only be planted on rockeries

from the wall, the shoots hanging loosely and smothered with flowers. If the plant gets beyond bounds the shoots must be cut in before growth begins in the spring. The same remark applies if the plants are trained to a wire trellis. Avoid always formal close cropping.—J. D. E.

You can plant in the autumn or during early spring, or either season will suffice. The soil must be moderately rich, and secure good plants in the first instance. Let the shoots alone. Amateur gardeners are fond of hacking with the knife, and thus spoiling many beautiful things through this bold surgery.—C. T.

4557.—**Tobacco.**—I do not think home-grown Tobacco will kill the smoker or I should not have been alive now, but no smoker who knows what good Tobacco is would smoke it. Tobacco grown in this country is not of good quality, no matter how it is manipulated. Years ago I used to grow it for fumigating purposes, and after the leaves were dried they were tied in bundles, placed in a heap, and covered with mats to induce fermentation. When this had set in, they were partially dried and then tormented again. Afterwards they were dried and packed in boxes and stored away in a dry place for use. I have made cigars of the best leaves. I used to smoke them, but the memory of those smokes is not exactly pleasant. It should be understood that Tobacco grown in this country is liable to the same duty as the imported article if grown in sufficient quantity to be of any use.—E. H.

4548.—**Bedding "Geraniums."**—The Zonal you mention are all good. To these you may add *Veevrius*, C. V. Raspail, Sam Jacoby, Aurora borealis, and Gloire Lyonnaise, New Guinea, Anrea perfecta, Omphale, Kate Greenaway, Queen Matilda, Queen of the Belgians, Queen of the Whites (improved), Harry Hoover, Master Christine, Mrs. Deane, Magenta King, Blushing Bride, Crystal Palace Gem, Mrs. Pollock, Happy Thought, Freak of Nature, Her Majesty, and King of the Bronze.—A. O. BUTLER.

Henry Jacoby (deep crimson) and John Gibbons (brilliant scarlet) are two of the best bedding varieties in cultivation; Ed. Sutton I do not know. Other excellent varieties for this purpose are the old *Veevrius* and West Brighton Gem (scarlet), M. Myriel (orimeon), Beckwith's Pink and Mrs. Turner (pink), and Eureka and Niphotes (white). A really good salmon-coloured Zonal for bedding is still wanted.—B. C. R.

The varieties mentioned, except Ed. Sutton, which I do not know, are useful for bedding, and the best for the purpose is the popular Henry Jacoby, which is the finest of all bedders and grown more largely than any other kind. The plant is of strong growth, and the flower-heads large, whilst the colour is intense crimson. It is in every respect a good kind, and also fine in pots, for which it is grown largely.—C. T.

The names mentioned are all good. In addition to these may be mentioned Master *Veevrius* (scarlet), larger and better than the type; West Brighton Gem, very free and effective (scarlet); Mrs. Mules (pink); Lucas (rose); and Queen of Whites.—E. H.

4507.—**Treatment of Lilacs.**—I should certainly recommend you to plant out in the autumn, putting a good handful of silver sand under each bulb, and covering with about 6 inches of rich light soil. If you leave the bulbs in their pots until spring, they will be turning fresh roots, which will be liable to injury during the process of planting out.—A. O. BUTLER.

4509.—**Cuttings of "Geraniums" and Pansies.**—August is the best month in which to put in cuttings of the above, and both of them strike best out-of-doors, the "Geraniums" in the sun and the Pansies in the shade. I strike both of them in light sandy soil; the "Geraniums" in boxes so that they may be removed to a heated house for the winter. Gooseberries and Box can both be propagated freely from cuttings. The Box should be planted in a shady place at once, taking cuttings of the young wood 4 inches to 6 inches in length. The Box used for edging is propagated by division. November is a good month in which to plant Gooseberry cuttings.—J. D. E.

There is no time to be lost now in taking cuttings of "Geraniums." They will want a little warmth to complete the rooting in October. Pansies will strike freely now in a cold frame, either in pots or in a bed of soil covered with glass, a handlight will do. Cuttings of Box will root now in a shady border, and Gooseberry cuttings as soon as the leaves fall. Select the best and straightest young shoots. They should be at least a foot long.—E. H.



OUR READERS' ILLUSTRATIONS: *Bocconia cordata*. Engraved for GARDENING ILLUSTRATED from a photograph sent by Mrs M. Gurney, Thelkthorn, Hethersett, Norwich.

or other rough spots, and a very pretty contrast they give at a little distance when exhibiting their drooping flowers of many colours, obtained by planting groups of different kinds together of half-a-dozen or more plants, composed of the white, blue, and purple varieties, with a plant or two of *Anemone italica* amongst them, this being a natural relation of the Comfrey. They are planted in an informal group, some rather close together, others 3 feet or more apart, thus

or other places clear of rough and tall vegetation.

THE SPIRÆA, or Meadow Sweet, is quite at home in the woods on the sides of lakes and ponds. *S. Aruncus* and *S. Gmelini* are just now in full bloom; their numerous white plumes waving to and fro in an exposed open glade of the woods are conspicuous ornaments at a great distance off, and even when under close inspection they are none the less graceful and beautiful. The rosy broad corymbs of *S. venusta* form a fine contrast to the white varieties. It is, however, hardly so vigorous a grower, and should be planted in strong clumps or roots, and where it is not likely to be overgrown by rougher plants. These Spiræas are great feeders, and thrive best in deep, rich, moist soils. If the situation is dry and inclined to poverty, a mulching of manure in autumn is of great service until they become thoroughly established in their permanent quarters; indeed, small woody plants of any kind should not be used for wild garden planting, but should be grown on in a nursery or trial ground for several years preparatory to planting out in rough places.

HEMEROCALLIS DISTICHA AND FLAVA are a success in woods; solitary plants of the former variety underneath old Thorn bushes where herbage is short and bare thrive wonderfully well, and rabbits do not seem to interfere with them. *H. flava* is planted in a colony, with the Poet's Narcissus between. Being a very prominent site, it was thought desirable to decorate it with flowers as long as possible. The bloom of the *Hemeroallis* quickly succeeds that of the Narcissus, and keeps up a succession of flowers well nigh through the summer. The *Hemeroallis* does well in almost any kind of soil; even in a wet site on a heavy clay a clump of *H. disticha* flourishes and increases in size yearly.

THE BROAD-LEAVED SANFRAGE, with pinkish flowers, is an excellent plant for the wild garden. It has been growing in the woods about four years underneath an old Thorn-tree, and blooms beautifully; nothing appears to molest it or check its development. It is one of the best of the prominent class of plants for woods or wild gardens. The broad, glossy leaves and spikes of pinkish flowers are distinct and pretty, and contrast strongly amongst native plants.

IRIS (SPANISH OR NARROW-LEAVED).—A blue variety of this has been tried in the woods here with partial success. Where planted in bare ground rabbits have nibbled and more or less damaged many of them, but where the herbage was moderately strong they have grown on and multiplied. When scattered about indiscriminately in small groups in a green glade, they are both natural looking and effective. The kind to which I allude is a dark blue variety with a white eye in the centre of the falls, a very common sort in cottage gardens about here. It grows freely in almost any kind of soil and increases rapidly when once established. Doubtless the majority of the Iris family, both broad and narrow-leaved, are most desirable plants for the wild garden, either for planting on Grass or for decorating the fringe of a lake or pond. Judging from the appearance of a collection of Irises in the trial ground in our nursery, each having formed strong roots, one can form some idea of the beautiful effect which they will present when transferred to grassy glades or other wild and suitable spots.

OMPHALODES VERNA has been established several years in various sites alongside the wood ride. Although it grows well enough and soon spreads about where the Grass or herbage is not too rank or strong, I have found that it will not flower freely unless it is planted in a warm corner and fully exposed to the sun; indeed, if the position be a shady one no flowers appear. Near one of the wood rides there is a good mass of this sprouting, intermixed with *Camassia esculenta*, which is well shown off on a sparkling blue carpet of flowers in spring, and no sooner have the charmingly Forget-me-not-like flowers of the *Omphalodes* passed away than they are succeeded by the none less beautiful blue star-shaped spikes of the *Camassia*. After the latter has done blooming, and its foliage has withered, the *Omphalodes* forms a secure sheltering rug for the bulbs, keeping them secure from all enemies and out of danger way. The *Omphalodes* should be planted where the natural growth is not too strong, and if the

ground be thin and poor, a top-dressing of rich light soil spread thinly over all in the autumn will be very beneficial, as the *Omphalodes*, after extracting the goodness out of the soil, is inclined to wander off in search of fresh food, and will attempt to establish a new colony elsewhere; in the woods, however, the rank growth of weeds very often prevents too much for it, and eventually it loses itself amongst strong growing natives.

G. B.

4505. — **Manuring ground.**—In my opinion it is not wise to dig into the ground artificial manure of any kind, for the reason that all these stimulants are quick in their action, and their worth would be wasted if applied in the autumn. The best plan of preparing the ground for any kind of vegetable crop is to trench it 2 feet deep in the autumn, keeping the surface soil in the same position, and returning that from the bottom of the trench to the same place again. If the soil is heavy and retentive a layer of long straw manure, wood ashes, old potting soil, or decayed vegetable refuse, laid between the top and the bottom spit of soil, will do an immense good, rendering the whole in a better working condition. Trenching should be done as early in the autumn as possible to admit of the full winter's frost to act upon the soil and to allow it time to settle down before the spring crops are put in. It all depends upon the kind of crop to be grown what sort of manure should be recommended and how applied. In the case of Potatoes superphosphate of lime and kainit, two parts of the former to one of the latter, sprinkled in the rows at planting time is an excellent stimulant. In the case of any of the Brassica tribe a teaspoonful of nitrate of soda sprinkled on the soil about the stem when partly grown, choosing a showery time, is good. For Carrots, Parsnips, and other roots a very small quantity of dissolved bones mixed with wood ashes at the time of sowing the seed will suffice.—S. P.

4513. — **Neapolitan Violets.**—The month of April, or not later than the beginning of May (in a backward position or season), is the right time to make a Violet-bed, though strong roots may be removed in the autumn (October), and will flower well the following spring. It is best, however, to start with the single runners, or crowns, planting them in the spring in a sheltered but sunny bed of loamy soil that has been well dug and manured. Plant the runners 6 inches or 10 inches apart, with a little more space—say 12 inches—between the rows, and keep them well watered in dry or hot weather. The runners should also be removed as fast as they are formed, as in dealing with Strawberry plants. There is only one kind of Neapolitan Violet—viz., the double lavender purple, with white eye. This and Marie Louise are still two of the very best in cultivation, though *De Parme* (purple), the *Swanley White* (syn. *Comte Brazza*), and *Belle de Chateaux* (white) are also well worth a place.—B. C. R.

— Marie Louise and De Parme are the best double Blue Violets; *Comte de Brazza* the finest white. If well established roots can be procured any time this month, and planted in rather sandy soil in a cold frame, abundance of bloom should be obtained from the middle of October until the same time in March. Without the plants have been prepared specially for winter-flowering it is useless to expect a full crop of flowers. By removing the runners during the summer the whole energy of the plant is concentrated in the maturation and development of the crowns. Some persons say that bottom-heat is necessary to give good results, but this is a mistake. Place an ordinary cold frame in a sunny position, where it will be out of north or east winds; a 3-inch thickness of soil is sufficient for the plants to grow in, the remainder of the frame underneath should be filled up with faggots or clinkers; anything to provide ample drainage, and to raise the plants close to the glass. In planting, the leaves of one plant may just touch those of its neighbour. Give a thorough soaking of clear water to settle the soil about the roots. The lights need not be put over the plants until there is danger of frost injuring the leaves. The sides of the frame should be protected from frost with manure or freshly-gathered leaves; double mats will do the same thing on the glass. Abundance of air

during the winter when the thermometer out-of-doors registers a few degrees above freezing, will be an advantage in keeping the plants stocky and free from damping of the leaves. Water will seldom be required. Thoroughly examine the soil a few inches deep before applying any water; then if necessary give a good soaking in preference to dribbles.—S. P.

4545. — **A fine Sunflower.**—Your question loses in interest because you have not indicated the kind, whether an annual or one of the perennial species, which are often very tall. If an annual, then the height is unusual—7 feet or 8 feet even being one of the common. But such perennial species as *Helianthus giganteus* will grow even 10 feet high, producing slender shoots which wave about in the wind, with delightful flowers, exquisitely graceful, and free. They are very different to the ordinary annual kinds, having small yellow flowers comparatively, but they literally smother the shoots.—C. T.

ORCHIDS.

LÆLIA PERRINI.

FROM "James Elliott" comes some flowers of this plant; but they are so thin and had in colour that I feel constrained to say something about the species in order to assist him and others in having this plant at its very best. When, of course, if the plant or plants do come of a had colour I should advise them to be destroyed, for there is plenty of it in the country, and of good form, so that the bad ones should be stamped out. It is a plant that has been known in our gardens for upwards of sixty years, and I do not think it has ever been lost since, and it has not appeared to vary much in that time; but certainly those sent and now before me appear to be the worst-coloured flowers I have ever seen without the variation being either pleasing or acceptable, and I know of but two or three varieties which are worth recognising, and which I will include. *Lælia Perrini* appears to have lost favour amongst Orchid growers on account of its flowers going off somewhat rapidly after expanding; but then its colour is so distinct and so intense that no one can but be enchanted with it whenever seen, and from the fact of its blooming usually in the month of October they are always welcome. It appears to be a native of the Organ Mountain district, in Brazil, and it enjoys somewhat cool treatment during the winter after the flowering season is over, and I advise the plants to be placed in a temperature as near 50 degs. as possible at this time until the early spring, and not to be kept dry enough to cause them to suffer, because I have proved that reduction of temperature is one thing conducive to complete rest, and the one thing that impels strong and vigorous growth and an abundance of flowers. It must be well drained, and its roots should not be encumbered with a great quantity of soil, and this should consist of good brown peat fibre and chopped Sphagnum Moss, raised upon a slight elevation, and the soil pressed down firmly.

L. PERRINI.—This plant has somewhat compressed bulbs, which are oinb-shaped, from 6 inches to 1 foot high, bearing a single oblong dark-green leathery leaf. The flowers are large and spreading, between 5 inches and 6 inches across, sepals and petals a soft, rosy-purple. The three-lobed lip is the same colour as the petals on the obovulate side lobes, the middle lobe narrow and pointed, white or pale-yellow on the disc, with a border of intense deep purplish-crimson, and not a dirty rose-colour, as in the flowers before me.

L. PERRINI ALBA is a gem of the first water, and indeed it seems perfectly wonderful how the typical colours can become so completely obliterated, for in this form the flowers are perfectly white, without a spot or bluish of any kind. It is one of the rare gems to be sought for, and if my readers ever chance to get the offer of a plant they should have it, especially if the price is reasonable, but they must be sure not to be misled by the variety called

L. PERRINI NIVEA, which is also a very charming plant, and it has during the past year or two become more frequent. The flowers are as large as the type, having the sepals and petals of the purest white, and the lip is white or pale-yellow, bordered with rosy-pink.

L. PERRINI IRONATA is yet another form of this plant, having the sepals and petals of a delicate soft rose-colour, and the lip white, bordered with bright light purple, the disc pale-yellow.

I cannot remember to have seen any other forms that are worthy of recording, and such kinds as represented by the flowers sent by "J. E." I would at once destroy, after the blooming season is over, which usually lasts for a fortnight or three weeks; but I have seen the blooms all pass in about a week's time when the plants are removed from a moist house to one with a dryer atmosphere with a view to prolong their beauties; indeed, I am averse to removing the plants from the house in which they are

in the year 1800 it first came to this country in a living state, and I do not think it has ever been absent from our gardens since; beside, however, the original spot from whence it came, further botanical research has found it to be widely distributed over the Indian peninsula, and in various varieties and forms it has been found to exist. One which I think was introduced by Mr. Linden, and called *longira racemosum* was exceptionally good, but the flowers were set somewhat laxly upon the raceme. A variety named *blrmanium*, more recently found by Boxall whilst collecting in Burmah for the Messrs. Low, appears to be a distinct and pretty form. It has smaller flowers than the typical form, and they have the

blooms, some 6 inches to 9 inches in length, the blooms being pure waxy white, tipped with bright rich purple. These will remain in full beauty for three weeks or a month, and the delicious perfume which they yield is very charming. "W. S." appears to be treating the plant quite right for the growing time, but I do not think he reduces the temperature enough to give it a good rest. When I had the best-flowered plants of this kind was after they had passed the winter in a temperature of about 55 degs. to 60 degs., and during this time they had very little water; but in the spring the lowest was about 65 degs., and they had a nice moist atmosphere. You have asked the question in good time; and try my system during the coming winter and let me know the result next May.

MATT. BRAMBLE.

HOUSE & WINDOW GARDENING.

FERNS FOR INDOOR DECORATION.

In reply to several queries regarding Ferns for the house, the plants should not be kept too long indoors, and it would be well to remove them for two or three days into a shady part of the greenhouse from the fernery before putting them into the dwelling-house. The genus *Phlebodium* contains one or two beautiful species for this purpose. *P. aureum* is especially valuable, making fronds some 3 feet to 6 feet in height, deeply pinnatifid, and of a bluish-green colour, the stout rhizome being clothed with large scales. *P. sporodocarpium* is another beautiful plant, which grows some 2 feet or 3 feet high, and the fronds are very glaucous. Of the Ribbon Ferns (*Pteris serrulata*) there are many varieties of great beauty, all of which are very suitable for room decoration. *P. tremula* is largely used. There is a beautiful crested variety of this called *Smithiana*, which stands well indoors. *P. longifolia* is another species of great beauty, and to also are *P. cretica* and its variety *albo-lineata*. The variety *Mayi* is even more valuable. Turning from these to the Maiden-hair Ferns, several make delightful ornaments in a room. Among these are *Adiantum formosum*, a tall growing species with beautiful jet-black stems and rich green pinnae; *A. affine*, *A. tenerum*, *A. glaucophyllum*, and *A. cuneatum*. Amongst the *Lomarias* will be found several fine plants for this purpose, *L. discolor* being amongst the most beautiful. For this, however, a certain amount of room is necessary. *L. gibba*, *L. fluviatilis*, a lovely plant, more especially when its fertile fronds are of full size, and many other kinds might be named. *Neottopteris australasica*, with its broad simple fronds, forms a very striking object. *Oxyphium japonicum* is another plant of a light and graceful nature. The *Aspleniums* are a large family, among them being many plants which are very suitable for places of this description, *A. bulbiferum*, *A. dimorphum*, *A. Fabianum*, and *A. plumbosum* being conspicuous amongst the larger growing kinds; while such kinds as *A. fragrans*, *A. Bolanderi*, *A. pulchellum*, *A. Richardi*, *A. myriophyllum*, and *A. formosum* are all very handsome, small-growing kinds. *Todea africana* is also another bold-growing plant with stout leathery leaves, well suited to withstand any amount of draught, as also is *Dicksonia antarctica*, which will be found useful when small. The above-named plants will make up a very nice collection to draw from, and they may be all easily grown into good useful specimens. They should be potted in moderately sized pots, which must be well drained. They should be grown in a nice moist atmosphere and be occasionally syringed overhead.

J. J.

Geznera cinnabarina for a room—

This plant, with very handsome velvety leaves, veined with crimson, surmounted by spikes of scarlet and orange flowers, is one of the most effective of table-plants, lasting long, too, into the winter. *Gezneras* are not so well-known as they should be; they present no special difficulties in cultivation, except that they must be started and grown in the damp air of a hot-house, although they will bear the atmosphere of a room for some weeks when in full beauty. After flowering, the leaves should be allowed to die away gradually, water being gradually withheld until the stems are quite dead, when the pots containing the curious tubers of *Geznera*



A good window Fern—"Pteris cretica."

grown and in which the blooms open, because I think there is more likelihood of their lasting a much longer time if left alone.

MATT. BRAMBLE.

AERIDES ODORATUM.

I AM asked by "W. S." to say something about this plant, which he is very anxious to flower. The speculae, he says, he has had three years, and it grows very well, but it has not bloomed, and from what he says I fancy he is like a very great many of the amateurs, looking more after the propagation of the plant and the dividing it than to the making of it into a good specimen which shall eventually yield a good supply of its deliciously-scented flowers. This plant was first found in Cochin China, I think, more than a century ago, by the Portuguese missionary Loarelro; but some time

tips of the sepals and petals faintly coloured with purplish-lilac. Several fine forms too I have seen under the name of major; but the best and most bold and robust kind which I have seen is the form known by the name of *purpurascens*, which is stouter in its growth, with broader and darker green leaves and stouter trusses of flowers, the raceme too being longer, and the individual flowers larger and the colour more vivid. The worst form I have seen is a kind that makes a very small spike, and with the flowers are very pale-coloured. However, I hope "W. S." has not got this form, but in the event of his having become possessed of it he will find the blooms very sweet-scented. And now for a little about the management of this pretty and easily-grown species (which, when done well, is not easily surpassed). I have had specimen plants which bore annually from fifty to eighty trusses of

should be kept in a warm corner of the conservatory until the spring arrives. Repotted then, much in the same way as a *Tabernaemontana*, and brought on in heat, the plant soon starts into new life and beauty, and will be most useful in table decoration during the autumnal months.—I. L. R.

FREESIAS FOR A WINDOW.

No one who values flowers in winter should be without the *Freesias*, which are easily grown, and most elegant in form also, the flowers being either pure-white or spotted with apricot, which is often the case with seedlings. The secret of success in growing *Freesias* is to pot the bulbs early. They will not do anything if kept long out of the soil, and as they naturally begin their growth during August they should be potted during that month at latest. A compost of leaf-mould and turfy loam, with a little soot and sand, will suit them well, and the pots must be clean, and well drained with potsherds, covered with Moss, sprinkled with about a teaspoonful of soot, which will have the double effect of nourishing the bulbs and keeping away insect pests. Eight or ten good-sized bulbs (they are naturally very small in comparison to the bulbs of other plants) will go into a 5-inch pot, being placed rather low in the soil, to prevent the stems from falling over the edges of the pot, which they are apt to do unless this precaution is taken. *Freesias* will not bear much forcing, and should be grown out-of-doors until the end of September in a sunny place, where they will soon form their "grass," and grow sturdily and strong, when they may be brought into a sunny sitting-room window, where a fire is kept daily, and placed close to the glass, giving as much air as possible, but without a cutting draught, which they will not stand. They need a regular supply of water when they are in their growing stage, and must never at any time become dust-dry. Many amateurs kill their *Freesia* bulbs by neglect after blooming, not knowing that they must still be kept fairly damp then, and allowed to take as long as possible to ripen their bulbs for the next season, for it is during this time of untidiness that they form their blossoms in the bulb. Well-grown *Freesias* should bring two or three fine sprays of bloom from each bulb, and the foliage should be stocky and short, not needing much support. The earliest blossoms open a little before Christmas, and by starting the bulbs each week in August a succession of blooms at the time of year when flowers are most in demand may easily be secured. Of course, the time of blooming will vary with the amount of sunshine and warmth the bulbs may have, but with the help of a fine autumn to bring on the plants quickly through the earlier stages before they are brought in there should be no difficulty in having them open before the new year.

I. L. R.

4559.—Heating a greenhouse.—For heating a greenhouse of the dimensions you give a substantial system of heating is necessary, or in time of severe frost you will come to grief; but however substantial it may be, I cannot recommend you a system that will do with attention only once in twenty-four hours. You cannot do better than fix a boiler of the Loughborough pattern at one end of the house, and have two rows of 4-inch pipes along one end and the two sides.—J. C. C.

Four rows of 4-inch hot-water piping, heated by either a small saddle boiler or a No. 4 or 5 "Star" (upright independent cylindrical)—the latter would require the least attention—would be the best means of accomplishing the desired object. A brick fire, or one composed partly of bricks and partly of 9-inch pipes, would be considerably less expensive in the first place, and work steadily with very little attention, but if carried along three sides of a house of this length rather a lofty chimney would be required.—B. C. R.

Several excellent apparatuses are made by firms advertising in GARDENING. I think you will find the "absorption" heater constructed by Toope and Sons, of Stepney, as good as any.—B. C. R.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruits and vegetables for drawing. The drawings so made will be engraved in the best manner, and will appear in our paper in GARDENING ILLUSTRATED.

FERNS.

THE LADY FERN (ATHYRIUM FILIX-FEMINA).

I AM asked by "A Rambler" if this plant will thrive in town gardens, and where to plant them. Well, I should say this and the numerous varieties which it runs into is the most desirable *Fere* for any amateur to have in his or her garden. There are many varieties of this *Fere*; indeed, I have frequently remarked, when reviving about through vast quantities of it, that any amount of varieties could be obtained, but it would be difficult indeed to get the typical condition of the species now amongst such a vast quantity of forms. Some of these are more curious than beautiful, but some of the kinds are exceedingly pretty, and when growing where their toes can get into the water they form grand ornaments, so that I would advise my friend to make a nicely-sheltered place in the garden for them. This is quite an essential, or else the fronds will produce a broken and ruptured appearance throughout the whole season. Beside shelter, too, these plants require to have ample root room, and a good depth of soil; the kind of soil is not so very particular. If like a good light sandy loam the best of all, and if a running stream can be introduced through it, or if a piece of ground can be utilised in the vicinity of a running stream, you will

INDOOR PLANTS.

ABNORMAL FORMS OF THE ARUM LILY.

DOUBLE-SPEATHED forms of the *Arum Lily*, as in the illustration herewith, occur frequently with those who grow this plant very strongly. Some years ago I was engaged in working up a stock of these plants, and, in order to raise the required number from the few plants which I then possessed, all the suckers as they appeared were taken off and rooted in small pots. This operation was commenced as early in the season as possible, the young plants being grown on in an early Peach-house. By the middle of June they were gradually hardened off and planted outside in a trench prepared similar to what we use for *Celery*. Many of the plants when placed out-of-doors were strong and well established in 7-inch pots, and the smaller ones in 5-inch ones. In planting, abundance of manure was placed about the roots, and good soakings of water given when the weather was dry. In September the plants were lifted and placed in 12-inch pots, as I could not get the mass of roots they possessed into smaller sizes, using for a compost rich loam and decayed manure. After lifting, the plants were placed behind a north wall and kept well soaked with water and syringed until they were again established. On the first appearance of frost they were housed and kept cool until Christmas, by which time they commenced throwing up their spathe. Towards the end of January and all through the following month more than half the plants produced abnormal spathe. This was attributed to their remarkable strength and the liberal feeding which they received. They did not only produce a solitary double spathe or two, but many in succession during the whole of the season. The same thing has occurred with the strongest *Callas* every year since, but the same plants when not grown strongly only produce single spathe. T.



Double spathe Arum Lily.

4560.—Treatment of Hippeastrum bulbe.

—The ordinary garden varieties may be grown to flower freely every year, or they may be grown to flower seldom or not at all. They have a decided season of growth and a season of rest. They are now entering into the resting period, and should have no water at the roots from now until they start into growth early next year. They are repotted in January, and placed in a growing temperature, and if they were well cultivated during the flowering and growing season, 90 per cent. or more of them will flower. They begin to flower early in March and continue to do so until the end of April. Sand, peat, and leaf-mould is too light to flower them. The best compost is three-parts yellow loam, one of peat, and one of decayed manure, and a little coarse sand. Do not use large pots. Good-sized bulbs can be flowered in 5-inch and 6-inch pots. After flowering grow them on in a good temperature until resting time in September again. They will make plenty of leaves if grown under the shade of Vines, but few flowers.—J. D. E.

4549.—*Bignonia capreolata*.—You should have no difficulty in getting this plant to flower if grown in a large pot or tub. Seeing that you get plenty of growth, I think you must have out away in the winter the shoots which would produce blossoms the following season. If there is much growth on your plant now cut half of the shoots away at once, and in the winter reduce the length of those left one-third. The resultant growth from this shortening hack should flower the next season. This is nearly a hardy plant, so perhaps you keep it too warm.—J. C. C.

4562.—Catching Rabbits.—The most certain way to catch these beasts out of your garden would be to surround it with strong wire fencing, sunk to about 15 inches in the ground.—A. G. BUTLER.

4562.—Unhealthy Fuchsias and Ferns.—The plants are attacked by thrips, these being the result of an overdry atmosphere and probably an insufficient supply of water at

the roots as well. I cannot remember a season in which greenhouse and other plants required to be so abundantly supplied with water and atmospheric moisture, and so in many cases the supply of water has been limited, insects of this description have been unusually troublesome. Lay the plants on their sides, if possible on some Grass, and syringing the undersides of the leaves thoroughly with moderately strong Tobacco-water, Fir-tree-oil, or some good insecticide, and afterwards with clean water. Repeat the operation twice or thrice until the insects are got rid of, and keep them at a distance in the future by the frequent use of the syringe and maintaining a fairly moist atmosphere above the plants.—B. C. R.

CHOICE STOVE PLANTS.

JASMINUM SAMBAC FL.-PL.

This plant comes from the East Indies; its exquisitely scented flowers are ivory-white in colour, double, the petals much pointed, which takes off the formality in appearance generally present in flowers that have rounded, smooth-edged petals. It is a remarkably free bloomer, but, like most others that continue in flower for a long period, is never clothed with such a profusion at one time as those that produce blossoms from each shoot alternately. The flowers are borne on short, lateral shoots, usually furnished with a few small leaves, that proceed from the axill of the leaves on the stronger growths, which in a healthy plant generally keep on blooming all through the summer and autumn so long as its growth is being made. This is an advantage, as it admits of almost every bit of bloom it makes being utilised for cutting, for which purpose it is the best adapted, as the successional habit of blooming does not admit of its ever making so great a display on the plant as if the flowers opened all together.

CUTTINGS strike easily when they can be obtained with some freedom of growth in them, but the shoots that are disposed to form flowers as soon as they have attained 1 inch or 2 inches in length, even if they made roots, are a long time before they can be induced to grow freely. In the spring, about the beginning of April, cuttings of the right description may generally be had; these should be a few inches in length, but not with the wood too hard or matured. Take them off with a heel and put them singly into small pots three parts filled with a mixture of three-fourths sand to one of loam, the surface all sand; keep moist, close, and shaded in a temperature of 70 degs. or a little more. They will strike in a few weeks, when see them to bear the full air of the house and stand them on a shelf or some other moderately light place. When a fair quantity of roots made move the plants into 3-inch or 4-inch pots, using good turfy loam with some sand. They will now do best with a brisk stove heat, giving air in the daytime with a little shade when the sun is powerful, syringing daily, maintaining a moderately moist atmosphere. After a few inches of growth have been made, pinch out the points of the shoots, for the plant has naturally a thin, erect habit of growth, and to induce the formation of sufficient branches it is necessary to resort to stepping, although it is by no means desirable to attempt to restrict it to a bush-like form. It is best

ROWN ROUND A PILLAR or wound round a few tall stakes inserted just within the pot; being a spare rooter, it must not have too much room, either in a pot or planted out. In July move them into pots 3 inches or 4 inches larger, and again step the shoots. Treat generally through the summer as recommended until the middle of September, when cease shading, give more air, less moisture in the atmosphere, and reduce the temperature; during the winter 60 degs. or 65 degs in the night will be enough, only just keeping the soil a little moist. Towards the end of February increase the warmth, and when growth has fairly begun again pinch out the points of the shoots, and move to pots 2 inches or 3 inches larger. In the matter of heat, moisture, air, and shade treat as in the preceding summer; they will this season bloom from all the growths they make. When planted out, the soil to which their roots have access must be limited to a small space, or it will most likely get snar. If confined to pots, all they want in subsequent years is to give more room as it is

wanted, not attempting to shake out the plants or disturb the roots more than can be avoided. A little manure-water in a weak state will be an assistance. The plants will last for many years. There is a single-flowered form of this Jasmine differing little in its appearance, except in the flowers. It succeeds under similar treatment to the kind under notice. This Jasmine is liable to the attacks of most insects that affect plants grown in hot. Thrips and red-spider, which are partial to the leaves, can be kept down by syringing. If any insects of a worse description, such as scale or mealy-bug, make their appearance, sponge with insecticide, finishing with clean water. T.

4522.—An Ivy-leaved "Geranium."—Set the plants outside in the sunshine to ripen the growth, but take indoors before frost comes.—E. H.

—The best plan will be to cut out all the dead and some of the weak wood next, and if it seems to require it to cut it down as low as you like in the spring, about April. It is rather late to cut such a plant in a cool house hard back now, it might kill it, but in the spring it may be safely reduced to any extent, and will quickly break out and commence flowering again.—B. C. R.

4531.—Tortoise stoves for greenhouse.—A small form of this stove would give you all the warmth you require to heat a greenhouse of the size you mention, but are you aware that the dry heat of this end similar stoves is altogether unsuitable for plants? An occasional fire would not do much harm, perhaps, but if kept alight regularly the foliage of most plants would soon get covered with dust and die away. It would be better to use an oil-burner, and only light it on frosty nights.—J. C. C.

—I have no great faith in this make myself, and indeed there is as yet no wood next, and if it seems to require it to cut it down as low as you like in the spring, about April. It is rather late to cut such a plant in a cool house hard back now, it might kill it, but in the spring it may be safely reduced to any extent, and will quickly break out and commence flowering again.—B. C. R.

4567.—Violets in frames.—The best and only sure method of obtaining plenty of Violets in winter is to plant out the runners singly in April, to rich ground, keeping them well watered. By the autumn each will be a strong clump, which may be potted or simply "laid in" in the frames. Old or starved roots never do much good; the runners should be cut off.—B. C. R.

—Place a cold frame in a sunny position and protected also from north and east winds. Place sufficient faggots or old Pea-stalks at the bottom of the frame that will raise the plants close to the glass, allowing for 9 inches of soil. The wood provides ample drainage for surplus water. Anything approaching waterlogging about the roots is detrimental to the development of the flowers. Over the wood lay a thin covering of litter to prevent the fine soil running down among the wood. Road-scrappings are useful for mixing with good garden soil, decayed vegetable refuse, and rotted leaves, as they contain much grit, which the roots of Violets are partial to. A moderately-light but not overrich compost should be prepared. Lift the plants from the ground with a trowel, retaining a small portion of soil with the roots. If the plants are large, having several crowns, all the runners should be poked off, but if they are small plants let the runners remain. Give sufficient space between the plants that the leaves of one will touch those of its neighbour. Give a good watering to settle the soil about the roots, but do not put the lights over the plants until there is fear of frost injuring the leaves, and then tilt them when raining, and when hot, and the thermometer out-of-doors stands above 35 degs., pull the lights off altogether, the object being to give the plants as much air as possible to induce a stocky growth. Although a degree or two of frost will not hurt the Violets it is not wise to expose them to it—the foliage ought to be preserved intact; a lining of long litter or freshly-gathered leaves will protect the outside of the frame; a double thickness of ordinary mats over the glass will suffice in that part. But little water will be required during the winter, although the plants must not suffer for want of it. Next April the plants should be pulled in pieces, planting them out again on a west border. The present is a good time to place the roots in the frames.—S. P.

4570.—Gloriosa superba.—The tubers of this plant will sometimes lie in the ground a long time before they start into growth; but as long as these remain fresh they may be expected to grow sooner or later. This is not the best time for them to start; it is the worst in fact. I would let the bulb remain where it

is. Keep it in a warm-house temperature, not too hot. Give no water. Pot the bulb again in the spring, and start it to grow in a nice bottom-heat in the forcing-house.—J. D. E.

—I am of opinion that a great deal more fuss has been made over this plant than it deserves when cultivated in this country. I cannot see any great beauty in a bunch of flowers placed at the extremity of a long twisted growth, with the foliage often of a yellowish, sickly hue, owing to the roots heaving had too much water and not sufficient warmth. With regard to the bulb to which this question refers, its remaining dormant for so long is not altogether contrary to experience. That being so, no further attempt should be made to induce it to grow this year. Do not give it any more water, and lay the pot on its side on the floor of the house, where the temperature is not less than 50 degs. Next year repeat the same treatment in the spring as you did last.—J. C. C.

4580.—A greenhouse for profit.—Unless the plants have already been prepared there would not be any chance to grow flowers for profit. These who sell flowers in the winter have to prepare the plants that are to produce them in the summer. Chrysanthemums are good winter flowers and can be produced without heat, or at least enough to keep frost out. The white varieties, such as Lady Selborne, Mrs. Rundlo, and Lord Eversley, for the latest should be grown. White and Red Carnations, such as Madame Carl, Mrs. Moore, and Winter Cheer, would be the best. The White Roman Hyacinths are also excellent winter flowers. Rhubarb could be forced under the stages, and the flowers could be grown above it. Many persons make a profit by selling plants of the Chinese Primula.—J. D. E.

—Rhubarb will perhaps pay as well as anything if there is a local demand, but after the fuel is paid for there will not be much profit. As prices are now small houses will not yield much profit.—E. H.

4571.—Phygelanthus albens.—I am not surprised to hear that you failed to get this plant to flower, as no doubt you gave it too much heat and not enough air in summer. Thirty years ago I flowered it beautifully trained to the roof of a conservatory, in which the winter temperature did not exceed 50 degs., and which was well ventilated in summer. It is not a suitable plant for small houses or for amateurs, and as it is possible that the cold nights we are having will have injured your plant, I cannot recommend you to devote any more time or space to it unless you have plenty of the latter. If you decide to take it under glass again you must do so at once, but I am afraid the disturbance to the roots will cause the flower-buds to wither away.—J. C. C.

4555.—"Geranium" outtings.—The only way you can hope to succeed in wintering these without artificial heat is to set the frame on a firm, dry bottom of ashes, &c., in a very sunny and sheltered spot, say in the angle of two walls facing south and west. Bank up the sides well, on the first approach of cold weather, with ashes or turf-sods at least a foot thick. Ventilate the plants abundantly on all fine warm days, but close the frame before the sun goes off it, and if even a slight frost appears probable cover the glass well with mats, old coats, carpets, or the like. In very severe weather place two or three thicknesses of the above on the glass first, then a foot of straw or dry Fern (Bracken), and a piece of thick tarpaulin or some waterproof material over all to keep the whole in place and dry. The outtings must have been struck early, be well hardened, robust, and thoroughly established in the pots, and from October till March should have only a very little water in the forenoon when the weather is very mild and sunny, and none whatever in frosty weather. Ventilate whenever safe to do so, but close and cover up in good time, and do not uncover too soon after the frost is gone. If your locality is fairly mild, and the winter not very severe, you may hope to save most of them. But contrast this with the treatment of Tuberosa Begonia, which may be started away for the winter in a kitchen cupboard.—B. C. R.

—You may keep the outtings in such a frame, but you will have to protect the plants in severe weather by heavy coverings of straw or mats. But it would be far better if you have

a frame heated only just sufficiently to keep out frosts, to put the cuttings in that, than in a cold frame, because there will be great treble in winter, especially if so prolonged or severe as recent ones, to preserve them from frosts, which will soon settle them. Only a little heat is required, and it is essential also not to keep the soil wet. During the winter, when cuttings are required only for hedging-out next spring, the great point is to get them well hardened, and to this end the soil must be almost dry, only giving water when really necessary, otherwise you will lose a quantity through damping off. A humid atmosphere promotes decay. Remove all decaying leaves, and on fine days let in a little air in the midday, so as to maintain the air in a sweet condition. As the spring comes the plants should be repotted and then grown on.—C. T.

Much depends upon the condition of the cuttings. If they are in a firm, well ripened condition and well rooted, they will not be so likely to damp. Plunge the pots in dry ashes before the approach of winter. Ventilate freely whenever the weather is favourable. Whenever watering is necessary, give it on fine bright days, and leave the lights off for two or three hours afterwards to dry up damp, and do not spill a single drop of water about the frame. During frosty weather keep the plants dry, and if the frame is not uncovered for several days during frost they will take no harm if the frost is kept out. To keep out frost, surround the frame with ashes as dry as they can be obtained, or long, dry litter will do. In ordinary weather double mats on the frame will be sufficient, but when frost sets in cover the mats with dry litter or Ferns over the mats. A waterproof covering over the litter will be an advantage.—E. H.

You had better not attempt it; you will be certain to meet with disappointment. A deep frame fitted with shelves, a small oil-lamp, and a chimney to carry off the fumes of the oil might answer somewhat as a small greenhouse would, but I should imagine that even then the plants would be apt to get mouldy and damp off.—A. G. BURMAN.

4603.—Compost for the Oleander.—So long as this is fairly rich and upon it does not so much matter what it consists of. Peat, leaf-mould, and loam, in equal proportions, will answer splendidly. Let the pots be thoroughly drained, as, although a water-loving subject, and partial to liquid manures, the Nerium Oleander greatly objects to anything approaching stagnation.—P. U.

POULTRY & RABBITS.

4454.—Breed of poultry.—I, I fear no poultry keeper will admit that there is any heat breed of poultry for the tables, for each variety has its admirers. The various breeds of Dorking or Game, or Indian Game, are however all in the front rank, and it is possible that individual strains of either would be pronounced by the best judges to be all that can be desired. A cross between any two of the foregoing would produce chickens of really excellent quality. 2, This is a question of strain as regards the laying properties, but, in past years, the Houdan would be likely to take the palm, since it was at that time an excellent layer and no one could complain of its table qualities. If we are asked to select another fowl to meet the quietest requirements in this section, I should suggest a cross between some really good layer, such as the Leghorn or Minorca, and one of the breeds mentioned above. 3, Game or Dorking are generally considered the best mothers, as they take great care of their offspring, and brood them for several weeks. It rarely happens either that these hens leave their nests whilst sitting. The heavier fowls, Cochins, Brahmas, and the like, are also good sitters and mothers, but some people think them cumbersome. Half-bred hens with one of their parents of a non-sitting breed will generally all well, but they are often flighty, and a hen that is too active is seldom a really good mother.—DOULTON.

4504.—Feather-eating.—It is not usual for fowls that have a good Grass run to eat each other's feathers, although I have had it occur in my own experience during dry, hot weather when worms and other food of this kind could not be obtained. They will discontinue the practice after rains when their usual food becomes more abundant; but if they persist in the practice through sunshine and showers, summer and winter, there is to be done but to kill them.—J. D. R.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in *GARDENING* free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of *GARDENING*, 37 Southampton-street, Covent-garden, London. Letters on business should be sent to the Publisher. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as *GARDENING* has to wait a press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in *GARDENING* should mention the number in which they appeared.

4572.—A new lawn.—Should a newly-covered lawn be covered with burnt lime and then manure, and the best time to do this?—SOUT.

4573.—Azalea in a window.—Will someone please to let me know the best treatment to give an Azalea I have outside my window? Should I take it inside on the appearance of frost?—J. M.

4574.—Tuberoses.—Will someone kindly tell me what to do with the bulbs after they have died down? Ought they to be kept in the pots, or dug up and put in silver sand during winter?—M. K. M. G.

4575.—Laying out a small plot.—How should I best lay out a small plot from front gate to house, about a foot or 18 inches broad, and perhaps 5 yards long, next to a brick wall, and facing south?—SOUT.

4576.—Plants and insects.—My Peas and Beans have been nearly eaten up by grubs of some sort which seem to come out in the night. They have also finished the Peas. Will someone kindly suggest anything to prevent this?—SOUT.

4577.—Olema for a trellis.—Will someone kindly tell me the most suitable kind of Olema to cover a trellis, and also to make an arch over a path, facing south? The soil is of a poor dry nature. Also what would be the most suitable dark-red climbing Rose for a cold-house.—C. P.

4578.—Peat for Azaleas.—Would "O. T." kindly inform me how deep a peat bed should be for Azaleas? I propose to make it of peat and vegetable refuse in equal parts. My soil, a red loam (Oxfordshire oolite), would not, I think, grow them well. Rhododendrons live, but do not flourish.—A. C.

4579.—A new garden.—To a garden made this spring the soil is exceedingly full of worms. It was covered with horse-mansure in May, and this has since been worked into the soil by the spade. How can I get rid of them? What time of year is best to put manure on small growing small (fruit and garden trees) and flowers, and should lime be put on?—SOUT.

4580.—A Fern-case.—I lately bought a large Fern-case, and planted therein six Maiden-hair Ferns, two Hart's-tongues, and one Pteris, all of which died away, with the exception of two of the Maiden-hair. I noticed when planting that there were no holes for drainage. I covered the bottom with slanders, and put brown peat on top. North-west aspect. A few hints on management would oblige.—J. MARTIN.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

4581.—Epidendrum vitellinum majne (Chr.).—There appears to have been a great diversity of opinion this season about the proper treatment of this beautiful plant, but as you ask which is right all I can say about the matter is that I certainly favour the side that goes in for a low temperature, shade, and a very damp atmosphere.—M. B.

4582.—Poison Cake of North America.—J. Holden asks the name of these plants, and he wants to know their effect; I am sorry, because these effects are not the same upon everyone. The plant is, I think, more correctly called the Poison Sauge, and there are several species in the States, which are blamed for the same properties. They cause great irritation, I believe, but perhaps the plant does not develop the same properties in this country; but one thing is certain—I have never found any ill effects from handling growing plants.—J. J.

4583.—Epidendrum Tovaronee (Judg.).—Thanks for sending me flowers of this species. I suppose I must goon the high-art principle—that is when you see a painting that looks black or dark you must draw the conclusion that it is white, and these flowers of Tovaronee being black I must suppose them to be pure white; but if they were their true colour they would not be worth anything. The other plant appears to be a very small-flowered and very poor-coloured variety of *E. scoparium*. I would burn it. That is all it is worth.—M. B.

4584.—Onoidium incurvum (Thos. Cole).—I have no doubt that you are tired of waiting for these spikes to open, but if it is of no use waiting dried; you must wait yet a little longer, and then the flowers will unfold, and reward you with their grace and beauty, and regale you with their delightful perfume. You have it in quite a suitable temperature, and I kept mine you have only to make a little more shade, but it is a plant which does not do very long time to develop, and did quite right in not getting the spike to send it.—M. B.

4585.—Lycaste Harrisiana (G. Collins).—This is the name of the very fine flowers you send, and I would ask you if it is not a perfect beauty? It has been in cultivation about seventy years, and it is to be found under the name of maxillaria, Bifrons, and even Donna Lindley, however, removed it to the genus Lycaste, and under this name it is now frequently to be found. It appears to be a native of Brazil, and it thrives best in the Cattleya-house, but it will and does grow well in a cooler house, but it does not bloom so abundantly.—M. B.

4586.—Fern Caterpillars (S. J. T.).—It appears to me that you have a good stock of two kinds, one is the larva of the Silver-Moth (*Pleukis gamma*), the larger one being that of the Amphirades Moth (*Phlogoporus artionous*). They are both very destructive to Fern fronds, and indeed to any low-growing plants, and from the fact of their getting such a size here you had noticed their ravage gives me an idea that you must have been away from home at the sea-side. Well, you had better search carefully for all you can find, and smash them all as found. Your neighbour's plants will mature enough to perpetuate the species.—J. J.

4587.—Miltonia spectabilis (Dorothy).—This plant now presents, I have no doubt, a very pretty sight, having seventeen flowers open. You say it is growing upon some rockwork in the stove, but what can you do to prevent it getting so yellow (enclosing some leaves for me to see)? The gardener tells you it must not be shaded as it will not grow. Well, your gardener tells you about right, but another reason got him to try a little shade in order that the Orchid may not present such a wabegone appearance; but it is quite the nature of this plant to turn yellow. I have grown them greener than your plant, but I think it has been at the expense of some flowers.—M. B.

4588.—Rockwork for public parks.—Mr Edmunds writes asking if it is possible to construct and utilize rockeries for Ferns and alpine in Brockwell Park and other similar places, and if they could not be built and planted in such a way as to be useful and attractive to the many who use these places? Quite so, this is a subject that should occupy the minds of those in authority. We cannot all make a journey to Kew Gardens to see the Ferns and alpine plants, and I should like to see such places extended. I speak rather interestedly, for the park in question is contiguous to my residence, and I should be glad to see my correspondents's wishes carried out.—J. J.

4589.—A yellow Lady's Slipper.—J. B. asks if there is such a thing as a good yellow-flowered kind, to which I have answered yes, but I do not think it would be of any use to cross with any of the orange-leaved section. I include in this material to the kind known as Flor del Paillozo, or Pollian-down *Cypripedium*, which is a terrestrial plant belonging to the same section as the Moccasin-flower at the Northern States of America (*C. spectabile*), and these two sections have never been known to cross, but there is a yellow-downed plant belonging to the same section—viz., *C. Druryi*, the segments having a dark band of chocolate down the centre of each.—M. B.

4590.—Microlepta hirta orlatata.—T. J. B. sends me a frond of this Fern which he says he turned yellow within a few days, and I am the more struck with this statement, because he says the same remark was made to me of this plant only a few days ago by Mr. Watson, a writer of this paper, and I think it must be the odd nights we have had lately. However, there may be something to say on the other side, and it may be suffering from the effects of drought on some previous occasion. Do not confine its roots to a small pot, for it is a straggling rooter, and it will soon grow into a handsome specimen if kept in the stove-ferner, and duly supplied with water to its roots, and the atmosphere also nice and moist.—J. J.

4601.—Epidendrum prismato-arpium—C. G.—I am the donor of this plant, which I say came to him last year through the death of an uncle, and this is the first one of the whole lot that has flowered, and he asks should it be grown cold or hot. Well, I would advise you to keep it where you have flowered it, because the fernest plant I ever saw of this species was growing in the East Indian house, although I usually took upon it as a cool plant, and it is found in Central America at an elevation of some 5,000 feet, so that, in fact, it will grow cool, but, as before remarked, it will thrive, and grow well too, in heat. I am not surprised that you should be in love with it, having three good spikes open, but the one flower does not lead to much satisfaction. A few years ago it was thought a great deal of, but it is not held in so much esteem, although the combination of colours is quite exceptional. It requires to be well drained, and potted in rough peat-fibre.—M. B.

NAMES OF PLANTS AND FRUITS.

Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the Editor of *GARDENING* Illustrated, 37, Southampton-street, Strand, London, W.C.

Names of plants.—T. C.—1, *Leila Dayana*; 2, *Cattleya intermedia*; 3, *Cattleya Harrisianum*; 4, *Burllingtonia venosa*,—George Cypher.—1, *Sison Anomum*; 2, *Lythrum salicaria*; 3, *Rubus fruticosus*.—C. F. C.—No, the figures must be reversed, 2 is the true *Olema Papilio*, 1 is *O. Ramezanum*.—Charles M.—The *Begonia* are very pretty, but we decline the task of naming. G. to Lasing or to Cassell—both are experts.—T. Dickson.—1, *Chelidonium majus*; 2, *Neottia australis*; 3, *Salpichroa volubilis*; 4, *Dryopteris papulosa*; 5, *Selligera andromorfe*; 6, *Nephrrolepis exaltata*.—T. Record.—1, *Cattleya gigas*, a very nice variety; 2, *Cattleya Gaskelliana*.

BIRDS.

4592.—Food for Doves.—Will someone kindly inform me what is the proper seed food for doves, and what green food is good for them?—LESLIE LEBROCK.

4593.—Cramp in a bird's legs.—Would anyone kindly tell me what would be the best cure for cramp in the legs of a mole bird between Goldfinch and canary? My young mole bird is one of the third batch this year, and by the way he is a very nice one, and crippled with cramp in the legs.—LESLIE LEBROCK.

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CHRYSANTHEMUMS.

EARLY-FLOWERING CHRYSANTHEMUMS IN TOWN GARDENS.

ONE of the most successful exhibitors of early Chrysanthemums at the recent show of the National Chrysanthemum Society at the Royal Aquarium was Mr. D. B. Crane, of Highgate, who is a well-known amateur grower of the flower. It will interest readers of GARDENING, doubtless, to know something of the culture pursued by this grower, and his remarks are likely to prove useful to others who live near large towns, but wish to get Chrysanthemums in full beauty in early autumn. He mentions that the good qualities of the early-flowering Chrysanthemum are very little understood generally, and this, I think, is very true. And also, Mr. Crane says that it is quite a mistake to suppose that there is so much sameness in the coloring and form of the flowers as some declare is the case. Many excellent kinds can be obtained, and the colour and forms all that is to be desired. These are being added to each season, thus making it quite an easy matter to prepare a list calculated to satisfy the opponents, if any, of this most useful and charming flower. Their cultivation is very simple; indeed, any time between the end of February and end of March may be taken as the correct time in which to propagate. The cuttings should be placed around the edge of 3 inch pots, and transferred to a cold frame, or, better still, in a cool greenhouse. They will not bear very readily, and in the course of three weeks or a month may be potted off singly into thumb-pots. The best compost for the potting is made up of two parts fibrous loam and one part leaf-soil, with sufficient coarse sand to keep the soil nice and open. The object of the grower should be to produce good and strong plants. This is best accomplished by placing them in a cold frame facing south, and after they have recovered from the check received in repotting, admit as much air as possible. On first days the lights may be entirely removed, and as the plants fill the pots with roots they should be potted on into larger sizes, according to the vigour of the roots. This may easily be seen by turning out the plants at any time. When repotting, one part of rotten manure may be added to the compost used at the previous shift. About the end of May or beginning of June the final potting may be commenced. A good compost is made up as follows: Two parts fibrous loam, one part rotten manure and leaf-soil, with coarse sand added to make the whole porous. To every bushel of soil add a 6-inch potful of dissolved bones and bone-meal in equal proportions, or any other equally concentrated soluble manure. Mix thoroughly, and pot when the compost is nice and moist. "Cropping" must be done very carefully, arranging the pieces in proper order; oyster-shells may be used for this purpose, with advantage. Stand the plants out in positions where the wood may become well ripened, and tie the shoots carefully, as many of the varieties

are so free blooming that support of this kind is absolutely necessary.

FOR BEDS AND BORDERS the plants may be put out in May, and carefully etaked and tied. This form should be tried by those who have not the time and convenience for growing them in pots. Many plants will in this way commence to bloom in July, and give a profusion of flowers until severe frosts cut them down. A few degrees of frost will scarcely harm them, while Dahlias and kindred subjects are damaged beyond recovery. Hence the great advantage of the early-flowering Chrysanthemums for border culture. A selection of varieties may be made from the following: Of the Japanese class the finest are Mme. C. Desgrange (white), and its sports, Mrs. Burrell (primrose-yellow), G. Wermig (bright-yellow), and Mrs. Hawkins (deep-yellow); Lady Fitzwygram is a very dwarf-growing plant, with huge white flowers. Other good kinds are Mme. la Comtesse Foucher de Caril, very free blooming, the flowers orange-yellow; M. Ostave Grunerwald, dwarf growth, the flowers mauve, with broad petals; Pynaert Van Geert (yellow, tipped with crimson), E. Rowbottom (large yellow flowers), Vice-President Hardy (yellow, flushed with orange), General Hawker (amaranth), and Sam Barlow (lilac-mauve, shaded with yellow, white centre, and a remarkably free-blooming kind). For the purpose of cut flowers the best-flowering Pompons are most useful. The best of these are Lyon (amaranth, the flowers comparatively large), Alice Butcher (orange-red, tipped with gold), Mrs. Cullingford (white), Miss Davis (blush-pink), Piercey's Seedling (orange-yellow, the plant very free blooming), Blushing Bride (blush, very free, bearing two displays of bloom), Strathmeath (mauve, the plant of excellent constitution), Flora (bright-yellow), L'Anide Condorhet (very bright-primrose, beautiful form), Early Blush (blush, a very early-flowering variety), Mme. Jollivart (white), and Martinmas (the flowers large and of a mauve colour, edged with white). With such a list of varieties as that given above there should be little difficulty in making a suitable selection. Mr. Crane says that to those who have hitherto failed to interest themselves in the early-flowering Chrysanthemums, let them give some of the above varieties a fair trial.

V. C.

New Cactus Dahlias.—This class is always having come fine variety added to it, and this season several very beautiful novelties must be made note of. The first is lady Penzance, and it is a pleasure to see that each year the flowers lose that coarse and objectionable character which distinguished those kinds called "decorative." The colour of the variety Lady Penzance is soft yellow, and the petals are pointed, not too broad, but composing a very pleasing and refined bloom. Lilacina is a distinct kind, the flowers shot with mauve, purple, or a yellow ground. The only danger in getting such kinds is importing magenta tones into the flower, which are not pretty. A variety which I think will be largely grown is named Mr. A. Peart, and is a white Cactus variety—at least, a deep colour, the centre suffused with yellow. This is a welcome addition, and we may reason-

ably expect before long quite a pure-white flower, as pure as the Pompon White Aster, which is perhaps the most popular Dahlia in cultivation. Very distinct from this is one named Matchless, which is best described in deep-mauve purple, with a suspicion of crimson on the margin of the petals. It is one of the deepest-coloured purples in cultivation. A light-coloured flower is that named Lady Henry Grosvenor, in which one gets somewhat the character of that gem of all Cactus Dahlias named delicate. The flowers of the variety Lady Henry Grosvenor are touched with salmon-rose, the ground yellow, a very beautiful association of quiet colours. Chancellor, another fine novelty, has a rich-crimson flower, the edge of the petals crimson. It is interesting to know that this class is founded upon that well-known kind Jubarezi, which was introduced from Mexico about 1879. The newer varieties hold their flowers up better above the foliage, and are freer.—V. C.

4509.—Cuttings of "Geraniums" and Fancies.—Loss no time in taking cuttings of the former. Short, stocky shoots, 4 inches long, are the best, removing the bottom leaf and cutting square across just below the joint. Dibble them singly in 2½-inch pots, or four cuttings around the edge of one pot, 3½-inches in diameter, using sandy soil. Give a good watering to settle the soil about the cuttings, and stand the pots in the shade out-of-doors for a few days to prevent flagging of the leaves too much. Afterwards remove them full in the sun. Here they may remain until there is danger of frost injuring them, when a place in the greenhouse, on a shelf close to the glass, will be the most suitable. Cuttings of Fancies need not be taken until the first week in October. Short, stocky shoots springing up from the base, 2 inches long, that have not flowered, are preferable to the soft, sappy stems of those shoots have borne flowers and are now hollow. Dibble the cuttings thickly in sandy soil in an ordinary seed-pan, with a few crocks at the bottom for drainage, placing the pan in a cold frame. If a quantity are required lay 4 inches of sandy soil in a shallow frame on a bed of coal-ashes made firm, and give a gentle watering to make the soil firm. Dibble in the cuttings 2 inches apart, give another watering, and keep the frame nearly closed, shading the cuttings from bright sun for a few days. Tilt the light for an hour occasionally to dissipate condensed moisture settling on the cuttings. Directly roots have formed admit air to the frame in quantity to induce a stocky growth. Pinch out the point of each plant when 3 inches high to prevent them becoming drawn up weakly, and to induce side shoots to push from the base. Gooseberries are easily propagated from cuttings from the current year's shoots taken off early in November, 10 inches long, nip out the point, and remove all the buds from the base upwards, except four or six at the top of the cutting. Insert them in rows 10 inches apart and 6 inches in the row, on any open part of the garden, making them quite firm at the base. On the soil between the rows lay 2 inches of coal-ashes to prevent the roots becoming the rotting by upheaving the ground.—S. P.

TREES & SHRUBS.

THE MAGNOLIAS.

In reply to queries: About a score species of Magnolias are known to botanists, and all but some half-dozen or so are in cultivation in this country. The head-quarters of the genus are in China and Japan, a few are peculiar to the Himalayan region and a few more to North America. All are handsome and desirable trees or shrubs; some, indeed, may be classed with confidence amongst the most beautiful objects to be met with in the gardens of temperate climates. A glance at a fine specimen of the Yulan (*Magnolia conspicua*), of China and Japan, when in flower will show what glorious effects may be obtained in spring in the South of England, at any rate, by its use. It is true enough, unfortunately, that frosts sometimes injure the flowers and change their snowy whiteness into an unsightly brown. Perhaps the reason that this Magnolia and its allies are not more frequently met with in gardens is owing to the fact of their not transplanting readily. The best results obtain if the plants are procured and planted just as

height of from 80 feet to 90 feet, with a trunk from 2 feet to 4 feet in diameter. The yellow Cucumber-tree (*M. cordata*) is regarded by Professor C. S. Sargent in his magnificent work, "The Sylva of North America," as a variety of *M. acuminata*. It is a rare plant in a wild state, as it does not appear to have been collected since Michxer found it in Georgia.

M. CAMPBELLI, one of the most gorgeous of Indian forest trees, has not fulfilled the expectations of those who took so much trouble in introducing the species to British gardens. In a wild state it attains a height of 150 feet, and the fragrant flowers, varying from deep-rose to crimson, are produced before the leaves appear. Probably the finest specimen in the British Islands is the one at Lakeleude, near Cork, which ten years ago was 35 feet high. Perhaps Mr. Gemblont would be good enough to inform us what progress the tree has made since then. In 1881 it flowered for the first time, and a figure was prepared for the *Botanical Magazine* from material forwarded to Kew by the late Mr. Crawford. Considering the beauty of *M. Campbellii*, it would appear worth while to treat it as a wall plant against some high building in a warm sunny position. As it

spathulate leaves auricled at the base; they each measure about 8 inches to 1 foot in length, and about 3 inches or 4 inches across at the widest part. The flowers, each of which measures 3 inches or 4 inches in diameter, are creamy-white in colour, and are produced later than those of any other cultivated species. In a wild state the tree attains a height of from 30 feet to 50 feet.

M. GLAUCA, the Laurel Magnolia or Sweet Bay of the Eastern United States, is a delightful evergreen shrub with oblong or oval leathery leaves, bluish-green above and silvery below. The flowers are globose in shape, very fragrant, opening of a rich-cream colour and gradually acquiring a pale-apricot tint with age. In a wild state this species occurs in swamps and attains a height of 20 feet. A large-flowered form (*M. Thompsoniana*) originated, according to London, about eighty years ago in the nursery of a Mr. Thompson at Mile End. It is figured in the *Botanical Magazine* as *M. glauca* var. *major* and in other publications. By far the most faithful and characteristic representation, however, is given in *Garden and Forest* for 1888. Professor Sargent there says: "It has been considered a large-flowered variety of *M. glauca*, and by some authors a hybrid between *M. glauca*, and *M. Umbrella*. It is probable that the latter supposition is correct, as, although the leaves of *M. Thompsoniana* cannot be distinguished from those produced on a vigorous plant of *M. glauca*, the leaf-buds are quite glabrous and destitute of the silky hairs which cover those of that species, while the broad, strap-shaped, reflexed sepals and obovate-oblong petals, contracted into a narrow olew, distinctly belong to *M. Umbrella*; the flowers, rather more than 6 inches across when fully expanded, being intermediate in size between those of the two species. They have, on the other hand, the delicious fragrance peculiar to those of *M. glauca*. So far as I know, *M. Thompsoniana* does not produce fruit, and it is a serious fact that it is much less hardy than either of its supposed parents, suffering here always unless carefully protected in winter, and rarely rising above the size of a small bush, although Loudon . . . speaks of trees at Mile End more than 20 feet high. I shall be glad to see fruit of this plant, and to learn if it grows more vigorously in Europe than it does in this country."

M. GRANDIFLORA, the great Laurel Magnolia of the Southern United States, is—in England—best treated as a wall plant; under these conditions it thrives well and flowers freely. In order to form some idea of the beauty of this species it is necessary to see it in large symmetrical stately trees in the West of France, &c., where climatic conditions obtain which more nearly approach those of its native habitats. In "Bartram's Travels" that enthusiastic lover of Nature exclaims: "Behold you promontory, projecting far into the great river, beyond the still lagoon, half-a-mile distant from me. What a magnificent grove arises on its banks! How glorious the Palm! How majestically stands the Laurel, its head forming a perfect cone! Its dark-green foliage seems silvered over with milk-white flowers. They are so large as to be distinctly visible at the distance of a mile or more. The Laurel Magnolias that grow on this river are the most beautiful and tall that I have anywhere seen, unless we except those which stand on the banks the Mississippi. . . . Their usual size is about 100 feet, and some greatly exceed that. The trunk is perfectly erect, rising in the form of a beautiful column and supporting a hood like an obtuse cone." In *The Garden*, Vol. II., p. 205, there is a fine illustration of the "Magnolia grandiflora at Home." Professor Sargent, in his "Sylva of North America," adopts the name of *M. foetida* for this species. In *Garden and Forest* for 1889, one writer urges the claims of this species as the national flower, and states that it "was among the favourite trees, if not the especial one, of Washington. An imposing specimen over 75 feet high, known to have been planted by his own hands, still flourishes at Mount Vernon, and every year since this modern Mecca has been accessible to the public, each fallen petal of its faded blossoms, every glossy leaf of its rich foliage and every seed that drops from its fruit-pods have been carried away as precious souvenirs by the visitors to that hallowed spot."



Magnolia obovata. Engraved from a photograph sent by Mr. E. E. Peacock, Bewdley Villa, Bath. (See page 421)

growth begins in spring. The fleshy roots when injured rot rapidly, and when autumn planting has been practised, very many individuals succumb to the ordeal, those that do not do so outright often struggling on in a pitiful plight for years. A little care in transplanting in spring, in sheltering with mats from dry winds or hot sun, and in syringing the wood to prevent shrivelling until the plants are thoroughly established, would do much to prove that the Magnolias can be planted with every prospect of success. Some species occasionally ripen seed freely in this country, and it is well worth while to sow this seed at once. If dried and kept like other seeds until the following season, all chance of germination will have passed. All the species of the natural order Magnoliaceae have seeds which retain their vitality but a very limited period.

M. ACUMINATA (the Cucumber-tree of the United States) makes a noble specimen when planted singly in the park or pleasure ground. It is deciduous, the leaves varying from 5 inches to 1 foot in length and glaucous green, the flowers yellow-tinged, bell-shaped and slightly fragrant. There are fine examples of this tree at Kew, in the garden of Syon House, St. Mount, &c. In its native habitats it attains a

occurs in a wild state along the outer Himalayas at elevations of from 800 feet to 1,000 feet above sea level, there seems every probability that the treatment suggested would prove successful.

M. CONSPICUA.—In its typical form this has snowy white flowers, which are produced in the greatest profusion in the latter part of April and beginning of May. Splendid specimens of this beautiful Chinese and Japanese tree are to be seen at Gunnersbury House, Syon House, Kew, &c. *M. Yulan* and *M. speciosa* are names under which this is found in some books and gardens. Several hybrid forms between this species and *M. obovata* occur in gardens; of two of these, *M. Lenné* and *M. Soelaegiana nigra*, coloured plates have been published in the *Garden*. *M. Soelaegiana* has flowers similar in shape and size to those of typical *M. conspicua*, but they are deeply tinged with red; *M. Soelaegiana nigra* has dark plum-coloured flowers. Both these bloom a week or ten days later than the type. Other seedling forms or slight varieties of the Yulan are *M. Alexandrius*, *M. cyathiformis*, *M. speciosa*, *M. spectabilis*, *M. sepeha*, *M. triumphans* and *M. Yulan grandis*.

M. FLASERI, a native of the Southern United States, is easily recognised by its light-green

OF ILLINOIS AT URBANA-CHAMPAIGN

M. HYPOLEUCA.—So far as we have been able to ascertain, the only figure of this beautiful species (excepting one in a Japanese publication which is not easily accessible) is in *Garden and Forest*, Vol. I, p. 303. From an economic standpoint *M. hypoleuca* is perhaps the most important of all the *M. gracilis*; the wood is straight grained, easily worked, and dull yellow-grey in colour. It is the wood commonly used by the Japanese in the manufacture of objects to be lacquered; it is preferred for sword sheaths, and the charcoal made from it is used for polishing lac. In the southern part of Yesso it is abundant in the

Coombe Wood Nurseries, and will doubtless become as great a favourite as the type. Both are dwarf-growing deciduous shrubs.

M. TRIPETALA, a native of the Southern United States, has large, slightly scented, white flowers, from 5 inches to 8 inches across, and obovate-lanceolate leaves from 1 foot to 3 feet in length; in a wild state the tree rarely exceeds 40 feet in height. Philip Miller was the first to introduce this fine species to British gardens. Other names for it are *M. Umbrella* and *M. frondosa*.

M. WATSONI.—A coloured plate of this very beautiful Japanese species was published in the *Garden* in December, 1883, under the name of



Cauliflower "Autumn Giant."

forest and forms fine trees 60 feet or more in height, with a trunk diameter of 2 feet. The leaves are broadly obovate, a foot or more long and 6 inches or 7 inches wide, dark green and smooth above, and clothed with white hairs beneath. The flowers are creamy-white in colour, deliciously fragrant, and when fully expanded measure 6 inches or 7 inches across, the brilliant scarlet filaments forming a striking contrast to the petals. There are no large specimens as yet in this country, but as the species thrives well in the North-eastern United States, it is fair to assume that it will do well in Britain.

M. KOBUS, a Japanese species grown in the United States under the name of *M. Thunbergii*, is as yet very uncommon in this country, and we have not yet seen it in flower. In habit it seems to approach dwarf-growing forms of *M. conspicua*.

M. MACROPHYLLA.—This, unfortunately somewhat tender in a young state, is worth growing simply for its beautiful leaves, which are green above and clothed with white hairs beneath; they attain a length of upwards of 3 feet. The open bell-shaped fragrant flowers are white with a purple blotch at the base of the inner petals and measure 8 inches or 10 inches across. In its native habitats, the Southern United States, it forms a tree from 20 feet to 40 feet in height, with a trunk rarely exceeding a foot in diameter.

M. OBOVATA (see illustration on p. 419) is a native of China; in Japan it only occurs in cultivation. It is a dwarf-growing bush, perfectly hardy in the South of England, and bears freely its purple, sweet-scented flowers, though not in the same profusion as are those of the white-flowered *M. conspicua*. This species has a number of synonyms. Amongst these are the following, which are the most frequently met with in books and nursery catalogues: *M. discolor*, *M. denudata*, *M. liliflora*, *M. purpurea*, *Talauma Sieboldii*, &c. There are several varieties, but these differ so slightly from each other and from the type, that descriptions without good-coloured figures would be next to useless. The best are *Borrei*, *angustifolia*, and *erubescens*.

M. STELLATA.—An excellent-coloured plate of this very beautiful Japanese shrub was published in the *Garden* in June, 1878, under the name of *M. Halleana*. This species is the earliest of the *Magnolia* to flower, and it should be extensively grown for the beauty of its starry white flowers. A variety with bluish-coloured flowers sent from Japan by Mr. Marice has not yet been seen, but by Messrs. Veitch, but it grows freely in the

M. parviflora; at that time it had not flowered in British gardens. It is quite hardy. It has large, creamy-white, fragrant flowers, with petals of great substance and deep red filaments, which add materially to the beauty of the blossoms. The true *M. parviflora* is probably not in cultivation in Britain. N.

4577.—*Clematis* for a trellis.—I do not think you can improve upon *Clematis Jackmani*; it is by far the most attractive of all the species, and if you commence with a good stout plant will cover the trellis rapidly.—A. G. BUTLER.

—The best *Clematis* for the purpose of covering an arch or trellis is *Jackmani*; Snow-white might be associated with it. General Jacquemont is a good dark H. P. Rose and forces well under glass: W. F. Bennett (hybrid Tea) would also probably suit. Then if a very free grower was required try *Reine Marie Henriette*, the *Red Gloire de Dijon*.—E. H.

—*Clematis Jackmani* is the best for covering a trellis or arch. If you want variety it is possible that *Clematis Prince of Wales* would thrive, as it is a strong grower and flowers freely. You must move up the soil to a depth of 18 inches, and mix some rotten manure with it. *Reine Marie Henriette* is a good red Rose for a cold-house. If you want one of a darker shade of colour you may select *General Jacquemont*.—J. C. C.

—I can advise no better kind for this than the large purple-flowered *C. Jackmani*, or one of the varieties which have been recently described in *GARDENING*. This free kind will do as well for the trellis or for the arch over the path, producing its rich masses of large deep-purple flowers throughout the summer. *Cheahunt Hybrid* would be a good Rose for this purpose. It is a showy kind, blooms freely, and its flowers are of a deep-crimson colour, whilst they are very fragrant. Both climbers may be planted now, and prepare the soil well in the first place.—C. T.

—*C. Jackmani* is far away the best variety to plant for covering a large space in the shortest time on any aspect. The flowers are most freely produced from the early part of July till the middle of September, if the roots are regularly supplied with moisture. The colour is a deep violet-purple, extremely showy. To grow *Clematis* really well the varieties require special pruning. For instance, *Jackmani*, which produces its blossoms on the current year's shoots, needs close pruning to induce a vigorous summer growth to be made. The first week in February prune the shoots of last year's growth back (to within an eye or two of the base, where growth started. If a light-coloured variety is preferred,

Albert Victor (deep-lavender, with pale bars) or *Sir Garnet Wolseley* (pale-blue, with plum-rod bars) are to be recommended. Both these flower on the last year's wood, and therefore need but little pruning, just removing the points of the shoots where rather weakly. By the addition of partly-decayed manure the poor soil may be improved, and by a regular supply of moisture, both at the roots and over the foliage, success is easily achieved. *Reine Marie Henriette* is the best dark-red climbing Rose. This is sometimes called the *Red Gloire de Dijon*. In the bud and half-opened stage this is a charming variety.—S. P.

4556.—*Evergreen creepers*.—It is by no means an easy matter to secure six sorts of evergreen plants that will grow 30 feet high and flower also. For instance, *Clematis* and *Roses* might be employed, but they are not evergreen. The following are the most suitable: *Ceanothus divaricatus*, pale-blue flowers, produced in quantity during May—this grows very fast if treated liberally; *Pyraeantha oratagus*, (commonly called the *Fire Thorn*), this grows rapidly; the flowers are borne in profusion during the summer, followed by a full crop of richly coloured berries, which hang on all the winter if the birds are not allowed to eat them. *Garrya elliptica* produces its catkin-like blossoms during the dull days of November, therefore is worthy of a place. *Lonicera aurea reticulata* has golden-coloured foliage and white blossoms, which are very sweet, and flowers almost the whole of the summer. This is perhaps the fastest growing creeper we have. *Lonicera brachypoda* is another form of *Honeysuckle* with pinky white blossoms, exceedingly sweet. *Choisya ternata* (commonly known as the Mexican Orange-tree) grows moderately fast and flowers so profusely that it ought not to be left out of even a list of six climbers. The end of March will be the best time to plant, as nurserymen supply all of these in pots, they can then be easily shifted, without fear of a check to growth. Any ordinary garden soil not less than 2 feet deep will suffice if partly rotted manure is added liberally at planting-time. Abundance of water should be given during a dry summer and the foliage ought to be well syringed occasionally.—S. P.

THE KITCHEN GARDEN.

VEITCH'S AUTUMN GIANT CAULIFLOWER.

THE value of this Cauliflower when sown early in spring for use during September, October, and November cannot be overestimated; neither does it need any praise from me to extend its culture, for this is well-nigh universal. My object in referring to it now is to point out its value as a summer Cauliflower for use from the middle of July until the spring-raised plants turn in. I have for the past few weeks been cutting heads of this Cauliflower faultless in every respect, being solid, heavy, and white, and I can safely say I know of no other variety that will produce equal results. With the accommodation of glass, which in most places has been extended of late, there has been a tendency on the part of some gardeners to give up autumn-sown Cauliflowers and depend upon those raised under glass in spring and also using earlier varieties; but if the ground is not extra good these very early sorts do not come large enough to make solid heads, so as to compare favourably with the autumn-sown stock. I would strongly advise these who have not yet tried *Veitch's Autumn Giant* when sown from the 10th to the 20th of August, and again a week later, to do so. This ensures there being one batch at least in a suitable state to prick out into hand-lights to stand the winter, where they should be treated as the other varieties, such as *Early London*, to which they will form a capital accession. C.

GROWING TOMATOES.

Now that this favourite crop is about over, a few lines on the ways of growing may not be out of place, although you would think, by so much being written about which is the best way to get a good crop, the subject would have been exhausted long ago. Yet I am convinced, after two years' trial, which mode is best. My Tomatoes had a span-roof running

north and south, 40 feet long by 22 feet wide, heated just to keep frost out. This year my plants were planted out with the first fruits set in rows 2 feet apart by 1 foot in the row. They were planted in a good loam soil, intermixed with road scrapings to keep it light. When all were planted I staked them nicely with slater's laths, 7 feet or 8 feet high, and very neat and trim they looked, and I never saw plants more like doing well. In about three weeks the house was a perfect wood; they had grown 2 feet in that time—in fact, too fast, as gross and strong as possible to be, but not a fruit set. However, they did well when they had had their run awhile, and I got about 650 lb. of fruit off 120 plants. To come to the point, I was convinced, after seeing another house about three miles away, that I was ignorant of Tomato-growing. Now to describe the other house, something similar in size, but not so high as mine, planted in rows in Orange boxes, and here's where, in my opinion, the secret is. When I saw this house it was a perfect sight, and the crop would average quite a stone a plant. They were set out, he said, just nice plants, about a foot high, just sufficient soil to start them, and then continual top-dressing. This, anyone will see, is to prevent gross and rampant growth; when they showed signs of exhaustion they were fed with sheep-manure-water. To those who are not satisfied with their mode of culture, I would advise the following rules: 1, Plant in a bed of a decent size, a foot or so square; 2, Top-dress well, and often; 3, tie up and pay attention to offshoots and leave at least once a week; 4, Feed well with some good stimulant when wanted; 5, Get a good sort, and keep it, and never plant more than one sort in a house; 6, The last, but failing it success is out of the question—sir. Few people, especially amateurs, know what air is to Tomatoes, and, indeed, all other plants. Anybody that observes these rules cannot fail in growing Tomatoes. I may say in conclusion that the kind I grow is a good variety of Prelude. Someone will say, I know, it is not a weigher, but what it lacks in that point it gains in others—viz., a sure and heavy crop, beautiful fruit, which gains 3d. a pound more than any other variety I can grow.

J. G. PETTINGER, Harrogate.

ORCHIDS

DENDROBIUM PIERARDI.

This species, by reason of its easy culture, profuse flowering, and cheapness, is one of the best Dendrobiums for general cultivation. It was introduced to the Calcutta Botanic Garden by Pierard at the beginning of this century, and not long afterwards was sent over to England. It appears to have been the first of the Indian Dendrobos that flowered in this country, this event occurring at Kew. It is found in great abundance in a wild state, and its natural range extends over a very wide territory. According to Sir Joseph Hooker, it is very frequently met with in the hot valleys of the lower Sikkim Himalayas, where it grows on the trunks of fallen trees. Thence, it spreads southwards to British Burmah and Moulmein. It has slender pendulous stems, which in this country usually measure from 2 feet to 4 feet long; but in the Botanic Garden at Calcutta, where it is cultivated by being fastened on the branch of a tree, and its roots kept continually moist by artificial means, they reach a length of 6 feet. It is the general practice to grow this plant in baskets suspended near the glass, a method which allows the long-flowering stems to be seen to great advantage. In low houses, however, this plan is often inconvenient, and the stems have to be trained erect, as has been done with the admirably grown and flowered specimen illustrated. The flowers, which are usually at their best in March, are borne on the stems of the preceding year's growth, being produced singly or in pairs at each of the joints on the upper two-thirds of the stem. Each flower is from 1½ inches to 2 inches across, or it may be a little over in the best varieties or unusually strong plants. The sepals and petals are of a pale mauve, tinged with rose; the lip is broad and flat, and of a soft primrose-yellow, marked with purple streaks at the base. The delicate contrast between the lip and the other segments, and the soft tints of the whole flower, make this one of the most charming of the

drobes. As in all Orchids that are spread over a wide area, considerable variation is manifested in the size and shape of the flowers, some having more pointed sepals and petals, and others a broader lip.

THE CULTIVATION OF *D. Pierardi* is the same as for *D. uobile*. I prefer to grow it in teak-baskets, the compost consisting of peat-fibre (from which all earthy matter has been removed) clean Sphagnum Moss, and lumps of charcoal. From the time the new growths begin to appear until the end of September, a stove temperature and a saturated atmosphere should be maintained, water, of course, being freely supplied. After the leaves show signs of decay, the moisture should be gradually reduced until in winter no more than is sufficient to prevent the shrinking of the stems should be given. From October to February the plants should be in a comparatively dry position in a cooler house. It will be noticed from the absence of non-flowering stems that the specimen from which the illustration was made has been grown on the pruning system, and it undoubtedly stands as a powerful argument in its support. Some years ago a good deal of controversy arose as to the merits of this practice, which consists in removing the stems that have flowered and are, therefore, of no further value in that respect. Of course, with species like *D. Pierardi*, which flower on the growths last made, it would not do to cut off these until the new ones that spring from them had almost or quite completed their growth. Although from the physiological standpoint the practice is wrong, robbing, as it does, the new stems of

the year—they are not, or should not be, subjected to anything like the exhausting conditions which attend their growth in Nature; consequently the need of a reserve supply is proportionately reduced. This, no doubt, explains to some extent the comparative indifference of some Dendrobiums to the absence of old stems. Plants grown on the pruning system require a higher temperature and a moister atmosphere than unpruned ones do. I advise all who contemplate adopting this practice to do so at first in a tentative manner. For myself I confess to a preference for the older system. W.

DENDROBIUM BIGIBBUM.

I AM FAVOURED with a fine spike of this plant from "C. H. F.," asking if it is *D. Phalaenopsis*. He says it comes from the Island of New Guinea, and he hopes it is that species. Well, it is not *D. Phalaenopsis*, but the plant named above, and an excellent variety of it. One mark in particular by which this species may be defined from *D. Phalaenopsis* is by the presence of a white patch on the disc of the lip. This is composed of some pure-white papillæ, which are invariably present, but I have never seen it present in flowers of *D. Phalaenopsis*, although I have seen hosts of flowers brought from its native country, as well as those grown at home. I have frequently seen plants of *D. bigibbum* which have been brought from various islands in Torres Straits, but I do not know that I ever saw a plant from New Guinea, and I had

thought these plants appeared to be freer in their growth and better doers than the plants which I originally knew the species by, and which were said to be from the extreme northern part of the mainland of Australia. The young growths of this species retain their leaves until about two years old, and the racemes of flowers proceed from the top of the bulb and from the side buds near the top, continuing to push out fresh spikes from the old stems for years oftentimes; so that it is best policy to cut away the old stems. These racemes last a very long time, so that the species will continue to supply a continuance of flowers for personal decoration for a very long time, whilst by growing a few plants of the same kind a long succession may be maintained. *D. bigibbum* and *D. Phalaenopsis* require a great heat to grow them well, and they should be liberally supplied with water during the summer months, which is their growing season, both to their roots and in the atmosphere, so that good drainage is indispensable to them; but during the winter far less is requisite—in fact, just enough to keep them in a plump condition without, but if it is considered desirable to reserve their leaves, do not thoroughly dry them off.

MATT. BRAMBLE.



Dendrobium Pierardi.

the fool stored away in the old ones, its supporters have the strong argument that plants have been grown as vigorous and as well-flowered as those not so treated, a fact which those who have attended the exhibitions and meetings of the Royal Horticultural Society have seen for themselves. The reservoirs of food—as the old stems really are—have been evolved in a state of Nature to enable the plants to survive long and severe periods of drought. Under cultivation—although it is necessary, as I have already pointed out, to keep the plants almost entirely without water at one stage of

CYPRIPEDIUM PARISHI, ETC.

I HAVE NOW to deal with a subject which I should not have thought came within the cognisance of a reader of GARDENING, but I heard a remark the other day that one never knew their luck, and this question has come as a surprise to me. "Walter Ramsbottom" asks if I can tell him something about *C. Parishii* and some other of the East Indian long-tailed Slipper Orchid? He is wishing to grow them, and he asks if there is any reason why he should not? To this last part of the

question I can only answer, No, there is no reason why; and I should have advised "W. R." against going into the cultivation of these plants because of the expense in these days of coal strikes, but my correspondent cuts me short by saying, "I am quite independent of coal or coke, having got a splendid little oil-stove fixed, which costs next to nothing," so I have nothing to do but to commence, and I do so with the species I am asked about.

C. PARISI.—This is a plant which I have known for some years, it having been introduced in the first place by the Messrs. Low, of Clifton, some twenty-five years ago. It is a plant of robust growth, and its scape bears four and five flowers of good size, the petals being spirally twisted, and of a glossy purple, with a few blackish spots towards the base. The other parts of the flower are green or greenish-yellow, which detracts somewhat from its effect, and I look upon this plant as of more importance to the cultivator at home as a hybridiser than anything else.

C. PHILIPPENSE is another of these Eastern species, and very beautiful it is. It was first discovered by Mr. John Veitch, when collecting in the islands of the Indian Seas, and was long known in our gardens as *C. levigatum*, and it brought very long prices, as much as twenty and thirty-five guineas being asked for small plants with a single growth; but now it is very much cheaper. The petals are spirally twisted; they are yellowish-green at the base, where they are fringed with short hairs, passing into a reddish-brown; they are between 5 inches and 6 inches long, the dorsal sepal white, striped with purple, and the pouch or lip tawny-yellow, with some darker veins. A plant very similar to this has been introduced by Mr. Sander, which he calls *Roebeleni*, and which some authorities, I see, make it to be the same species.

C. ROTHSCHILDIANUM is a beautiful kind, and the plant called *Elliotianum* appears to be the same species. The dorsal sepal and lower sepal are white, or creamy-white, with dark bands the petals are long, standing at right angles, striped in a similar manner; the lip is of a dullish-brown. It is a beautiful plant, carrying four or five of its large flowers all expanded at the same time. Both these plants were introduced by Mr. Sander, of St. Alban's, to whom we are indebted for so many of our fine Orchids.

C. STONEL.—This is always a fine plant, which was introduced by the late Mr. Stuart Low some thirty-three years ago, and it always will be regarded as a gem. The dorsal sepal is white, or with a few black stripes, the petals being some 5 inches or more long, slightly twisted; they are pale-yellow at the base, spotted with crimson, their ends wholly of a brownish hue, the lips of a brownish hue netted with crimson veins. I may as well mention the variety *S. platynebotom* here, although I am afraid my friend "W. R." will be a long time ere he gets it. This plant, like the species, was introduced by Mr. Low, and it passed into Mr. John Day's celebrated collection at Tottenham, but at his decease most of the plants went into the hands of Baron Schröder and Sir Trevor Lawrence, and they have increased considerably in value; but it is a superb plant, having the sepals the same as the type, but the sepals are very broad, being just upon an inch wide, and coloured of a creamy-white, spotted with crimson, the tips wholly crimson. C. Low must be included amongst the long-petalled kinds. It grows naturally on trees. It is a very showy species, having the petals about 3 inches long, broadest at the tips, where they are of a rich violet-purple, the upper part greenish-yellow spotted with deep purple, the lip being greenish-purple. **C. Haynaldianum** is a very similar plant, but the petals are not quite so long. They are greenish-yellow at the base, spotted with brown, the ends being dull purple, as also is the lip. I conclude the enumeration of the long-tailed Eastern species of this genus with the wonderful plant called *C. Sanderianum*, which is a very handsome kind, and has petals

which are narrow and reach the length of twenty-six inches. The flowers are hairy on the outer side, the sepals, yellowish, tinged with green, having broad blackish stripes, the petals narrow, slightly twisted, yellow at the base, becoming dull purple for about twenty inches, spotted with yellow and brownish purple. It is a wonderful plant which I saw flowering and doing well in Mr. Tantz's collection the last time I visited it when at Shepherd's Bush, and it has, I believe, furnished his gardener with pollen for hybridising. Now I must say a few words about the culture of these plants before leaving them. They like to be set in the warmest place possible,



Summer use of Seakale pots in flower garden at Woodlands, Cobham.

and they like to stand near the glass, but not exposed to all the sun's rays, but yet they do like the sun to shine upon them, and they also like a good moist atmosphere. They should be well supplied with drainage, as they like a good supply of water to their roots. Pot in good peat-fibre and Sphagnum Moss; during the winter season much less water is necessary, both in the atmosphere and to their roots, but do not allow them to suffer from want of moisture at any time of the year.

MATT. BRAMBLE.

TRICHOPILIAS.

I AM induced to offer a few remarks upon these plants from receiving a note from a lady in the Emerald Isle, "Miss Carey" by name, who sends me a flower of the good old Mexican species, *T. tortillia*. Now this is a plant that was first introduced nearly sixty years ago, and the plant has never been lost since. There are two varieties of the species, or the same plant produces two crops of blooms in one season. The flowers are large, the sepals and petals are spirally twisted, brownish-purple in the middle, bordered with white. The trumpet-shaped lip is ivory-white, spotted and dotted with rose and brown.

T. COCCINEA is a plant resembling the former one in its growth, but the bulbs are slightly longer. The flowers are, however, of quite a different hue, being long, with a wide trumpet-shaped lip, and of a deep but bright-crimson. It comes from Central America.

T. MARGINATA—This is a beautiful large-flowered and bright-coloured plant. It usually bears two or three flowers together upon one stalk. These are the same shape as those already noticed, and they are rich-carmine. This plant is a very free bloomer. I have frequently seen the same plant produce a double crop of bloom in the one season. It is now more than forty years ago since this plant was sent to us from Central America by the Polish collector, Warszewicz, who is said to have discovered it on the Central Mountains at a considerable elevation.

V. CALCOTTIANA.—This is the plant which was figured in the "Botanical Magazine" in 1865 as *T. Turlivae*, after the name of the great white mountain upon which it was found; but the plant had been found some twenty years before this figure appeared by Calceote and named after him. The flowers are of good size, of a yellowish white, the lips being of a deeper yellow spotted with red.

T. SUAVIS.—I have left this fine species with its variety *alba* until the last, and I would earnestly beg "Miss Carey" to invest in this, for its flowers are large, beautifully coloured, and with a delightful perfume resembling May blossom. It bears several flowers upon one peduncle, the sepals and petals being creamy white, the large lip being beautifully fringed, and spotted with rosy-pink. In the variety *alba* the flowers are pure-white, saving the deep yellow which is to be found in the throat; but the rosy-pink spots and blotches are quite absent, but it has the same delightful odour. The above are some of the principal kinds known in this little family, but all are well worth my correspondent's care; they are plants which do not require much care, but they do require good drainage to maintain them in good condition. They require good peat-fibre and Sphagnum Moss to grow in, this to be pretty well elevated above the pot's rim, because the flowers are produced under the leaves, and there is not room for them to display their beauties if this is not given attention. They are plants which like a good supply of water during the growing season and when they are flowering, and at this time it is well to plunge the pots in a pan or tub of water, but not so deep as to wet the flowers, and after the flowers are gone the plants should then be plunged over the growths and be allowed to soak well. This will compensate for any dryness which may have overtaken the bulbs through being set higher up than usual above their surroundings; but do not allow the plants to get thoroughly dry. At any time in the year the plants can be thoroughly rested by keeping them drier and placing them in a cooler position. The majority of the plants named above succeed well enough in the *Odontoglossum*-house, but I would prefer the warmest end of such a structure for them, and I would give them the opportunity of getting more sunshine than the *Odontoglossum*, which require more shade. But I consider that the greatest ruin occurred in the early days with *T. suavis* through keeping it too hot. The leaves became shrivelled and turned yellow, the bulbs shrivelled up and wasted away from keeping them in the Cattleya-house all the season, when they would have plumped out their bulbs, and their leaves have been more of the consistency of stout leather aprons if kept in the cool-house. MATT. BRAMBLE.

SUMMER USE OF SEAKALE POTS.

WE were pleased last year in Mrs. Earle's garden, Woodlands, Cobham, to see how prettily these were used for half-hardy plants in summer, as shown in our engraving. The pots were simply turned up, roughly drained, filled with Scarlet Pelargoniums and other half-hardy plants, and placed on a little terrace, where they looked very well. The pot is really better in form than the usual garden pots.

A new Pompon Dahlia.—By far the most brilliantly coloured variety in this useful class (or, indeed, in any other as far as I know). It is a new one called Sunshine. It produces rather large but perfectly formed blossoms of the most dazzling vermilion-crimson that can be imagined on a very dwarf and bushy plant. This fine variety, which will prove a gem for cutting, is quite distinct from the old one of this name, and a great improvement on it also.—B. C. R.

4576.—Flants and insects.—Your query is very indefinite. Send a few of the insects and one may tell better what course to advise. The only way we should think is to search for them, especially if they are slugs, snails, or similar marauders. Insects that infest plants are many in number, but we should think the mischief is done by the caterpillar. Search for them, and in the evening or early morning is the best time to do this.—C. T.

Measure with root and stem liberally next winter

HOUSE & WINDOW GARDENING.

EVERGREEN CREEPERS FOR A SOUTH HOUSE WALL.

4556.—The following list of creepers suitable for the south side of a house may be found useful, but "John" does not mention the locality or soil, and also whether the position of the house is much exposed to high winds. If in the northern counties, or in a very cold situation, it would be best to grow some of the handsome varieties of Ivy instead of the more delicate creepers here mentioned. Magnolia, for instance, though perhaps the queen of climbers in Devonshire and other southern counties, would not do so well, perhaps, in the north of England. Evergreen Honeysuckle (*Lonicera sempervirens*, with its varieties *L. brachypoda* and *L. aureo-reticulata*), should be included for its quick growth and delicious scent, the two first named being specially floriferous, while the Golden Honeysuckle (*L. aureo-reticulata*) is of lower growth, and is a shy bloomer, although the foliage is variegated and handsome, making a good variety. Of Evergreen *Rosa* the two best are *Félicité Perpétuelle* and *Princesse Marie*, but the fine old *Gloire de Dijon* Rose is so nearly evergreen and so well worth having for its mass of lovely blossoms that it should certainly be planted. The *Ceanothus* family gives us some of our finest climbing shrubs, but some are more hardy than others, and of these *C. azaricus* is perhaps the most satisfactory. The foliage is always handsome, and although the azure-blue flowers are individually small, they are produced in such extraordinary profusion during the whole of the summer that the effect is of a perfect mass of bloom. *Ceanothus americanus* is also fairly hardy, bringing quantities of pure white blossoms from June to August, while *C. Veitchianus* is perhaps the most beautiful of all, the flowers being of a deeper azure, and borne in masses at the top of each spray of leaves. All the *Ceanothus* family need rather dry, gravelly soil with good drainage, and they flower where the wood is thoroughly ripened by strong sunshine. They should be pruned each year about the end of April, and as they bear all their flowers on the wood of the current year, they may be sharply cut back when necessary. *Mahonia nepalensis* is a remarkably fine climber in Devonshire, but would not be perfectly hardy probably in colder localities. It is a *Burberry* with extraordinary leaves of about eighteen inches long, and large clusters of golden flowers in the spring. The more hardy *Mahonia* (*Berberis*) *Aquifolium*, makes a fine climber to cover the lower part of a house, its beautiful shining leaves, which turn scarlet in the winter, bunches of rich-purple berries (also borne in winter), and the pretty yellow sprays of bloom which are produced in early spring, make it most desirable and attractive as a wall climber. *Garrya elliptica* is a handsome evergreen climber, which is covered in winter with long tassel-like flowers of great beauty, giving the effect of a draping of lace. In this plant the male and female flowers are borne on separate individuals, the tassels of the male plant being the most handsome, but those of the female being sometimes followed by dark purplish berries. It is best to grow a plant of each sex, if these are to be produced, and both the *Garryas* need deep rich soil. *Escallonia maorantha* is very lovely, with dark climbing foliage and a mass of rose-pink blossoms. This is quite hardy in the south, and would probably do well on a sheltered south wall in most parts of England. *Passiflora corulea* (the common Passion-flower) must not be omitted from this list. There is no more beautiful creeper when well grown, its long sprays of elegant foliage and delicately-tinted flowers are unique in their own way. Of the *Jasmines*, *Jasminum resolutum* is the only variety which retains its leaves in winter. It should be grown, if possible, but is not a common plant to procure. *Crataegus pyraeantha*, with bunches of intense-scarlet berries in winter, is a very fine plant, and the decorative effect of its berries is wonderful. *Cotoneaster microphylla* makes an excellent wall plant, very handsome throughout the winter months with its profusion of osmine berries at every point. Myrtles, and other less hardy plants, may be added to the list for the south, but would not do so well in a cold

situation, and should certainly receive the shelter of a mat in severe weather. All these plants will be the better for well-prepared and deeply-dug soil, whether put in during the autumn months or in the spring, as this should be done at once, a trench of 2 feet in depth and the same in breadth being cleared of the old soil (unless it be in excellent condition), and filled with good loam or turfy-loam from an old pasture, with a liberal mulch of stable-manure on the surface after the plants are put in. This will help to keep their tender roots from the frost and enable them to make a fine start in the spring. Without it they would be in danger of perishing before their roots have taken firm hold of the soil, and in the case of the more delicate plants it will be well to wait until the severe frosts are over, planting in April, with plenty of water, and giving a mulch of old stable stuff over the roots, so that they may not be injured by the hot sunshine. A little care in planting, procuring good plants and spreading out their roots in a fan-shape (not dropping them into a perpendicular hole), will be well repaid in the future. I. L. R.

DAFFODILS FOR A ROOM.

The term "Daffodil" now includes not only the old favourite *Lent Lily*, but also the whole *Narcissus* tribe, with *Jonquils* also, so that a wide selection may be made of these fragrant flowers, which are especially decorative, too, with their soft tints of yellow, creamy-white, and touches of scarlet. The earliest-flowering section includes most of the *Polyanthus-Narcissus*, of which the double *Romus* and the *Paper-white grandiflora* are the best for forcing, and may be had, with early potting and no more heat than a sunny window affords, in full beauty at Christmas-time. *Narcissus Tazetta*, the *Joan-flower* of China (often called the *Fairy Lily*, or the Chinese Sacred Lily, though it has nothing

Next to these in opening their blooms are the sweet-scented *Jonquils*, both double and single, and these are followed by the beautiful *White Narcissus*, *White Pearl*, and many other varieties. Later in the spring the *Daffodils* proper—i.e., the yellow flowers which have always borne that name—open their blossoms, and many of these are now most magnificent. *Narcissus Ard-Righ*, *N. Horsfield*, *N. Emperor*, *N. maximus*, *N. obvallaris*, and *N. Barri* conspicuous, are some of the finest varieties of these, but there are many others of almost equal splendour. All these bulbs can be grown in pots, well drained, with a light compost, not too rich, and should be planted as soon as they are received from the horticulturists. The pots are best sunk in a bed of fine ashes out-of-doors, clearing away the ashes (which should cover the pots to the depth of 2 inches in winter), as the green of the bulbs makes its appearance, and top-dressing them with rich soil. They should be grown entirely out-of-doors until the buds appear (with the exception of the *Double Roman*, *Paper-white*, and *N. Tazetta*, all of which if potted early should be taken in before frosts occur), boxes of ashes on the leads, or a thick bed of ashes in a back yard, being the best places for the pots where grown in a town. The later and more hardy bulbs may, if preferred, be placed in the garden, and potted up in groups just as the buds begin to open. This is an easy and excellent plan where decorative plants are needed in the country, as the *Daffodils* are usually strong and hardy when grown in this way. *Orange Phoenix Narcissus* thus treated is very beautiful, being double and of specially rich and soft colouring. *Sulphur Phoenix* is also a charming pale-tinted variety well worth cultivation. "Sir Watkin" (here figured) is a very fine one. I. L. R.

4573. — *Azalea in a window.* — All *Azaleas* should be taken inside at night now, though they might benefit from exposure on



OUR READERS' ILLUSTRATIONS: "Narcissus 'Sir Watkin.'" Engraved for GARDENING ILLUSTRATED from a photograph sent by Messrs. Pearson, Chiswell, Nottingham.

to do with the true *Liliums*), is also very early, flowering about seven weeks from the time it is planted, either in pots or in water. In a shallow ornamental bowl, where the bulbs can be surrounded with pebbles to keep them upright, and not more than half covered with rain-water, they make a lovely drawing room decoration, only requiring to be kept in the dark for ten days while they are forming their first roots, and sheltered from sharp draughts when in growth.

fine, mild days. The most important matter in the culture of *Azaleas* is the watering. Too much or too little destroys the vitality of the plants. If any doubt exists about the plants requiring water, tap the pot with the knuckle; the sound will tell if the plant is dry or wet. Try its weight by lifting it up in the hand, and water or not as the plant is heavy or light. All that is necessary for *Azaleas* is to keep them safe from frost in a light room. *Azaleas* are much

hardier than many imagine. It was not uncommon years ago to find beds of Indian Azaleas growing outside in many sheltered gardens. Still, with plants in pots, exposure to frost sometimes injures the blossom-buds before they open, and it is best avoided.—E. H.

— I suppose you mean one of the ordinary Ghent Azaleas, if so by all means take it in on the appearance of frost, otherwise the buds will be killed. It is not easy to grow Azaleas in a room, the buds dropping through the dryness of the atmosphere, change of temperature, and other details. The only thing is not to keep the plant in a gas-lighted room, and syringe the foliage occasionally to remove accumulations of dust or dirt, which, however careful one may be, will settle on the leafage. Another thing is to regulate the watering with the utmost care, giving only sufficient to moisten the soil and no more. Do not let water remain in the saucer, but drain it off directly after the plant has been watered. A gas-lighted room is very troublesome. The air gets so dry and hot, and materially affects the plant.—C. T.

— You should take this inside before frosty weather sets in. But as you could hardly have chosen a worse subject for window culture, and are almost certain to be disappointed with the results, I would strongly advise you to make an exchange with some friend who has a small conservatory or greenhouse.—P. U.

FERNS.

4580.—**A Fern case.**—No plants will grow and keep in health long without drainage. Have some holes drilled through the bottom or ends of the case so that the surplus water can get away. You might have a hole drilled close to the bottom at one end, fitted with a small tap, or even a tight-fitting cork would do. There is no difficulty attached to the culture of Ferns in such cases.—E. H.

— These are often made without drainage holes, in order, I fancy, that no water may escape on to carpets, etc., when standing in a room; but I do not consider it is at all right, or as it should be. If the hole is made in one corner, it is easy to put a bucket or pan underneath when watering, and leave it until all surplus moisture has drained away. You did quite right to put a layer of cinders in the bottom, and peat, if mixed with plenty of sand is good material for most Ferns to grow in, but perhaps you did not make it sufficiently firm, or too much or too little water has been given. It is, in fact, difficult to say where the treatment has been wrong without either seeing the plants or knowing how they have been treated throughout. Too much moisture is quite as bad as too little, for it renders the soil sodden and sour, and then the plants cannot possibly thrive. I find a mixture of loam and peat better than pure peat for most Ferns, and a little lime is useful, as it tends to keep all sweet. Again, do not keep the case too close, especially in hot weather, but admit a little air, if possible at the top of the case rather than at the side, for two or three hours, morning and evening.—B. C. R.

— Evidently you have entirely mismanaged your Fern-cases, and unless there is a way of escape for the water given to the Ferns it is impossible for the growth to be healthy. The first thing to be done is either potting plants or putting them into boxes, as in this case, is to see that the drainage is thoroughly good and the reason is obvious. If a plant is in a water-logged soil it soon gets unhealthy, and the soil naturally becomes sour, the result being death of the Fern or whatever plant is used. First see that there are sufficient holes for the water to escape, and as regards the drainage, cinders, etc., you have acted rightly, and a peaty soil is most suitable for the Ferns. During the winter less water will be required than in the summer, and keep decaying fronds picked off, as these promote decay, and ultimately death ensues. The glass must be wiped out at frequent intervals to prevent damp, and the sun should not shine full upon it. There are a few general hints that may be useful to you.—C. T.

FRUIT.

4581.—**Planting Strawberries.**—Within the last half century the varieties of this fruit have been greatly increased in number. It is best to select the first runners for planting, and mark them by pegging them down. They will produce fruit next season; those which come from them probably not. It has been supposed that the runners exhaust the plant, and it has been advised to cut them off; but the result of experiment is that the produce is the same whether the runners are left or removed. The varieties called Alpine Strawberries bear colder, damper, and more shady situations and lighter soil than the others, which prefer a good mellow loam, even inclined to be clayey, such as would be suitable for Wheat. The alpsies bear late; their fruit is conical in shape and has a peculiar aromatic flavour, which is brought out by preserving in sugar. Of the old sorts the best are the Bath Scarlet, early, abundant bearer, much sought after for preserving; the Chili, large, round white, and a very useful Strawberry, though many find fault with it as not being sufficiently high flavoured; another variety, the Hautbois, of peculiar flavour, much esteemed by some, but not generally cultivated. Many of the plants are sterile males, and as they increase by runners even faster than the prolific or hermaphrodite plant, they must be carefully nipped as soon as discovered, otherwise the bed at the end of a short time will be overrun with unproductive vegetation. Amongst the celebrated modern kinds the Elton, raised by Knight, stands high; it is a late variety, large, cockscomb-shaped, abundant bearer, and should be suffered to ripen thoroughly before gathering. Keen's Seedling, very abundant bearer, early, well adapted for forcing, grown in immense quantities for the London markets, and excellent for main crops; the British Queen is probably the best late Strawberry. The Black Prince is one of the most prolific kinds and is very early. Soils make a wonderful difference in Strawberries; the very best is a sandy loam. In this they will not grow more to root and top than is necessary for the formation of good buds for the next year; while in a rich, light mould, if the autumn prove wet they will produce a large watery mass of tops, growing on to the middle of October, and producing no buds in the centre. I have practised the following plans on light soils. Where the Strawberries were planted out in poor sandy soils, I have obtained a famous crop by giving plenty of liquid-manure in spring. I have also planted the runners in small pots filled with loam, and about the 1st of November planted them out for the next year's crop. I never put more than one plant in a pot 8 inches deep, 1 foot in the row, and 2 feet asunder. By this means a good crop will be insured, and mulching between the rows with fresh stable-manure about an inch thick all over the ground just as the Strawberries are coming into flower. If the weather be dry water should be given several times; this carries the strength of the manure down to the roots, and by the time the fruit ripens the straw will be clean and free from smell.—T. W. P.

4547.—**Thrips on Vines.**—You should take the Fuchsias out of the house at once and deal with them outside. Thrips on Vines are dangerous, as they eat the green matter from the leaves, and may not only injure the present crops but have a deteriorating influence upon next year's crops. Fumigations with Tobacco on successive evenings will destroy thrips; but if the Grapes are ripe the Tobacco-smoke will injure the flavour. On the whole, the best way of dealing with thrips on Vines is to sponge the leaves on which the insects are with a strong solution of Gishurst Compound; but in bad cases of thrip the insects descend into the bunches and eat the bark round the berries, and then there is nothing for it but to fumigate moderately on several successive evenings, ventilating freely during the operation so that the Tobacco fumes may pass away.—E. H.

4538.—**Bottling Grapes.**—A great deal depends upon how the Grapes are ripened. If thoroughly ripe when out Lady Downes will remain quite fresh in bottles of water for six months. A suitable room is necessary—one that can be darkened, and kept cool—say temperature not below 38 degs. nor above

45 degs. during the winter. What is required is a cool, dry air; any sign of dampness in the air would be detrimental to the berries, and if one of these exhibit the slightest sign of decay it should be cut out at once, as it would contaminate the rest. Grapes that are required for use after November are usually bottled, as after that time it is not good for the Vines to allow the Grapes to hang on them. It is not necessary to bottle any required for use before that date; it is usual to let them hang on the Vines, but should they be in the way of plants or anything else in the house they can be cut and bottled with success. Ordinary wine-bottles will suffice. These can easily be hung up to a nail in the rafters of the roof or elsewhere, or a temporary rack can be made which will admit of the bottles swinging. If a piece of wire is fastened round the neck of the bottle, filled with clean water, the weight of the bunch will balance the bottle when hung up, and in this way the Grapes will hang clear of the bottle. Three inches to six inches of stem should be allowed to each shoot below the bunch, according to the distance of the bunch from the main rod. In cutting the stem upon which the bunch is borne, care should be taken not to interfere with the eyes nearest the stem of the Vine, as these are intended to be left in pruning to give the next season's crop of fruit. With the water should be added one teaspoonful of powdered charcoal, but not too fine. This will assist in keeping the water sweet for the bunches that are intended to hang the longest; but for hanging, say, a month or so, this is not necessary. Place the stalk in the bottle as deep in the water as is necessary to enable it to remain firm. The stems above the bunches should be left intact, as the berries are not then so liable to shrivel. After the bunches have been cut about two days more water must be added to that in the bottles, as the stems will have absorbed a quantity, and any of these which were short may be quite dry on account of the absorption.—S. P.

4563.—**Management of Pear-trees.**—There may be two reasons why the Pear-trees on the wall do not bear fruit. One may be owing to bad management; the other they may not be free-bearing sorts. Trees in the open garden will bear if they are simply let alone, but on a wall they require a system of pruning and training that will suppress the development of too much young wood, and that will promote the production of fruitful spurs. In rich soil Pear-trees will, if simply spurred back at the end of each season, do little more than produce a thicket of young wood from the old branches; whereas by careful summer pinching and pruning they will form fruitful wood in abundance.—J. D. E.

— "A. L." does not say if his trees make much growth or none at all hardly. Either of these failings would account for the thinness of the fruit crop. If numerous long eappy roots are made the trees require root-pruning; too much growth is being made. With a spade on a trench 3 feet away from the stem of each tree and as deep as roots are to be found. Just a narrow trench is all that is required, the object being to sever the large roots, which are devoid of fibrous matter, which really are the feeders of the tree, and not these long, fibreless roots. By cutting them in two numerous small roots will push from the extremity after the end of each has been clearly relieved of all jagged parts. Do not give such trees manure in any form until a full crop of fruit is borne, but keep the roots well supplied with moisture during dry weather. If the trees make but little or no growth at all, they ought to be lifted towards the end of October and replanted in fresh soil, thus encouraging new growth. Amulching of partly-decayed manure from the stables will not only feed the roots, but will conserve the moisture in the soil.—S. P.

The Dartmouth Crab.—What a beautiful subject this is, both while in bloom and when the fruit is ripe! The intense purple-crimson colour of the latter gives it quite the appearance of a tree of fine Plums, while the beautiful bloom on the fruit heightens the illusion—indeed, when walking through a large nursery in the neighbourhood recently with a friend he really mistook a plant of this Crab for a Plum and could scarcely be persuaded of his mistake. The Siberian Crab is a charming and much more familiar subject, but at least at this season it

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruits and vegetables for drawing. The drawings so made will be engraved in the best manner, and will appear in our issues in GARDENING ILLUSTRATED.

must yield to the former in attractiveness. These two Crahs, which (as well as a few others) thoroughly deserve to be freely planted in pleasure-grounds, are extremely hardy and easily cultivated, thriving excellently in cold, damp, or heavy soils.—B. C. R.

OUTDOOR PLANTS.

HARDY ANNUALS.

VIOLET CRESS (IONOPSIDIUM ACAULE).

This is one of the most charming little early spring annuals we possess. It had for many years been a general favorite for rockeries, and especially old crumbling walls, where it makes itself quite at home, and in a very few years takes full possession. It forms dense tufty rosettes from 1 inch to 2 inches high, with innumerable kidney-shaped leaves and abundance of pale violet flowers. It is a hardy annual in the true sense of the term, seedlings springing up in all directions where plants have seeded the previous year. As a weed in the rockery it is a very welcome one; the plants fill all the crevices and rarely get in the way of other dwarf growing alpine. It sows itself with such certainty as to possess all the advantages of a true perennial. Along rough stone-edged pathways, on rough stone steps, old brick walls, and leaved any receptacle that will give a plant a foothold, it may be grown with singular effect. The autumn-sown seeds produce plants which flower early in spring, and the plants from spring and early summer-sown seeds flower throughout summer and autumn. It is also largely used

a good time to put on the lime; but it would be a grave error to give the lawn a dressing of manure immediately after the lime. The better time to apply the manure would be in the spring—a month or so before commencing to cut the Grass; rake it well, and then roll it in.—J. D. B.

A dressing of lime and manure may probably benefit a newly-made lawn. A great deal depends upon its condition. Very often where the levels of the ground have been altered some of the inferior subsoil is brought to the surface; then a dressing of lime and manure is beneficial, but I have seen cases where the Grass grows strong enough without manure. Newly-slaked lime may be usefully applied to a great many lawns. Its tendency is to eradicate Moss and banish worms, and it fines the Grasses. The best time to apply manure or lime, or both, is during the winter—say, December or January, so that the weather may disintegrate it, and render it fit to be absorbed. In February or March use the bush-barrow, or, if on a small sward, the rake or a herd, worn broom will do.—E. H.

A newly-made lawn should not require covering with either lime or manure, except where the Grass is weakly, then a thin dressing of decayed vegetable refuse and wood-ashes would be an advantage. If the ground is covered with Moss, a sprinkling of lime would tend to kill the Moss and thus allow the Grass a better chance to grow. Early in November is a good time to apply the top-dressing; by February it will have worked down into the soil, leaving nothing but stones or bits of wood.

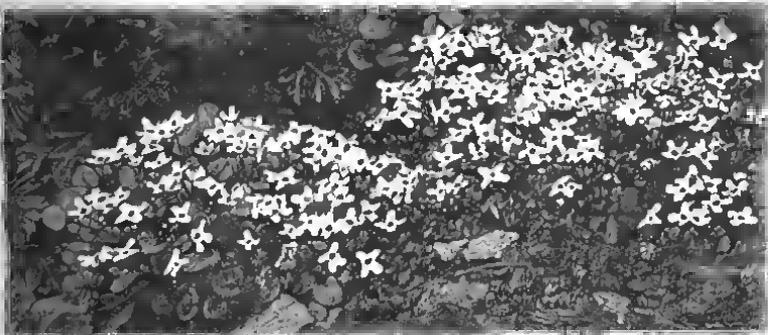
almost useless, as well as undesirable, to attempt the culture of anything of either a strong-rooting nature or that requiring abundance of nutriment. Suitable plants for a wall with such an aspect are the Winter or Naked-flowered Jasmine, *J. revolutum*, *Escallonia macrantha*, and *Pyrus japonica*, or *P. Maniei*, or, if the wall is over 6 feet in height, a Passion-flower, a *Clematis* or two, and some *Roses* might be more suitable. In a warm, local climate the fragrant lemon-scented *Verbena* and *Myrtle* would probably survive the winter, and in a few years become very handsome plants, while, lastly, *Chrysanthemums* of the choicer varieties would thrive and bloom beautifully with care and plenty of nourishment. The border being full of the roots of the foregoing, the best kind of plants of low growth to be placed in front of them will be such as the *Thrifta* (*Armeria*), pink and white, *Sedums*, and *Saxifraga* of sorts, with a few *Petunias*, *Nolanas*, dwarf *Tropaeolums*, *Portulacae*, &c., in the summer time. A few plants of the golden variegated *Euonymus* towards the back would look nice. If *Chrysanthemums* were grown they should be well manured and frequently syringed in hot weather.—B. C. R.

You can hardly expect to do much laying out in a space 1 foot or 18 inches wide. You cannot do better than plant *Tee Roses* for covering the walls; the sorts may be *Madame Lemhard*, *Marie Van Houtte*, *Perle de Lyon*, and *Madame Eugene Verdier*. If you plant these *Roses* in 18 inches of good soil, you will get some beautiful flowers from early summer until late in the autumn; you may have two clumps of bulbs between each two *Roses*. These may consist of *Hyacinths*, *Tulips*, *Snowdrops*, and *Crocuses*, and *Daffodils* if room.—J. C. C.

"Soil" has a very small plot indeed to deal with, but as it is in a sunny position I would have a good display of bulbs in it, especially the early-flowering bulbous *Iris*, and the later Spanish and English varieties in great variety. The early species are *I. reticulata*, followed by *I. persica*. *Crocuses*, *Tulips*, *Hyacinths*, and *Daffodils* would be beautiful in their season. It might be filled with "*Geraniums*" and a few other bedding plants when the display of bulbs has passed away.—J. D. E.

You certainly have much ground available. I presume it is a border that requires dealing with, as it is only a foot or 18 inches wide, not a plot. You can make this little border very pretty with the help of a few good plants. The wall may be covered with creepers, such as *Jasminum nudiflorum*, *Clematis Jackman*, or *Viola*, whilst in the border put a few good bulbs, such as *Daffodils*, *Tulips*, *Hyacinths*, the pretty little *Glory of the Snow* or *Chionodoxa* *Lunellii*, *Crocuses*, and other kinds; but these will be sufficient. Then you may have herbaceous plants, the *Rock Madwort*, *Alyssum saxatile*, very pretty in the spring, when covered with golden-yellow flowers, *Achillea ptarmica* fl. pl., the *Double Sneezewort*, the flowers white and quite double, *Spring Adonis* (*A. vernalis*), *Anemones* in variety, *Antirrhinums*, *Arahis abida* (the *White Rock Cress*), *Ambristias*, *Campanulas*, especially the dwarf kinds, such as *C. fragilis*, *C. carpatia*, *C. pumila*, and the tall-growing *C. persicifolia*, for the back. Wall-flowers are very beautiful in the late spring, and also *Forget-me-nots*, both of which will succeed in this position. Select also *Coreopsis lanceolata*, which blooms throughout the summer. The *Scarlet-flowered Delphinium nudicaule*, *Pinks*, *Carnations*, and *Tufted Pansies*, *Rudbeckia speciosa*, *Chrysanthemum Mrs. DeGraange*, for the autumn; also the two dwarf *Asters*, *A. acris* and *A. smillex*, which are both remarkably showy. Fine plants for such a position also are *Lychnis viscaria*, *Gypsophila paniculata*, *Helianthus rigidus* (autumn flowering), the *Day Lilies*, *Lilium candidum*, *Primroses*, *Auriculas*, and such old-fashioned things. Of course this list might be very greatly extended, but that will make a very good beginning. Others may be added in time. I have avoided as much as possible tall strong growers, as there is not sufficient space for them in the border.—C. T.

The space is so very small there is not much scope for design or anything beyond making the soil as good and as deep as possible, and planting the flowers you love best. Early-flowering bulbs, wall-flowers, and annuals, with a few *Pinks* and *Carnations*, and "*Geranium*" or two, with two or three *Roses* on the wall, will make the border effective.—E. H.



Violet Cress (*Ionopsidium acule*). Engraved from a photograph sent by Miss Wolley Dod, Edge Hall, Malpas.

for early greenhouse work, either sown thinly or pricked out into suitable sized pots, half-a-dozen or more tufts in each. It is a native of Portugal and belongs to the Crucifers.

4570.—A new garden.—Worms are not injurious to the soil, but if you have too many you can soon reduce them by trenching up the ground and turning it into a few run for a few days, after which water with clear lime-water.—A. G. BUTLER.

Give the whole of the ground a good dressing of lime, which will quickly get rid of most of the worms and sweeten and improve the soil as well. The proper time and way to apply manure to fruit-trees, large and small, is in the spring, when the weather begins to get warm—say, in April or the early part of May. Spread a good coat all over the roots, let it lie all the summer, and fork what remains of it very lightly into the ground in October. A little lime is also beneficial, but this should be applied before the manure.—B. C. R.

Worms disturb the soil, but their work is often beneficial. To banish them give a good dressing of lime and soot about January. Fruit land and flower-borders may be manured any time during autumn or early winter. In the case of flower-borders, especially if they contain bulbs, the manure is best laid on the surface and forked in after the bulbs come through in the early spring.—E. H.

4572.—A new lawn.—Supposing the lawn has been newly laid with fresh turf, and that it is in good condition, there is no reason why anything should be done to it at all. Lime is a good thing for old lawns that have become covered with green Moss. It destroys the Moss and greatly improves the lawn for it is of such that Moss is troublesome. Now would be

These should be swept off and the lawn well rolled. Should there be thin places in the Grass, a little lawn-seed scattered over these early in April, afterwards raking the lawn with a sharp-toothed iron rake, and finishing off with a good rolling.—S. P.

If your lawn has been recently made with good turf it will not require dressing either with lime or manure. If the sward has been obtained by sowing Grass-seed it would do good to sprinkle some fine earth over it early in October, or what would be still better is a dressing of charred refuse, which is the remains of a smouldering fire. There is more fertilising matter in this apparently common looking stuff than its appearance indicates. If the ground is as dry with you as it is in the West of England, where I write, two or three good soakings of water will do more good in getting the Grass established before winter than any surface dressing you can give it.—J. C. C.

4575.—Laying out a small plot.—As it is in a front garden, it is of no use to put any flowers into it which would be suitable for buttonholes. They would be certain to be picked by the tradesmen's boys or by flower-hawkers. *Roses*, *Carnations*, *Hyacinths*, *Tulips*, *Narcissus*, &c., are invariably stolen from front gardens in this neighbourhood, and probably from all others. I should recommend *Pyracantha*, *Ceanothus*, *Yellow Jasmine*, and *Ampelopsis Veitchi* for the wall, and for the front of the bed *Solomon's Seal*, *German Iris*, *Phlox*, and dwarf *Michaelmas Daisies*. These are not likely to be much meddled with.—A. G. BUTLER.

Such a border is usually occupied by the roots of plants of a more or less climbing nature growing against the wall, and in this case it is

INDOOR PLANTS.

AMONG THE BEDDING-PLANTS.

Nor another day should be lost in making up cuttings of Zonal and Fancy Pelargoniums, also of Heliotropium, Petunias, Verbena, Ageratum, Iresines, &c., that will be wanted for bedding purposes next season. All of these, and many more, may be rooted on a shelf or under a glass shade; indeed, all but the Pelargoniums will do better if kept slightly close for a time. One is too often tempted to put off this operation until frost has set in, or, at any rate, until the growth of bedding-plants. Because the plants are looking at their best in the late autumn we must not sacrifice our future stock by a few days' delay. Nor is this at all necessary, because it is very easy to take off a few cuttings from different places, and if done in two or three batches the growth will not be missed. A good stock of Zonal Pelargoniums is always useful, and as they can be struck in boxes and placed on a shelf out of the way until early spring, when they should be potted off, there is little excuse for a short crop next summer. I never knew the cuttings of these to look more promising; the dry and sunny season having hardened the growth into such cuttings as are sure to root freely and stand over the winter. Heliotropium, Ageratum, &c., we do not need many of to secure a good stock from next year, as these struck now will produce large quantities of cuttings when placed into heat as soon as the days turn again. Pansies and Violas will also strike very freely now, and will form healthy young stock for early spring bedding. Choose the stouter-like growths, many of which can be secured with a few roots, or at any rate with wood just ready from new roots. The strong, sappy, and flowering growth is not so suitable for propagating from. If you possess a few seeds of a good strain, they may be sown in boxes or pans at once. Sow thinly, then the seedlings can remain until you want to transplant them to their permanent quarters early in spring. They will flower well the first year, and few subjects are more showy from March until the summer bedding comes in than a good strain of Pansies and Violas. They may also be left all summer, and will still keep up a grand display of bloom, particularly if advantage be taken of showery weather to give them a sprinkling of guano or other artificial stimulant. The few flowers injured at the time will not matter much, as they would be spoilt by the weather, while the great advantage of the sport afforded by the guano will be noticeable all the summer. P. U.

4574.—**Tuberosee.**—The best things to do with Tuberosee when they have done flowering is to put them into the dustbin; they are of no further use. This is the one serious drawback to growing these bulbs.—A. G. BUTLER.

— After having once flowered the roots are useless, and must be thrown away. No treatment that can be afforded will cause them to bloom a second time in our climate.—B. C. R.

— It is not much use endeavoring to use these for a second crop of blooms. They require special treatment, and very seldom please. Tuberosee are grown with the express purpose of yielding one good crop of bloom after they reach the purchaser, and it is not worth the trouble of trying them the second season.—P. U.

— These bulbs are of no use a second year. Our climate will not ripen them sufficiently to flower well; but you might plant out in the border, sheltering them with a mound of ashes, and see what comes of it.—E. H.

— The bulbs of the Tuberosee are not usually kept after they have flowered, as they have a tendency to degenerate with our system of culture under glass; but they may be dried off, and either kept in the pots with the soil perfectly dry, or they may be taken out and laid in quite dry sand. The bulbs are imported at intervals of three or four weeks for successive bloom; as soon as they are potted in moderately moist soil place the pots in a bottom-heat of about 88 degs. or so, in a warm greenhouse or cool plant stove temperature. Do not water at the roots until growth is made, and when the plants are in growth syringe freely to keep down red-spider. They should also be kept in a light position near the glass.—J. D. E.

4578.—**Peat for Azaleas.**—I made up a peat bed for Azaleas ten years ago only 1 foot deep, and they have flourished well ever since. They require much the same treatment

Rhododendrons, and it is not worth while to plant either the one or the other in soil such as would only enable the plants to live and not flourish. A third of the loam may be mixed with the peat, and the soil ought to be drained; stagnant water causes the plants to become covered with Lichens. Although the plants have done well in a depth of 1 foot of prepared soil, I would have made the bed 18 inches deep if I could have obtained peat easily, but I had to get it at a distance of 80 or 90 miles.—J. D. E.

— A made soil of 2 feet deep would be sufficient for these. You need not use peat and vegetable refuse for the whole of it. If you were to put a third of each with the same quantity of your natural soil they would probably do better, especially if you could add a little coarse sand.—P. U.

4503.—**Compost for Oleanders.**—These handsome plants will succeed almost equally well in either a loamy or a peaty medium, but as they flower more freely in the former it should be preferred. They even succeed in a pure turfy or fibrous loam of good quality only, mixed with enough sand to keep it open; but perhaps the best compost consists of four parts of such loam to one part each of peat and leaf-mould, and one eighth of the whole of sharp sand. Drain the pots well and make the soil quite firm, especially in the case of large specimens.—B. C. R.

— Loam and peat or leaf-mould with enough sand to keep it open will grow the Oleander well—my two-thirds of loam to one-third of leaf-mould or peat, well broken up with the spade, but not to be sifted except for potting off cuttings.—E. H.

ROSES.

Rose Grace Darling.—This is a splendid hybrid Tea-scented Rose for a small garden. The reason is that the plants, when upon the Brier-stock, are remarkably vigorous, and bloom over a very long season, from quite early summer until the frosts come. The flowers are produced with great freedom, and they are distinct and pleasing in colour, cream, touched with rose-pink. They are produced on strong stems, and above the fine green leafage, so to speak, something in the way of Ernest Metz. Grace Darling is certainly one of the best garden Roses.—V. C.

4548.—**Roses from cuttings and seeds.**—Beyond the question of novelty, raising Rose-trees from seed has not much to recommend it. However, it is not a difficult matter. When the hips which contain the seed are ripe, gather them, taking out the seed, saving it in a dry place until the following March, when it should be sown in sandy soil in a gentle bottom-heat, which ensures a much quicker germination than though the seed was sown in the open. Gradually harden off the plants and finally plant them out in the open. Roses of many kinds are easily raised from cuttings made from the current season's growth, cutting the shoots into 8-inch lengths, rejecting the upper part of the shoot, owing to its being unripe and, consequently, not in a state to send out roots. A border at the foot of a west wall is a good site for the cuttings. Chop out a trench 4 inches deep with a spade, sprinkling at the bottom some sand or road grit. In this roots form quicker than in soil. The cuttings are placed in the trench 3 inches apart, having been first cut square below a joint, removing the bottom leaves. Tread the soil firmly about the cuttings. This is most important. If the cutting is constantly moving it cannot make roots. Dig more ground and take out another trench 10 inches from the first. The end of September is a good time to put in the cuttings. Early in November lay a 2-inch thickness of decayed leaves, Cocoa-nut-fibre refuse, or even coal-ashes on the surface between the rows, the object being to prevent the frost from lifting the cuttings by the upheaving of the ground, and thus loosening them at the base. In a year's time nice plants should be available.—S. P.

Rudbeckia speciosa.—What a splendid plant this is for a small garden, or for any garden, however large! It persists in blooming from summer until quite the late autumn, and this year has been one of the gayest of hardy plants. The flowers are intense yellow, set off by a black centre, and borne so freely as to make a dense mass of rich colour. It grows strongly,

and even when only a small clump is planted the effect is remarkably rich. There are few better all-round perennials than this, and this season, in spite of drought and accompanying drawbacks, has bloomed remarkably well.—V. C.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in *GARDENING* free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of *GARDENING*, 37 Southampton-street, Covent-garden, London. Letters on business should be sent to the PUBLISHER. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as *GARDENING* has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in *GARDENING* should mention the number in which they appeared.

4504.—**Aspidistras.**—What is the best treatment for Aspidistras? What soil is needed?—M. R.

4505.—**Making leaf-manne.**—Which is the best way of making leaf-manne?—J. G. LOUDON.

4506.—**Planting a Pentstemon.**—When would be the best time to plant a Pentstemon?—FLORANCE.

4507.—**Daffodils for a small border.**—What Daffodils are best for a small border?—M. Y. L.

4508.—**Greenhouse during frost.**—What is the best material to cover the glass of a greenhouse with to help keep out frost?—J. H. H.

4509.—**Seaweed and Asparagus.**—Will anyone kindly tell me where I can obtain a truckload of Seaweed on the Great Western Railway?—ASPARAGUS BED.

4500.—**Scale on a Rose.**—I have a Gloire de Dijon Rose which is infested with brown scale. What should I do with it? It is a large one, and potted out.—G. P. O.

4501.—**Paring and burning turf, &c.**—Would some reader who has had experience in the above method of treating loam kindly give time and method of operation?—SPADE.

4502.—**Aspidistras.**—I should be glad to know how to prevent Aspidistras leaves (the variegated ones) turning green? What treatment to make them variegated?—ESQUINAS.

4503.—**Fear for a wall.**—Will someone kindly inform me as to the best desert Pea to plant to grow up a wall facing south-east, in a good sandy soil? Also treatment of same?—M. R.

4504.—**Marguerites for winter.**—Please say how to treat Marguerites for winter flowering in a room? I have the two white and the yellow. They have not flowered much as yet.—M. Y. L.

4505.—**Early Vines.**—Will someone kindly inform me when is the best time to prune early Vines, and also what is best to paint the rods with, and what quantity of each to mix?—ANATHEU.

4506.—**Wooden labels.**—Will someone kindly tell me how to prepare wooden labels for writing up with common lead-pencils, such as are used by nurserymen and florists?—JAMES HOS.

4507.—**Apple-trees in bloom.**—A large number of my dwarf Apple-trees are now in bloom. Will this affect next year's crop, and what is best to be done now—that is, if anything can be done?—G. R.

4508.—**Chrysanthemums from seed.**—Would any reader of *GARDENING* kindly give me information how to hybridise and save Chrysanthemum seed, and also how to grow them from the same?—INTERESTED ONE.

4509.—**Treatment of an Orange tree.**—Would someone kindly tell me how to treat an Orange-tree to make it bloom the beginning of June? It flowered about April last year. It has been in a conservatory ever since.—WILDINA.

4510.—**Plants for a conservatory.**—Will "J. C. C." be kind enough to state names of plants, and when to sow seed and strike cuttings of each plant to keep up a perfection of bloom all the year round in a heated conservatory?—E. M.

4511.—**White Roses.**—Would someone kindly give the names of four dwarf pure-white Roses, including a fine Chrysantheum to place at the four corners of a garden in a well-shaded gravel-plot? Any answer or suggestion will be gratefully received.—BASSIN.

4512.—**Clover seed and Strawberry.**—Will someone kindly tell me the proper time to sow Clover seed among Strawberries, so I saw one of the papers it was advisable to have it, to keep the weeds down and the fruit clean? Is this so?—E. H. H.

4513.—**White Tomato-ry.**—Will someone kindly inform me if the small white ry often seen on Tomatoes is injurious to Chrysanthemums? Would it be advisable to stove a large greenhouse in which these pests are before housing the Chrysanthemums?—T. C.

4514.—**Akebia quinata.**—Is it unusual for Akebia quinata to bear fruit in this country? One here on the wall of a house has fruits as large as a Lemon, which split open and have rows of black seeds. It has been here ten years, and bears fruit every year.—SPUTA.

4615.—Tea Rose for a west wall.—Would "T." kindly give the name of the Tea Rose for a west wall? I want those delicate shades of colour not to be had in H.P. Roses. As my space is limited I want the best possible.—FIFESHIRE, Scotland.

4616.—Packing Lilliums.—Will it be safe for me to pack my Lilliums to Coons-nut-fire as they die down? I am thinking of leaving my house, and should not get another until the spring, and as I have a great number in the garden and pots, should like to store them.—MRS. FLOWER.

4617.—Treatment of Camellias.—Will someone kindly give me some information concerning the treatment of Camellias? The small leaves of my plant change colour, while the larger ones remain green. The plants have been kept in the open air during summer months.—J. W. E.

4618.—Field mice.—Will someone kindly tell me how to rid my garden of field mice, which have lately appeared in many places, and are eating various plants? My garden was newly made this spring, and is the only one out of a large field. I have got rid of moles with traps, but now mice have appeared.—MOSLEY.

4619.—Chrysanthemum for show.—I should like to grow about thirty Chrysanthemum next year for large exhibition blooms, and I will be obliged if you or any of your readers will name the best twenty-four for this purpose, and give any hints regarding their cultivation for this purpose.—C. W. GENTLEMAN.

4620.—A legal agreement.—I have a house on a three years' agreement, and wanted to allow the tenant for say shrubs, &c., he might plant during the term. That is now fifteen years ago. No other agreement has been taken, but he has stayed on as a yearly tenant. Am I now bound to carry out my promise?—H. G. W.

4621.—Asparagus-bed.—I see your correspondent, "E. Hobday," recommends stripping off the seeds on Asparagus-tops at once. Be good enough to tell me what should be done with these seeds? My Asparagus bed is thin in places. Could these seeds be used by placing in the bed to secure more even heads throughout the bed?—J. N.

4622.—Mealy-bug.—Will someone kindly tell me how to get rid of what I call mealy-bug? I have only had a greenhouse two years, and am quite a novice in growing fruit under glass. I have two Grape-Vines and about twenty Tomato-plants in a house 16 feet by 11 feet. I have tried burning Tobacco-paper. The beg first came on the Tomatoes.—W. W. RICHARDS.

4623.—Vines in a cold house.—I should be glad of some advice. The vines have had artificial heat in past years, but I want to grow them naturally. The Grapes have been good. What is the new treatment with regard to ventilation, watering, &c.? There is an inside and outside border. When and what sort of Vines should be put in in place of dead ones?—ANATRA.

4624.—Spiraea japonica.—Following directions in GARDENING, I planted Spiraea japonica in the open ground after flowering in the spring. The foliage has sprung up again, and just lately plants have thrown up flower-buds, which are, however, dying off. Can I force them again this winter, or must they rest a year? And, if so, when must they be potted up next autumn?—JURONGAU.

4625.—Shrubs in flower-beds, &c.—Will anyone kindly suggest a good way of planting two large flowers with shrubs and perennial plants (paranatal only), so that they may look bright and orderly with as little outlay as possible either of time or money? The soil is sandy, and the garden plots are in terraces one below the other, facing to the south-west and divided by a path.—ANATRA.

4626.—Bine Gum and variegated Agaves.—Can I leave Blue Gum and variegated Agaves out all winter close to the south-west coast? They are fairly sheltered, but last winter, though we had no snow we had weeks of hard frost. If anyone can kindly advise me I shall be obliged, as both are admirably in the summer, and I remember an Agave in a Devonshire garden, arranged in GARDENING last year.—R. L.

4627.—Yellow-spined Arums.—A few months since a writer in GARDENING was speaking of two kinds of Yellow-spined Arum Lilies, and recommended one of the two, which, if I remember rightly, was Pinstriped. If that writer should happen to see this would he kindly say where a plant could be obtained, and the probable price for a flowering root? I mean strong enough to flower the coming winter or spring.—YELLOW ARUM.

4628.—A town garden.—My garden, which is in Clapham, has a border of 3 feet 6 inches wide, in which I have just planted border Carnations. Will one of your readers kindly say whether these will require any protection during the winter, such as a mulch of Coons-nut-fire, stable-manure, or ashes? Would the fibre or manure cause the plants to damp off? Any information as to the way in which I can best keep them will be greatly esteemed.—G. SANDERS.

4629.—Building a glass-house.—I have a sashes, with which I am about to construct a glass-house, intended for growing Rhubarb in winter, Tomatoes in summer, and Chrysanthemum in autumn, in beds on each side of the house, heated by a fire. Span roof 6 feet high to the ridge inside, 30 feet long by 10 feet wide, running south-south-east, with a ventilator at the south end; door north, and four ventilators on each side, immediately under the eaves. Is it necessary to have ventilation at the top as well?—J. SEATON.

4630.—Bougainvillea glabra.—I have a young plant of this I bought last June in a 4-inch pot; it is now 4 feet high, with side shoots about 8 inches long, looking very healthy in a warm house, but is quite pot-bound. Shall I report it now or wait till after flowering next spring? Should the plant (as it is so young) be allowed to rest a few days during the winter, and will it require pruning before flowering, as the wood so young? I shall feel obliged if someone will kindly give me some information on the subject.—L. E.

4631.—Treatment of fruit-trees.—I have a moderate-sized garden, in which I have some thirty or forty trees, consisting of Apple, Pear, Cherry, and Plum, figs, bush and some standards, but I find them getting too large, as they overshadow almost everything else. How

far may I prune them back without lessening my crop of fruit? What I really want is a scissor which I may cut off all the wood made this year without injuring the tree, if the same rule applies to all, and the best time to operate?—ROBERT W. GREEN.

4632.—Winter Pears.—I should be much obliged for some advice about the gathering and keeping of winter Pears. We have a large tree of Winter Niella which now is covered with fine Pears. What is the best way of storing and keeping them till they are fit to eat? We were advised one year to hang them up by the stalks, but with such a quantity it would be almost impossible, and I did not think it answered as well. Should they be kept in a warm place? And would it hurt them to be kept to the dark? Any hints thankfully received.—K.

4633.—Rose "W. A. Richardson."—I have a Wm. A. Richardson Rose in my greenhouse, S.W. aspect, heated to keep out frost. The Rose was purchased last winter in a 4-inch pot. It had two shoots 2 feet long, and this spring bore two flowers. It is now in an 8-inch pot, and has this year made about 8 feet, 6 feet, 4 feet, 3 feet, 2 feet long respectively, which are still growing. It is trained along the back of house. What treatment will it require from now to time of flowering? How should I proceed after it has flowered? When will it require repotting? It is entirely free from insects, and looks very healthy.—FRITH.

4634.—Management of a garden.—I have a small garden, facing south. We got the early sun, and everything seems to grow, but my fascination is Roses. Last year I at haphazard ordered a bundle of forty, and gave them a chance; half died, and the other half are alive and well, although have not flowered very much. Would anyone kindly say about twenty should be planted this year for steady growth? The principal ones I have now are La France, Beauty of Waltham, Barouers Rothschild, Prince Camille de Rohan, Comtesse Oxford, Mezes Chart, Camille Bernardin, and Gloire de Dijon.—ROBARIAN.

4635.—Rose "Gloire Lyonnaise."—Thanks for advice as to growth of this Rose. In answer to "J. O. C." as to the flowering of the above Rose when pegged down, I have found that in spring it gave a few flowers at the tips of some of the shorter uprighting branches, but on the branches that were pegged down, the shoots grew level with the ground to about 1 inch from the bloom, and then turned suddenly upwards, which, of course, made an awkward shape for showing. I had already thought the Rose more suitable for training, and since the suggestion given by "J. O. C." have almost decided to train it over an archway at the top of Grass steps. I shall be glad of answers to a query I am inserting.—MICAWORK.

4636.—Treatment of Begonias.—I have just commenced to grow Begonias. I have some very fair-sized plants, from three to eight flowering branches or stems on each plant. They were grown in black loam, tort, sharp sand, manure from Leek-ranch of last year, and leaf-mould, in about equal proportions. I kept them in a greenhouse, gave them plenty of air, and watered freely every day. They were exposed to the sun. My plants did very well, flowered freely, but the flowers dropped off after two or three days. Is the casting off of the flowers a habit of the Begonia? If so, what would you recommend that would have the effect of counteracting it? Or, if my treatment of them causes the flowers to drop off, how should I treat them now for the winter?—YOTTI.

4637.—Heating a small greenhouse.—I have a small greenhouse, 12 feet long by 3 feet wide, and rather high (not so covered) with a levelable, being part of an existing building. It is heated by a No. 1 Loughborough boiler, with two 4-inch pipes, each 5 yards long, along ead and side of building, due no top of boiler with smoke pipe 10 feet high straight up through the roof. It does not answer satisfactorily and wastes considerably. At times the draught is so great the fire will not keep in all night with both doors closed and damper nearly set, when it comes to the end of the night, the fire is caused by blocking up of smoke pipe with soot. I burn nothing but coke, and have the pipe swept every six weeks when fire is on day and night. I follow instructions for banking up at bed-time most carefully. Directions also recommend kelping supply cistern filled over opening into top pipe, but if I do so water rises and overflows, flooding the floor and filling house with steam. I am told there ought to be a trap to prevent the supply cistern from overflowing into open air. Is this so? Any advice will be gratefully received.—PETERUX OX.

4638.—Fruit farming.—Two of us intend to try and get a living at fruit farming. We have purchased 12 acres of freehold land, free of title and land tax; this has high, is well drained, and slopes gently. South aspect, medium loam. All kinds of fruit do well in the neighbourhood. Seven acres are old pasture at present, 5 acres arable; we have put it in nice condition for setting. We have no particular market, but should have to find one. We are one mile from station, and thirty-five from London. We are anxious to grow other crops, but have had very little to do with fruit. Will a practical grower give us advice on the matter? Is it advisable to plant the whole of the land soon as possible, or say 2 or 3 acres at first, and see how we get on? We thought of planting standard Apples about 30 feet apart, bush and pyramid Apples 10 feet apart, with Currants (meat black), and Gooseberries 5 feet apart. Do you think it better to start with one crop, or market? Any suggestions will be highly appreciated. I might add that we shall not want any profits for two or three years. The land is divided into three fields, protected by hedges.—G. LAWRENCE, Halegh, Essex.

4639.—Florists' Tulips.—In GARDENING of 19th June, 1892, there appeared an article on Florists' Tulips by "Mr. J. Douglas." Having formed a small collection of the best-known named varieties, I shall feel obliged if he, or some other of your readers interested in the cultivation of these beautiful flowers, will inform me whether the bulbs may be grown under glass in pots, and, if so, what size of pot and depth of soil is necessary? On a former occasion I referred to you in connection with a small amateur Rose-garden, and am indebted to "Mr. J. O. C." for the reply given. I tender him my best thanks, and feel sure his counsel very useful. So I am now emboldened to ask for instruction in growing Florists' Tulips? Being near town I do not think it probable I

should succeed well in the open garden; besides, the bulbs, though not comparatively cheap compared with prize Tulips, are not so early, and are not, I think, so scarce, and not cheap enough to cultivate as ordinary Dutch Tulips in the open garden. I shall feel obliged by all the advice you can give me. The glass-house in which I propose to grow the Tulips is unheated, the staging is level (divisions peg shaped), and laid level. Would it be better to bed the bulbs thereon in soil and discard the pots? In what depth of soil? I can regulate water supply and drainage. If good blooms can be obtained in pots I prefer to use them.—J. FOAT.

4640.—Grape-Vine in a greenhouse.—I have a Grape-Vine five years old growing in a greenhouse, the fruit of which cracks to a great extent just as the berries are turning colour. The house (span-roofed) is about 12 feet wide, 30 feet long, 10 feet high inside at highest point, roof angle about 45 degs., has top and front ventilators, roots of Vine to outside prepared border, 8 feet deep, 6 feet breadth, and same in length; well top-dressed each winter. I had last year two rods staked across the house about 1 foot 6 inches from glass, bearing thirty-six bunches of splendid Grapes for size (a variety of Black Hamburgh, I believe), but they did not colour, and cracked very much. A miscellaneous collection of plants is grown in the house on side and centre stages; the pathway is kept wet till the days shorten, when less water is used; leaves syringed last year till full began to colour. This year I have two side canes in addition to the two arched ones, each about 8 feet long, the four rods or canes bearing seventy-five bunches. I have not syringed the leaves at all this season, have soaked roots of Vine several times, but not since colouring has commenced. The berries are cracking again, though to a less extent than last year, the Grapes are ripening but colouring badly. Top air on night and day now, foliage fairly healthy, no fire-bait since the spring. Would it be any advantage to fasten the rods close to the glass during the winter when the house is kept at about 45 degs. I am obliged to grow other plants, and do not wish to sacrifice Vine, but would appreciate any advice which will improve it. I may say I ripen fruit and colour well on two pot-Vines of same variety (cuttings from it) to same house.—W. H.

Names of plants and fruits.

*. Any communication respecting plants or fruits, with names, should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C.

Names of plants.—"Lycocaulis."—No, not an Aristolochia but Stigmaphyllon alatum.—R. W. DUNCEAN, Campanula garganica; 2, Spiraea oleroides probably, but not specimen. Others too much of character to recognize.—SPOUTS.—Send again when in flower.—ROSS.—Please send in flower and give name and address.—G. E.—Orchid; a Dieris apparently, but specimen was so much past its best that we cannot name accurately.—J. C.—Adiantum obovatum lacum.—JANINA.—Clematis vitalba.

Names of fruits.—W. DAVIES.—Apples: 1, Cerrilla Codlin; 2, Local kind, not recognized; 3, Blenheim Orange; 4, C. S.—Siberian Crab.—S. K. C.—Apples: 1, Blenheim Orange; 2, Lord Suffield; 3 and 4, Yorkshire Beauty; 5, Not recognized; 6, Reining Redding.—J. W.—Par Williams' Pear, Chrysolite Pear, 2, Hilditch's Grape Buckland Sweetwater.—Hayward.—Apples: 1, Cox's Orange Pippin; 2, Northern Greening; 3, Tower of Glamis, 4, Mère de Ménage; 5, Cardale Codlin; 6, Beak no further; 7, King of the Pippin. Pears: 3, Williams' Bon Chrétien; 9, Baurré de Caplaumont; 10, Marie Louise.—R. WILKINS LION.—We cannot name the Pear from such poor specimens. Probably local sorts.—C. JONES, Fairy-cake.—A very fine specimen of Apple Blenheim Orange.—D. A. A.—Apple: 1, Mère de Ménage; 2, Hawthorned. Pears: 1, Marie Louise; 2, Napoleon.—MIDLAND.—Apples: 1, Mère de Ménage; 2, Cardale Codlin; 3, Yorkshire Beauty.—F. GAMBLE.—Apples: 1, King of the Pippin; 2, Local sort. Count name.—A. A. S.—No doubt the Apples are wrongly named, and we should say they are probably local sorts that have got mixed up with others.—E. J. H.—Apple: 1, Kerry Pippin; 2, Cellini; 3, Beak no further. Pears: 1, Autumn Bergamotte; 2, Autumn Crassane; 3, Vicar of Winkfield.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

W. W. Richards.—By all means put in a new boiler before winter sets in. Any plan of packing would be useless.—AN ENQUIRER.—Send a specimen of the Sedum which you are alluding to.—E. J. H.—Apple: 1, Smith's Blackwater.—No; send them to Kew.—W. BOND.—Eaten by some insect apparently, but we cannot say what. If you should see any insects at work please send some here in a box.—MICEBER.—Please send a branch of the Rose.—J. J. O.—Apply in Messrs. G. Bunyard, fruit-growers, Maidstone, Kent.

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NEW PHOTOGRAPHIC COMPETITION FOR 1893

Owing to the early date at which our prizes were announced to be sent in this year there was not time to properly take many kinds of outdoor fruits, flowers, and vegetables; therefore we offer further prizes for these things, to be competed for during the present year; allowing till the end of November for the work.

Class I.—FLOWERING PLANTS.—A prize of FIVE GUINEAS to the sender of the best collection of photographs of flowering plants grown in the open air or under glass. This series may include flowering trees and shrubs of all sorts.

Class II.—BEST GARDEN FRUITS.—A prize of FIVE GUINEAS for the best collection of photographs of any of our good garden fruits: Grapes, Peaches, Apples, Pears, Plums, or any other fruit grown in Britain. Fruits should not be crowded in dishes if good and clear photographs are sought.

Class III.—BEST VEGETABLES.—A prize of FIVE GUINEAS for the best collection of photographs of best garden vegetables. The object of this is to get fair representations of the finest garden vegetables under the old genuine names. We do not want to exclude real novelties when they are such. In all cases the name of the variety should be written on the back of the photograph.

Class IV.—AUTUMN FLOWERS AND LEAVES.—A prize of FIVE GUINEAS will be given for the best series of photographs of autumn flowers and leaves in the house in a cut state for vase, table, or other kind of indoor decoration.

WHAT TO AVOID.—Cut flowers or plants should not be arranged in vases with patterns on them. Backgrounds should be plain, so as not to come into competition with the beautiful flowers. Figures of men or women, barrows, watering-pots, rakes, hoes, rollers, and other implements, iron railings, wires, or iron supports of any kind, labels, and all like objects should be omitted. Dwarf flowers are ineffective when taken directly from above. The camera should be brought low down for such. All photographs should be mounted singly, and not several on a card. The photographs should not be less in size than 5 inches by 4 inches. The following are the rules to be observed by all competitors:—

In any of the departments, if no collection of sufficient merit be sent in, no prize will be awarded. All competitors not winning a prize will for each photograph chosen receive the sum of half-a-guinea.

FIRST.—The photographs may be of objects in the possession of either the sender or others; but the source whence they are obtained must be stated, and none sent the copyright of which is open to question. There is no limit as to number, and no fee to pay. The Editor is to have the right of engraving and publishing any of the chosen photographs. The photographs may be printed on any good paper that shows the subjects clearly; but those on albumenized paper are preferred for engraving.

SECOND.—The name and address of the sender, together with the name and description of the object shown, should be plainly written in ink on the back of each photograph. This is very important.

THIRD.—All communications relating to the competition must be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C., and the class for which the photographs are intended should be marked on the parcel, which must also be labelled "Photographic Competition." All competitors wishing their photographs returned, if not successful, must enclose postage stamps of sufficient value for that purpose.

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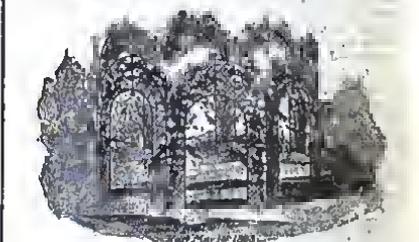
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URBANA-CHAMPAIGN

GARDENING ILLUSTRATED.

No. 761.—Vol. XV.

Founded by W. Robinson, Author of "The English Flower Garden."

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ROSES.

NOTES ON ROSES.

THE PAST SEASON.—The summer that has now passed has not been altogether favourable for these, as the drought has been very severe, the flowers quickly fading both on the plants and when gathered for the house. I expect to find Roses very expensive this year, although in these nurseries I have seen they look remarkably strong and healthy. It is curious to notice, in briefly reviewing the past season, that the dark Roses in particular have succeeded remarkably well, which is exactly opposite to what one would expect. The usual case in very hot seasons is for the dark flowers to get completely burnt up with the sun, the petals thus losing their rich velvety and characteristic beauty. That fine kind, Prince Arthur, has been very good this year, and one reason why the dark Roses are such favourites is because, I think, their colour is rich and the fragrance very strong, and fragrance is not too pronounced in many of the newer Roses in particular. Xavier Olibo, Prince Oamille de Rohan, Pierre Notting, Lonie van Houtte, Fisher Holmes, Reynolds Hole, and Sultan of Zaehihar, are the best dark Roses, practically, and form a very good selection. The worst of such kinds, however, as Pierre Notting is that they are not constant; but it is seldom that such a season as this occurs. Still, it is a fine Rose, very fragrant, and deep in colour, well worthy of a place in gardens.

TEA-SCENTED ROSES are blooming exceptionally well this autumn, and have done so throughout the summer, but the autumn bloom, to my mind, is as charming as that of July. Ernest Metz has proved a splendid variety this year, and has been shown well on many occasions at the exhibitions. It was raised by the French raiser, Guillot, in 1853, and the flowers are very distinct and delicate in colour—carnation-rose is the best description, perhaps the centre of the flower of a brighter tint—while each bloom is borne on a sturdy erect stalk. Writing of Tea-scented Roses reminds me I saw a wreath the other day composed of nothing but Marie van Houtte flowers, and a more exquisite effect I have never seen. This fine Rose, raised by Duocher in 1871, is very beautiful this year. There is great charm in the flowers, which are soft yellow, with the petals edged with rose. Of the newer kinds of Tea Roses, the following have been very satisfactory: Cleopatra, especially early in the season, was delightful, the flowers of a flesh tint, shot with rose, and the petals broad. Corinthia, one of Mr. William Paul's, Welltham-cross, raising, the flowers flesh in colour, marked with rose, and coppery tint. The Bride, Dr. Grill, Ethel Brownlew, Mme. Hoste, Marquise de Vivens, Princess Beatrice, and Sonvenir de S. A. Prince. These are either quite new or comparatively so, and have been very free this year.

GARDEN ROSES.—It is a pleasure to see that the garden Roses—those not suitable for exhibition—are growing greater in public favour each

year. I hope that they will be still more grown, as without the Chinas, Polyanthas, Moss, and other sections the garden loses greatly in interest. I was noticing the other day a bed of the Polyantha varieties, which were a mass of bloom, although late in September. The same remarks apply to the Chinas, which are amongst the most delightful of Roses, very free, and in every way worth a place in both large and small gardens. The most recent addition to the Chinas is Laurotte Mercancy, which has comparatively large flowers, rose, suffused with yellow, and they are produced very freely. The Green Rose, it may be interesting to mention, belongs to the China class. The flowers are quite green, and it is not easy to distinguish the petals from the leaves. The Crimson China is one of the best, the flowers such a deep-crimson colour, and the plant is remarkably hardy. Of course, the common China Rose is the Monthly Rose, and a very bright little flower. This was raised in 1796 by a raiser named Parsons.

CLIMBING ROSES.—I recently saw the beautiful Gloire de Dijon Rose written against, and other varieties recommended as possessing greater value. But I defy anyone to select a more useful, all-round Rose than this Rose of Jacotot's, who sent it out in 1853. I have had a fine lot of blooms from a plant only put in last January, and it has made splendid growth, long shoots full of vigour. Then the flowers are rich in colour, and of splendid fragrance. A sweeter English pictorial one scarcely to be got than produced by a Gloire de Dijon tumbling over a cottage, mounting up even to the chimney, and sending its fragrant flower-laden shoots into the latticed window. Speaking of climbers, I rather like the new L'Idéal; its red and yellow flowers are very pretty in the bud, and show when fully expanded. It is a bright and pleasing Rose, and very strong-growing.

HYBRID TEA ROSES.—This is an important class, but much confused. It would be well, I should think, to put some of the varieties with the Hybrid Perpetuals, and the others with the true Teas. Caroline Testout is a good addition. The flowers are large, of a salmon-pink shade of colour, and very distinct. But the gem of this group is Angustine Guinoisseau, which succeeds very well as a dwarf on the cutting Brier or as a standard. Its flowers are white, with a delicate rose centre, and delightfully sweet.

V. C.

4615.—Tea Roses for a west wall.—I have pleasure in naming twelve good Tea Roses, and "Fifeshire" will do well to send the whole list to a nurseryman when ordering, in case he may be out of one or two of the varieties. I have named six strong growers first, and six of medium growth later. It is always my plan to plant the extra vigorous varieties alternately with those of ordinary growth. I thus secure a good show all the season, and, at the same time, am certain of covering the whole of my wall. Strong growers are very apt to be rather bare at the bottom, and this space is filled in by the shorter varieties. If "Fifeshire" is contemplated, planting ten plants of climbers, a dozen if planted in the manner suggested, will be none

too close. Extra vigorous growers: Belle Lyonnaise (canary-yellow), Climbing Perle des Jardins (deep-yellow), William Ailen Richardson (orange and apricot), L'Idéal (copper, red, orange, and peach), Mme. Chauvry (copper and nankeen-yellow), and Tour Bertrand (clear fawn-yellow). Ordinary growers: Anna Olivier (orange and buff), Dr. Grill (rose and copper), Ernest Metz (salmon-flesh), Françoise Krüger (copper, yellow, and peach), Innocente Pirela (creamy-white), and Jean Duocher (salmon-yellow, with distinct coppery end and blood shadings). All of these are distinct and sweet scented.—P. U.

4600.—Scale on a Rose.—This is about the very worst pest the plant could be troubled with, few remedies being thoroughly successful without harming the Rose. Cut off all the wood you can spare, also the foliage which is ripe, and burn it at once. Then procure a cake of Gishurst Soap and a small painter's sash brush or "tool," as it is sometimes called. Drop a little paraffin upon the soap, dip the brush into warm water, and then make a lather. Work the brush all over the wood affected with scale. The paraffin will run into all crevices, and if you do not use it too strong, and afford a thorough syringing directly after, no harm will be done. Old scale wants a lot of killing. Keep the wood syringed with some good insecticide every third day for the next fortnight.—P. U.

—Dissolve 6 oz. of Gishurst Compound in a gallon of hot water, or less quantity can be made in proportion. The scales will be found principally on the old wood, and if the liquid compound is brushed well over the branches with a small paint-brush the insects will die. There are other modes of treatment, but I have always found this effectual and very economical.—E. H.

4633.—Rose W. A. Richardson.—Your Rose appears to be doing very well, so that you cannot do better than to continue the same treatment. The long shoots may be cut back one-fourth their length in the winter, as I find it flowers better when slightly pruned. As soon as the first flowers are over in the spring it will require more root-room, if you have space for the branches to extend; a pot 12 inches in diameter will not be too large. If you cannot give it a larger pot you must supply the roots regularly with manure-water.—J. O. C.

—You are fortunate in possessing such a healthy and well-grown specimen of this Noisette Rose. I would suggest that you keep it a little dryer than usual, and admit a fair amount of air; or else extend it outside in some sheltered nook for a week or two. This will induce better ripening of the long shoots. Do not prune it except to cut away the tips that are not efficiently matured by the early part of next January. I cannot recommend your reporting it before blooming is over, but you can assist it with liquid manure after the new growth has developed somewhat.—P. U.

4635.—Rose Gloire Lyonnaise.—I wish to thank "Miaowbor" for the information he sends regarding the behavior of this Rose, as it strengthens my opinion that I had already formed that it is more suitable for training on a pillar than for pegging down. A very good figure was given of this Rose in the Garden last week, but it does not show the capacity it

possesses of producing large and handsome flowers when cultivated on a pillar. I am acquainted with a plant so treated that occupies the corner pillar of a verandah where the east wind reaches it in full force; yet it is unharmed, and produces every year such large and perfect flowers that the figure I have referred to gives but a poor idea of its character. When grown under suitable conditions I have no hesitation in recommending this correspondent to train it in the way he suggests.—J. C. C.

4634.—**Management of a garden.**—"Rosarian" will find the following twenty-four Roses hardy, and quite distinct from those named in his query. If planted early they should thrive a great deal more satisfactorily than the forty he mentions, especially as the situation is so good. H. Perpetuals: General Jacqueminot, Fisher Holmes, Mrs. John Laing, Ulrich Brunner, Abel Carrière, Dr. Andry, Suzanne Marie Rodocanachi, Mrs. G. Dickson, Heinrich Schultzeis, and Elie Morel. Tea-scented and Noisettes: Anna Ollivier, Madame Hoste, Marie van Houtte, Dr. Grill, Edith Gifford, Homère, Madame Cusin, Madame de Tartas, and Sunset. Bourbon: Mrs. Paul and Souvenir de la Malmaison. Hybrid Teas: Angeline Ginoiseau, Captain Christy, and Souvenir de Wootton.—P. U.

—The Rev. Dean Hole says in his delightful book about Roses that we must love Roses if we want to grow them successfully; but I fancy this correspondent thinks that they will grow in any jumbled-up fashion. The dead plants he speaks of will, I should hope, prove that he is wrong, and that he will be prepared to give them the attention they require; if not, the best selection of varieties in the world will not help him. Anyway, it is not pleasant to be told—as I have been before now—that the selection of Roses you made for me were a poor lot. Here, however, is a list of good hardy H.P.'s, that does well under ordinary favourable conditions: Earl Dufferin, General Jacqueminot, Charles Lefebvre, Ulrich Brunner, Captain Christy, Paul Noyron, Mrs. G. Dickson, Mrs. Jowett, Mme. Gabrielle Luizet, Prince Camille de Rohan, Hypelyte Jamin, John Hopper, François Micholon, Duchess of Albany, Alfred Colomb, Caroline DuRouen, and Countess of Rosebery.—J. C. C.

4611.—**White Roses.**—Although there are a good number of White Roses, there is not a wide range of choice for the purpose you require them. As a summer-flowering Rose the White Bath is unsurpassed in the purity of its colouring, which is paper-white. Blanche Moreau is an excellent perpetual Moss Rose, and sweetly-scented. Madame Plantier is also fragrant, but it must be allowed to grow into a spreading bush to do well. The pretty little Miniature Rose, Paquerotte, would be very suitable.—J. C. C.

—White Bath is the finest Moss Rose for your purpose; in addition to this I should choose the following three varieties: Souvenir de S. A. Prieux, Madame François Pictet, and The Bride. All are very sweet-scented and free-flowering; they are also of much the same growth as regards strength.—F. U.

4576.—**Plants and insects.**—Probably slugs are the enemies which have destroyed the Pears and Sownflowers. An excellent plan to trap these enemies is the following, which the writer has found most successful. Small tins, such as those used for cocoa (or old encans) may be placed in the ground, the edge level with the soil, and filled with milk and water or flour and water. Into these tins or encans the elings will crowd greedily, and in a few days they are full of the stain, when they can be taken up and fresh milk or flour and water supplied. Snails even will tumble into rather deep tins, but slugs are caught better in this way than in any other, as there is no necessity to go out late at night to catch them. A thorough dressing of lime will be beneficial to the soil when the spring arrives and soot should be used freely, but not stable-manure when there is a plague of elings. Soot and lime should not, however, be used together for chemical reasons, but a dressing of soot may be given at any time with advantage.—I. L. R.

4568.—**Wooden labels.**—All the preparation wood labels require is to slightly char the parts which go into the soil by holding them for a short time over the flame of a lamp, and then rub a little white paint on the side which it is intended to write upon. (They say wooden labels may be bought much cheaper than they are sold at home. All seedsmen keep them.) The same may be said as regards stakes for tying up plants.—E. H.

GARDEN WORK.

Conservatory.

Ventilate at every favourable opportunity, but avoid cold draughts. Mignonette coming into flower must have a light position near the glass, and be watered carefully; in fact, all waterings should be done with judgment now. There is no better test than tapping the sides of the pots, and if in doubt after this test, lift the pot and try its weight. During winter the watering is the most important work. Some plants require more water than others. Among these might be mentioned the following: *Chrysanthemum*, *Gladiolus*, and *Calceolarias*. All *Chrysanthemums* which now be in a position where protection can be given on cold nights. Late blooms are more valuable than early ones; therefore the late varieties should not be hurried. Only shelter from frost is required in the case of late sorts. The early and late varieties should not be placed in the same house. The plants just opening their flowers will require a little fire, not only to keep out frost, but to keep the plants warm in the case of large, highly-fertile blooms, be even more injurious than frost. Liquid-manure may be given till the flowers are half expanded, and should then cease. Where a collection of hard-wooded plants are grown they should have a house to themselves, and only a little fire-heat used on cold nights, the ventilation being as perfect as possible consistent with the avoidance of cold currents. To do things really well the *Pelargoniums* should have a house to themselves also. In winter *Pelargoniums* require a light, airy position, with a night temperature of 50 degs. or so, so as to keep the plants growing slowly all winter, shifting into the blooming pot not later than February. Zonal *Pelargoniums* will soon be very bright, but it is useless expending a good winter bloom without a genial warmth from fire-heat. There must be heat enough to admit of air being given during the day. If the damp settles on the blooms the fire is soon got wrong. When all the different families of greenhouse plants are cultivated in one house, great care is necessary, both in watering and ventilating, and even then the result cannot be so satisfactory as where several smaller houses can be given to them to permit of their being grouped according to their individual wants. As soon as all the plants are housed, and are settling down a bit, it will save trouble hereafter if a moderate fumigation of Tobacco is given. It will give the few insects which are probably in the house notice to quit. One smoking will do as much good now, when possibly the insects are very few, or even their presence may not have been noticed, than two or three fumigations will do later on, when the warmth and the changed conditions of growth has brought forth numbers of insects. Put up *Spiraea japonica*, *Dryas* (sp. *sp.*), and other hardy subjects for forcing during winter. For the present they may remain in a cold-house or pit. The soil and other boxes which have been prepared for forcing will be better in a cold pit before frost comes.

Stove.

Eucharis Lilies will either be in flower, or the spikes on the point of starting. The flowers are more valuable in winter than summer; therefore the largest number should be worked with that object in view. After the bulbs have been raised an oiled cover for a few weeks, the application of a genial heat, say about 65 degs. at night, with weak liquid-manure applied twice a week, will soon start the spikes. Though stove plants may be grown without bottom-heat, still, a plunging-bed is a valuable adjunct to the stove in forwarding such things as *Eucharis*, *Gardenias*, &c., and the atmosphere of the house is always more genial where there is a speedy fermentation of leaves or tan going on than when the necessary humidity has to be kept up by throwing water down. Stove plants require more atmospheric humidity than any others. A dry heat would soon have a ruinous effect upon stove plants. The practical cultivator, when he puts his head inside a plant-house, can tell in an instant if the conditions of healthy growth are present. Long experience teaches this amongst other things which the novice has to find out by watching thermometers and other instruments. The night temperature of the stove need not exceed 65 degs., and on cold, frosty nights 60 degs. will do no harm. There will be those who say that if a cover of some kind can be improvised, where the house is fitted with blinds, instead of taking them down in winter let them remain, and roll them down on cold nights. Even if they wear out faster, the saving in fuel will more than pay for it, and if on a cold night the fire gets low towards sunrise in morning the plants will be quite safe when the glass is covered. Those who have never tried covers in winter will have their eyes opened to the advantages in a very short time.

Orchard-house.

Most of the late Peaches will be gathered now, and the fruit can be set outside, and the house used for other purposes. This house is generally used for *Chrysanthemums*, and by the time the *Chrysanthemums* are over the tree will want to come back. Any fruit-trees which require retraining should have a shift at once, whilst there is still some little force left in the leaves. Surround the pots with long, dry litter before severe frost comes.

Cyclamens and Chinese Primulas.

These plants do well together. Both like when in bloom a genial temperature of 50 degs. or so. A light position is also necessary, and there must be free ventilation, or the flowers will damp. Cyclamen bulbs must not be buried in the soil, or the leaves and flower-stems will damp off. The largest half of the bulbs should be above the ground level, so that the leaf and flower-stems may stand clear.

Tree-Carnations.

These plants do well together. Both like when in bloom a genial temperature of 50 degs. at night if they are to flower well. They are not satisfactory in a cold-house. Only a limited number of the Tree-Carnations will flower freely in winter, and there must be strong plants before winter sets in. Miss Joffine Improved is one of the best. Though the rubers of Tree-Carnations have given us dwarfier habited plants, it is a question if they flower any better in

winter than the old sorts grown forty years ago. There used to be no difficulty many years ago in having plenty of Tree-Carnations in winter. The flowers were rougher in outline, but they were quite as sweet, and even more numerous than the modern flowers. Winter Cheer is a good variety for winter, and the other day I saw a large quantity of the Marguerite Carnation just coming into flower, proving these are useful for winter blooming, but I do not think they will stand much winter weather. The flower-buds should be prominent by autumn, or by the time they are taken indoors. These will be very useful in the amateur's greenhouse.

Bulbs for Forcing.

should be potted at once. *Hyacinths*, *Tulips*, *Freesias*, and *Narcissus* are all useful. Plunge over the rims in Cocoon-put-ure outside for six weeks to make soot—at least, all except the *Freesias* should be plunged. The latter will be better started in a cool greenhouse, if covered with anything the growth comes weakly.

Window Gardening.

Do not buy *Bonardias* which have been forced into bloom; in fact, any plants taken from a higher temperature than 60 degs. will be weakly, and will be in poor condition. The most useful plants for winter decoration are *Aspidistra*, *Kentias* (in the way of *Falms*), *Aralia*, *Scheuchzeria* and the variegated variety, *Cyperus alternifolius* and *O. distans*, *Dracena indica*, and other green-leaved sorts. *Ficus elastica* does well. Flowering stuff can be introduced as required; but with care the foliage plants named above will be more or less permanent.

Outdoor Garden.

All tender plants must be placed under cover, as there is risk of injury to leaving them exposed now. Questions bearing upon the keeping of tender plants in cold frames have often been asked, and though it would hardly be right to say the thing could not be done yet, the result was so often unsatisfactory that it was hardly worth the attempt to do so without some artificial heat. If the plants survived, they came through the ordeal so much weakened that it took them half the summer to get over it; but though *Geraniums* are difficult to keep without artificial heat, those plants which may still be propagated may be kept in a cold frame quite safely. *Calceolarias* cuttings put in now in a cold frame will make nice plants next spring. *Pentstemon* and *Antirrhinum* in assorted colours, white, yellow, and crimson, will root freely from cuttings planted in boxes in a cold pit. I have a very numerous number of *Geraniums*, advertised to the value of the *Tobacco* *Sergina* to those who have no means of keeping tender plants in winter. The tubers may be lifted, packed in boxes of sand, and placed in the cellar where the frost cannot enter, and kept there till spring. These are very bright and effective, and may be easily had in assorted colours of white, yellow scarlet, and pink, and these in association with masses of early flowers will make a very bright and interesting garden. It is not worth anything for fuel or pot. In some time now in getting in early-flowering bulbs, such as *Snowdrops*, *Crocuses*, *Daffodils*, &c. A good deal, too, may be done to make a garden beautiful with dwarf shrubs, Tuled *Panicles*, and hardy annuals, all of which should be planted as soon as the tender things are cleared. Prepare sites for *Roses* by trenching in plenty of good manure. Lift *Dahlias* and *Gladiolus* roots when out of frost.

Fruit Garden.

The principal work for the next week or two will be gathering the late Apples and Pears. Do not be tempted to gather the best late sorts too early, if they are required to keep in a fresh firm state till their allotted time. There are plenty of indications to guide us in gathering late fruit, but the best hint is given by the tree itself. When the fruit next readily from the tree it is time to gather them in. In this season of plenty the trees will probably be cleared at one operation, but in small gardens more might be made of the fruit—i.e., the season might be prolonged if the gathering of the best kinds of Pears was spread over two or three weeks. I have lengthened out the season of *Marie Louise* considerably by gathering the fruit first of all from the sunny side of the tree, leaving the other to hang ten days or a fortnight longer. Autumn Pears are very often gathered too early, and the result is a large loss of what is certainly a considerable waste. I have often heard the remark, "What a shame to let these beautiful Pears decay!" But who is to help it when the sale or consumption is not sufficient to clear them off whilst they are good? A Pear may be sound and good apparently one day and a mass of interior decay the next. The late-keeping Pears such as *Doyenne du Comice*, *Winter Nellie*, *Bergamotte d'Espere*, *Glou Morceau*, *Burré Rance*, and *Ne Plus Meurt* do not decay so rapidly when they are ripe, and therefore the season can be prolonged. Both *Strawberries* and *Raspberries* are, in many gardens, anticipating the next year's crop this season. Some buds of early *Strawberries* that were injured by the hot weather are now bearing very freely. This heavy tax upon vigour should be met by giving additional support as soon as the fruits are gathered in the shape of rich top-dressings of manure.

Vegetable Garden.

Good vegetables are more plentiful now than they have been all the season. Late *Cauliflowers* are very good, and though there has been a little frost, the *Spineheads* are still bearing freely, but late Peas have in most gardens been a failure. The summer was so exhausting; even the Peas sown late and kept moist by watering did not do well. But root crops have been better than the promise. Beet-root, Turnips, Onions, and Carrots where proper attention has been given have turned out much better than expected. Where it was impossible to water the crops the frequent use of the hoe has been very beneficial; by keeping an inch or so of loose soil on the top the moisture has been kept in the land and the effects of the hot sunbathing mitigated. If early Peas are sown now in pots or boxes, the green tops, when about 4 inches high, will come in useful for flavouring soups. Take up *Beetroots* before frost comes, and secure *Cauliflowers* turning in. In some way, simply breaking a leaf over the hearts or tying the leaves up in a cluster over their hearts will save them from several degrees of frost. Late *Broccoli* may be laid down with heads to the north. Lifting it is sometimes costly, but the high price of the heads lifted out of the ground, and the quality of soil if removed from the north side

* In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to two or three weeks later than is here indicated, with equally good results.

of the plants, the spade is then thrust in on the south side, and the plant is heeled over so as to be on its side, a spadeful of soil is placed on the stem to shelter, and this leaves a hole for the next plant to fall into. It is not a long or a difficult job, and if we get 20 days of frost during the winter it will save the Broccoli crop. E. HOSKAY.

Work in the Town Garden.

There has, fortunately, not been enough frost so far to cut off or injure the Dahlias, which consequently continue to make a nice display of colour. With plenty of these, Chrysanthemums of the hardier varieties, Michaelmas Daisies, Japanese Anemones, and Torch Lilies (Tritomas) in town garden need be other than gay during the autumn months, and, as I believe I have remarked before, curiously enough all these hardy autumn-flowering subjects thrive better in a smoky atmosphere than almost any others. Verandas of the shrubby section are equally suitable and successful, and are flowering freely, and even the pretty and fragrant white-flowered Tobacco (Nicotiana glauca) continues to push up its charming blossoms in warm and sheltered spots. Referring again to the subject of Dahlias, I have come to the conclusion that on the whole, and for general decorative purposes, supplying out flowers, &c., the Pompan class is decidedly the most useful and effective. The huge "show" kinds are out of it altogether, either for cutting or display, and beautiful as many of the "Cactus" flowers are individually (the newer ones in particular), in most cases they are not produced with sufficient freedom to compare with the pretty little Pompan. The colour of these last, too, are now very varied and rich, the blossoms are neat and nice for cutting, and the habit of the plants is dwarf and bushy in the extreme. By far the freest and best of the Cactus tribe for cutting—at least, where quality is an object—are the brilliant sweet-flowered Fire King and the deep crimson Cockney. Where a large conservatory has to be furnished a number of Dahlias grown in large pots are of the greatest value in the autumn after frost has set in, and form an excellent contrast to the Chrysanthemums. Hardy perennials of all kinds may be safely planted now—at least, in suburban districts or small towns, where the

Those who are bothered with wireworms should grow their Carnations in large pots. The plants always do well in pots if kindly treated, and with ordinary care the wireworms can be kept out. Transplanted Tripoli Onions in rows 12 inches apart, 6 inches from each other in the rows. The ground had been well prepared, and then made firm. Onions are sown to grow in thick-soaked in loose soil. Gathered Apples and Pears, also Cook's Golden Drop Plums. The latter will keep a long time late on a shelf in the fruit-room. Peas on walls have done well this season. Still gathering a few late kinds, including Sea Eagle and Seiway. Dig Potatoes. This work is pretty well finished now. In preserving these for winter use they always keep better covered with earth enough to keep out frost. Then in buildings the quality is so much better. No matter how securely Potatoes are covered when stored in buildings, they lose flavour as the season rolls round. Took up and stored Beetroot. I find these keep best when covered with dry soil. Do not use a knife in trimming these. A wounded surface will injure the colour—or rather the colour will hold out in the cooking. The leaves may easily be twisted off, and after the roots are dried in the sun, packed in dry earth or sand, and cover with straw and earth. If stored in a cellar they should be packed in sand. Gathered all the Tomatoes still on the plants outside and placed on a stage in the vinery. They will ripen out in due course. The fruits of one or two plants of more than average fertility have been saved for seed. It is difficult to keep stock quite true if more than one kind are grown in the same house. Cut off the tops from Asparagus beds. They will do no more good now. The plants intended for early forcing have had the tops removed some time ago to ensure early ripening.

FLOWER GARDEN DATURAS.

Among the numerous plants available for garden decoration, but which are mostly conspicuous by their absence, several species of annual Daturas occupy a prominent place. The genus includes five or six species, possessing some

finally planted out where they are to stand. They need ample space for their full development, and should be grown in light sandy soil in preference to such as is of a heavier nature. But few gardens exist where appropriate situations for one or more of the species may not be found, and in most there is abundance of room for all those here named. Most of the Daturas thrive well in the neighbourhood of the sea. G.

FERNS.

THE HAY-SCENTED FERN (LASTREA ÆMULA).

SOME readers signing themselves "Cockneys"—which is, I suppose, because they live in the County of Middlesex, for scarcely the place from whence this letter is dated is not within the sound of Bow Bells?—tell me they have been in Devonshire and collected some Ferns which they intend to ask me to name for them, which I shall do with a great deal of pleasure if I can; but they send this one, saying: "That it has a very powerful odour of new hay;" which is quite right, and this alone makes it a very desirable plant to cultivate in the home rockery or rookery. It may be easily grown in any such a place. Now I do not want to know what part of the County of Devon my Cockney friends found this plant, and I should advise them to keep quiet about it or perhaps it may become exterminated by the rapacity of Fern-hunters and dealers, such as have denuded our country places round about London of every bit of greenery in the shape of a Fern, and having marked a certain number of plants for your friends who are resident there to send you, this is as it should be, and the spot does not become stripped of the species. This is a very graceful Fern, and one that has a wide distribution over the British Islands, being found in England, Ireland, Scotland, and Wales, and whilst one may search for it in one place, and never find a trace of the plant, it may crop up in abundance when little thought of. The plant is of tufted growth, and it sends up fronds to the height of about 18 inches and 2 feet, and about 6 inches or 8 inches in height. These are deltoid in outline, three times divided, having a somewhat crisp appearance, and powerfully scented like new made hay, and by which it may be readily distinguished. The plant, although so widely distributed, has broken less into varieties than other and closely allied species; but, of course, there may be more known, but I never remember to have seen but the one called prolifera, and another named cristata; both these varieties, as well as the typical plant, make exceedingly beautiful plants in pots, and where my readers have no convenience for growing them in the open ground I would strongly urge upon them to try pot culture for this plant and its two varieties. They should be well drained, and the soil best suited for them is loam and peat made sandy, being unlike the majority of our native kinds of Buoker Ferns, which are deciduous. This is nearly an evergreen, and hence its utility as a pot species is all the more strikingly exemplified. J. J.



Flowering shoot of Datura meteloides.

soil is fairly light and the drainage good; but in very smoky places, as also where the soil is heavy or damp, it is safer to wait until the spring. Some of the beds that have been cleared of summer bedders, annuals, &c., may be filled with Chrysanthemums and dwarf evergreen shrubs, both grown in pots and plunged, and if desirable, bulbs may be planted between. Insert cuttings of Pentstemon at once; also of the shrubby Calceolarias, if early-flowering pot plants are wanted next season. By inserting the cuttings early, and giving them a slight warmth through the winter, they are much more forward. Seedling Tuberosa Begonias and Glaxinas are flowering freely in a warm-house now. B. C. R.

THE COMING WEEK'S WORK.

Extracts from a garden diary from October 7th to October 14th.

Filled several frames with Calceolaria cuttings, young shoots about 3 inches long being chosen. They were dibbled into a bed of loam 3 inches apart. Very little protection is sufficient to keep Calceolarias safe when planted in a bed in a frame. In pots or boxes more covering will be required. A little dry Fern or litter scattered over the frame when frost sets in will suffice. The soil in which the cuttings are planted should be kept in a moist condition, but not saturated. The disease from which these class of plants suffer in summer is often caused by extreme dryness in winter. Busy clearing flower-beds and filling up with bulbs, Viola, hardy annuals, shrubs, &c. Took up Dahlias and Gladioli. If either of these are exposed to frost the roots perish. I once lost a nice collection of Gladioli through leaving them too long in a potting-shed. A sudden frost of unusual severity reached the Gladiolus bulbs and destroyed the lot. I am not likely to forget this. Started a lot of French Beans in a warm-house for winter bearing. At this season 6-inch pots are used—five Beans in a pot. The pots are not more than three parts full when the Beans are covered. This leaves room for earthing up later on. The best variety for forcing, I think, is No. Plus Ultra. Finished planting out Carnations and Pinks. A few of each kind are potted up, and will be wintered under glass, and afterwards potted into large pots—two plants in a pot.

claim to notice; but those which more especially merit attention are—

D. CERATOGAULA, probably one of the best known. It grows from 2 feet to 3 feet high. Its sweet-scented, trumpet-like flowers are produced from the axils, the corolla being often 6 inches in length and 4 inches or 5 inches across the limb, which is white, tinged with violet-purple externally and at the angles. The flowers, both of this and the following species, expand towards the end of the afternoon and close the following morning.

D. METELOIDES, a native of Texas, of which a figure is here given, differs from the preceding in its broader foliage, as well as in its somewhat large flowers, in its calyx-tube not being split on one side, and in the capsule being epiny; the limb of the corolla is usually more completely suffused with pale-violet.

D. FASTUOSA, if less remarkable for the size of its flowers than the species already referred to, has, nevertheless, merits peculiar to itself. Even the single form of this plant, which in the type is creamy white on both exterior, yields a very effective variety with the corolla of a deep-violet externally, the interior being white, as in the type. The most striking forms of this species are those bearing double flowers, the primary corolla having a second, and sometimes a third, arising from its tube, all perfectly regular in form, and often parti-coloured, as in the single variety with violet flowers. The culture of these Daturas offers no especial difficulty. Fresh seeds are readily raised in an ordinary hot-bed, and the young plants should be planted out singly in pots while small, and

4622.—Mealy-bug.—Mealy-bug on any plants which cannot be at once burned is a terrible pest, and it is absolutely ruinous on Grape-Vines, spoiling the fruit and making it quite unfit for use. As soon as the Vines are pruned burn the prunings, and clear every plant out of the house, except the Vines. Then make a solution of Gishurst Compound by dissolving it in boiling-water at the rate of 6 oz. or 8 oz. to the gallon. When cool enough to bear the hand in brush it well into every part of the stems of the Vines, going over them twice so that none may be missed. Then wash every bit of paint with the same mixture, using a brush or flannel, and whitewash the walls with fresh lime, and if the borders are inside take off 3 inches off the top and fill up with good loam and manure. As soon as the buds begin to move in spring keep a sharp watch for the first bogs, and though there may not be many there will probably be some, which, if allowed to remain, will soon fill the house again.—E. H.

4623.—Spiraea japonica.—Better leave the Spiraea another year before forcing. You may pot up in October next year.—E. H.

TREES & SHRUBS.

THE BUSH HONEYSUCKLES.

THESE are very good shrubs, flowering in early summer, and known by botanists as *Dicranellæ* or *Weigelas*, which are often crowded into a shrubbery, where it is impossible for them to make the free, graceful growth, laden with flowers, characteristic of well-planted examples. They are also known by the popular name of Bush Honeysuckles, and the long list of varieties embraces flowers of many shades of colour. They are essentially shrubs for the amateur—the growth is quick, and healthy hedges may be looked for even under apparently depressing circumstances, as in ordinary soils and positions they make great headway and bloom profusely. In the month of June every shoot is covered, almost hiding the leafage, and a scattered succession is maintained throughout the summer. I have seen splendid bushes, the branches touching the ground and full of vigour, in soils and situations where one would think it was scarcely possible for such beautiful things to thrive. But the choke-middle shrubbery is not the place for the full beauty of this shrub to be revealed; it is better either as a separate bush, standing out boldly on the lawn and displaying its full gracefulness, or massed together in a bed, as I saw a few days ago in a Middlesex garden. The variety planted was *Abel Carrière*, the flowers crimson, deepening to a more intense colour in the buds, and every shoot was weighted down with the burden of blossom, the growth spreading about in its own characteristic and charming way. The types of the *Weigelas* are *W. floribunda*, *W. rosea*, and *W. grandiflora*; then we have such kinds as *W. hortensis*, and its pure white variety *nivea*, a very beautiful and free-flowering shrub. The species are natives of China and Japan, and have given rise, through crossing, to a numerous progeny. Those that have emanated from *W. grandiflora* are the more useful, by reason of the flowers being bolder, but from the other types have also come many valuable kinds. One of the best is *Abel Carrière*, to which reference has been made already; its flowers are of fine colour, and very showy when in contrast to the Grass; and worthy also of mention are: *Lavallei* (an excellent variety, the flowers deeper than in any other *Weigela*, and red-purple in colour), *Van Houttei* (red), *Hendersoni* (conspicuous for its compact habit and flowers of crimson tone, paler outside), and *John Standish* (which has large flowers, also of a reddish colour). The species *D. rosea*, introduced by Fortune from China, and certainly one of the prettiest things he sent to England, is a shrub of great elegance, and very charming when its rose-coloured flowers are in full beauty in the month of June. Its compact, yet by no means formal growth adapts it for filling a bed. Then we have such beautiful things as the later-blooming *W. amabilis* and varieties, of which the following are amongst the best. *Desboisii*, very handsome, the flowers deep rose in colour; *Grünwegeni*, one of the most attractive of all, the colour rose, with occasional streaks of red; *Gustave Mallet*, rich red, and *Mona Lemoine*, which displays varied shades of rose. Although *W. hortensis nivea* is a beautiful shrub, the variety named *candida* is finer, easier to grow, and more satisfactory. The habit of *candida* is strong, and will attain in the course of time ample dimensions, the flowers first appearing in June, and by reason of their purity and profusion create a pretty picture, especially if placed against dark leaved things to throw up the white. As in many of the varieties, the shrub continues to bloom more or less until the autumn. *Nivea*, on the other hand, is not so stiff as regards growth, but does not make such quick progress, the flowers white and produced freely during early summer. There is also a variety named *rubra*, which, as its name suggests, has flowers of a deep-red colour, but this is most pronounced in the buds, the red tone disappearing when they are fully expanded, disclosing almost a pure white centre. There are several variegated *Weigelas*, but I do not care for such things unless the colouring is distinct and decided, and the shrubs are planted with extreme caution. Too many variegated shrubs in a garden produce a sickly, undesirable effect, but I may mention the following as of recent introduction.

is one of the best, the leafage rich golden colour, and retains its character through the summer months. It is not every variegated shrub that shows this essential trait, frequently when the first beauty of the foliage is over displaying objectionable tones. A dwarf variety is called *nana variegata*, the leaves distinctly variegated with a silvery colouring, the flowers almost white, and this silver shading is not obliterated under a summer sun. Although the *Weigelas* require very little of what is commonly called



Flowers of a Bush Honeysuckle.

cultivation, there are a few points that must be attended to, if vigorous, healthy bushes are desired. When each bush is allowed to grow in its own way, unfettered by neighbouring things, it will rise many feet in height, ten or twelve, even more, and it is under these conditions that one sees their gracefulness and distinctive charm. In ordinary soils it is well also to give an annual top-dressing to maintain their vigour, and quite as important is the removal of weakly growths. I was looking the other day at some *Weigela* bushes split through a crowd of shoots preventing a sturdy development of the branches, and the flowers were neither so large nor so profuse as would otherwise have been the case. It is therefore essential to prune vigorously to retain the stronger shoots. When a good selection of *Weigelas* is made, and the shrubbery carefully grown, there are few things in the garden of greater beauty in the early summer months. V. C.

4625.—**Shrubs in flower-bed**—If you had given the dimensions of the bed it would have been more easy to advise you. For filling fair sized beds the hardy *Azaleas*, *Deutzia gracilis*, *Hydrangea paniculata grandiflora*, *Kalmias*, *Permettya*, *Philadelphus* (or *Mock Orange*), *Veronica Traversii*, *Viburnum plicatum*, or the Chinese *Guelder Rose*, and *Weigelas*, may be mentioned. The two best subjects are the *Viburnum* and hardy *Azaleas*; and if you care for the *Mock Orange* select the dwarf kinds, such as *Philadelphus microphyllus*, which is a quite dwarf shrub, and laden with pure white flowers in summer. You must not have too tall things for the bed. The *Hydrangea* is splendid for beds, and produces very large heads of flowers. One of the most pleasing beds I have seen this year was composed simply of this, with a deep-purple *Tufted Pansy* as a groundwork. Even in small beds delightful effects may be obtained. The *Veronica* is rather better when isolated than grouped in a bed. The *Viburnum* mentioned is quite distinct from the common *Guelder Rose*. It is dwarf, and the trailing shoots are wreathed with creamy-

white flowers, which are in bold contrast to the deep-green wrinkled foliage. All these things may be planted in good garden soil at this season, and are perfectly hardy, although in very hard winters the *Veronica* gets out about with frost. As regards perennial plants there is a wide selection. You will do well to get the *Tufted Pansies*, such as have been mentioned recently in *GARDENING*. They are remarkably free, beginning to bloom in early summer, and maintaining a display until quite the autumn. There are many beautiful kinds, the colours varying greatly, from white to almost black, so intense is the shade. These will do for the surface of the bed. In one bed you can have a white variety, and in the purple, light-blue, or whatever shade you care about. Or you may have an edging of one variety and fill the remainder of the bed with a kind of another shade—of course, in suitable contrast. *Phloxes*, *Lobelia fulgens* is variety, *Carnations*, *Pinks*, the beautiful early autumn-flowering *Anemone japonica*, its flowers pure-white, in the variety *Honorine Jobert*, but rose in the type; *Erigeron speciosum*, which blooms more or less the whole summer; *Aster acris* or *A. Amellus* for the autumn, two dwarf kinds, very beautiful in beds, and a mass of bloom; *Lupinus polyphyllus albus*; spring-flowering bulbs, such as *Daffodils*; and a host of other things might be raised, did space permit. If you have shrubs, such as *Kalmias* and hardy *Azaleas*, plant *Lilies* between; *L. tigrinum splendens*, for late-blooming; *L. auratum*, for late July and August; *L. candidum* (the *White Madonna Lily*) for June; and *L. speciosum* or *L. lancifolium* for September. Of course this entails more expense than plants with hardy things alone. If you plant *Azaleas* you must make a peat bed, such as was described in *GARDENING*, p. 427; and the *Kalmias* also require a peaty soil. I should think, judging from your description, that *Gladioli* would succeed well. Try *G. bronchleyensis*.—C. T.

4601.—**Paring and burning turf**—If the ground is to be cultivated subsequently, I strongly advise you not to burn the turf, but simply dig it in just deep enough to kill the Grass. To burn turf, except with the sole object of destroying it, is mere waste of valuable material, as when decayed it forms the best medium possible for the healthy growth of plants of all descriptions. Burn all rubbish, &c., on the ground by all means, but not the turf; it is for potting and similar purposes. I have sometimes just charrd it in order to kill the Grass and save time. Turf is easily and quickly parod by means of a proper turfing-iron; but to prepare Grass land for cultivation, the best way is undoubtedly to take off the top spit from a space about 3 feet wide right across the ground, and wheel it to the farther end; then just turn over the second "spit," adding manure, &c., as required. Then dig up and add throw on to the first space, or "trough," the top spit from the second, placing it Grass side down, and so on throughout. If this is done at any time during the autumn the ground will be in first-rate condition for cultivation by the following spring.—B. C. R.

4636.—**Treatment of Begonias**—Some *Begonias* are decidedly prone to drop their buds in a very annoying and unsatisfactory manner, but such should be the exception rather than the rule. From what you say I opine that the soil you employed was too rich, and also that too much water was given to the plants. They ought also to have been shaded from the sun, which has this year been altogether too much for plants of this kind under glass. Try again next season, using sandy loam and leaf-mould only, shading from hot sun, and watering only as required.—B. C. R.

4616.—**Packing Lilies**—Lily bulbs will keep in good condition a long time packed in Cocoa-nut-fibre in a cool place. I planted out some good, sound bulbs last April, which had been packed in Cocoa-nut-fibre all winter; but the *Old White Lily* (*L. candidum*) is an early grower, and should, if possible, be planted in pots.—E. H.

—As these plants begin to make fresh roots in the autumn it is injurious to keep them out of the ground until the spring. As many as possible should therefore be potted as soon as the stems die down, and, if necessary, planted out from these in the spring.—B. C. R.

4505.—**Making leaf-manture**—Place the leaves in a heap in any out-of-the-way and rather damp spot, and let them remain undisturbed until they become sufficiently decayed. Any attempt to hasten the process will be unavailing. Do not buy them.—B. C. R.

FRUIT.

PLUM ANGELINA BURDETT.

In reply to queries about this Plum, the tree is very hardy, a good bearer on bush, pyramid, or standard, and is worthy of a good position on a wall or in the orchard-house, and, having smooth shoots and leaves, it is not subject to green-fly. Add to these constitutional qualities the following points—for after all the proof of the Plum lies in the eating—and I think those who have not given it a trial will at once add one or more trees to their selections: Fruit above medium size, roundish, oval, and marked with a deep suture, especially near the stalk. Skin thick, dark reddish-purple, closely covered with small brown dots, which show through the deep-purple bloom. Stalk short, firmly set, and holding the fruit long after it is ripe, sometimes until it shrivels. Flesh yellowish, rich, juicy, parting freely from the stone; fit for use early in September, but grown in the old orchard-house or upon wall-trees the fruit is greatly improved by hanging until, like Golden Drop, it shows signs of shrinking. Viewed from a commercial point, the Plum, next to the Apple, is generally accepted as our most profitable indigenous fruit; but the varieties being so numerous, soil, situation, and use should be well considered before market culture is entered into. For private use the motto should be few varieties, these the very best, and plenty of duplicates. Taken in alphabetical order, and following Angelina Burdett, a most delicious variety for a pasteless dish when cooked, as well as the dessert, we have the little-known black Plum named Belvoir, admirably adapted for a wall, as it hangs in good condition until the middle of November. Passing Gorse's Nota Beuo, a Canadian Plum, Damas de Mangeron, an Italian Damask, good for preserving, we come upon Kirke's, if not the best, certainly the best-known and most popular purple dessert Plum now met with in every good garden, and almost invariably used by exhibitors, making a most telling dish when grown against a warm wall or in the orchard-house. A companion to this, but much earlier, is the Montfort, a most delicious variety of Royal Hative, ripe about the middle of August, and probably the best very early orchard-house or wall Plum in cultivation. The well-known froststone Prince of Wales, we learn, will soon be superseded by the Sultan, a clingstone, having a formidable rival in Belgian Purple, an immense cropper, and good for dessert, but as a culinary Plum one of the very best for cooking and preserving. Purple Gage or Reine Claude's Violotte, a familiar Plum, is considered one of the best, especially when it begins to shrivel, but although a freestone, it does not, in my opinion, come up to Late Rivers, a Sawbridgeworth seedling, ripe in October, and keeping in good condition until the middle of November. The latter requires a good west wall, and deserves extensive cultivation as a companion to Coe's Golden Drop for coming in late in the orchard-house. Although all the varieties of Plums fruit profusely when grown in pots, none but the very best should be selected for orchard-house culture. Therefore, considering that there are six or seven sections, including the Gager, a heat in themselves, to choose from, the contribution from the Nectarine Plums may include Angelina Burdett, Kirke's, De Montfort, Purple Gage, Woolstan Black, and Late Rivers. Pines of Wales, Belgian Purple, and Sultan are admirably adapted for growing as standards.

fruit often weighing 20 oz., the quality is fairly good, and is ripe toward the end of September or early in October. Maris Louise is perhaps regarded as the best Pear for general purposes in cultivation, as it possesses all the qualities necessary; in use during October and the early part of November. Winter Nellis and Olou Moreceau are capital winter Pears, coming in in December. A four-year-old horizontal-trained tree would be the best for the purpose, as a tree of that age would give some fruit the second year of planting. Trench the soil fully 18 inches deep where the tree is to be planted, but do not cover the roots more than 3 inches deep with soil. Over this lay a 2-inch thickness of half-rotted horse-manure to preserve the roots from frost and to maintain them in a cool, moist state during the summer. Directly the leaves fall is the best time to plant fruit-trees of any kind. Do not fasten the trees to the wall until the spring; the soil will have settled down to its natural level by that time. Choose a dry day for planting, so that the soil mixes well with the roots. It is not wise to add much manure to the soil when planting; if the soil is poor give a little.—S. P.

4631.—**Treatment of fruit-trees.**—The proper thing to do would be to root-prune all but the standard tree, and at the same time to cut back the young shoots two thirds of their length, but it will never do to prune the branches so hard and not the roots. If you can undertake to root-prune skilfully do so by all means, but it must not be done in a haphazard fashion. If you can devote time and skill to the work it will pay for doing so; if not you had better prune the bushes very moderately, and root-cut altogether any of them that are not satisfactory, so as to give you more room.—J. C. C.

— If the trees have been growing in their present position some years and bear annually good crops of fruit, they can be kept to their present size by cutting away all the new shoots every year. A few of the outer branches may also be shortened where they are too long, cutting off at least 1 foot all round. It may be wise also to remove a few of the branches from the centre of each tree, if they are at all crowded, selecting the weakest for removal. All the sorts of fruit named will bear pruning as

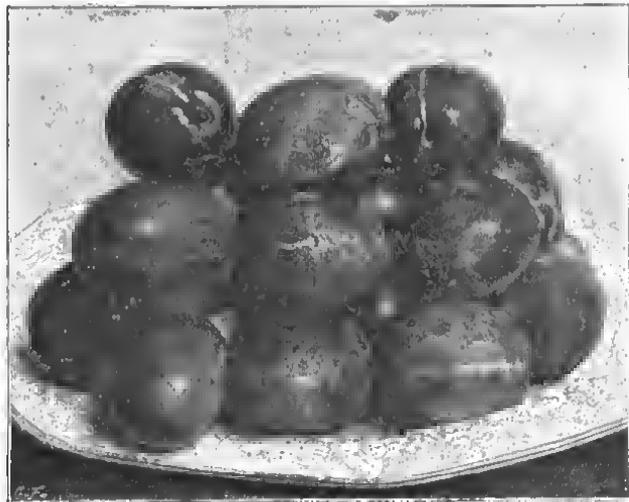
any fruit-tree in winter when the leaves are off and the buds dormant, and at that strength every insect touched with it will die.—E. H.

4640.—**Grape-Vines in a greenhouse.**—Cracked berries have been pretty much in evidence this season, especially in houses which are devoted to flowers as well as Grapes. The berries crack from more than one cause. Dryness at the root, followed by a sudden watering is, however, the most frequent; but in your case I should say it was caused by a sudden change in the internal temperature, which caused a contraction of the skin. The want of colour in the berries is through leaving so many bunches to ripen. Reduce the number next year one-third.—J. C. C.

4912.—**Clover-seed and Straw-berries.**—White Clover in a Strawberry-bed is a strong, deep-rooting weed, and nothing else, and under no circumstances should it be sown if good fruit is required. It is a very easy matter to mulch Strawberry-beds with long stable litter in April, and by the time the fruit begins to colour there will be a clean bed for the fruit to rest upon. Doublecropping of the kind named above will not answer.—E. H.

— The idea of growing Clover amongst the Strawberries is too absurd to entertain for one moment; not only would it interfere with the Strawberry roots, but it would rob them of nutriment as well as moisture. Plant Strawberry runners at once on well prepared land. That which has borne a crop of Potatoes will answer well. Have the rows 2 feet apart and the plants eighteen inches distance from each other. Plant Vicomtesse d'Aricart de Thury and Sir Joseph Paxton as maincrop varieties, with a few of Waterloo for a late supply. Keep the soil clear of weeds and nip the runners off the plants as fast as they grow. When the blooms expand spread a thin layer of clean straw over the ground underneath the plants; this will keep the fruit clean and arrest to some extent the evaporation of moisture from the soil also.—S. P.

4623.—**Vines in a cold-house.**—Open all the ventilators, doors, &c., so wide and fully as possible, and keep the soil barely moist—neither really dry or at all wet; any young growths or leaves should be strictly removed. Continue this treatment throughout the winter,



A dish of Angelina Burdett Plums.

4603.—**Pear for a wall.**—Emile d'Hayes or Doyenné du Caenot. The former is the earlier, ripening in October, a very heavy cropper, and easily grown, while the latter ripens a month later, and will keep till Christmas, but requires rather more care. The flavour of both is unsurpassed.—B. C. R.

— Maris Louise is a general favourite, Doyenné du Comtesse is late but equally good, and there are few better Pears at Christmas than Olou Moreceau, and this will pay on a wall in a good aspect.—E. H.

— It all depends what time of the year the Pear is required fit for use in training a sort. Williams' Bon Chrétien ripens in August, is a good cropper, and is generally regarded as one of the best. Louise Bonne of Jersey is ready for use during September, and is all that could be desired both for crop and flavour. Pittaston Duchesse is the largest kind in existence, and is

suggested. Directly the leaves fall pruning should be done, or indeed before they change colour, as there is no need to wait till then.—S. P.

4605.—**Early Vines.**—Forced Vines should be pruned as soon as the leaves are falling; there is no necessity to wait till all are down. Very few Grape-growers plant Vines nowadays unless insects are present, and even then I have as much faith in a strong solution of Gishurst Compound used warm, and brushed well into all the crevices as anything. A solution of Gishurst Compound (6 oz. to the gallon) may be used on

only closing the house in severe frost or storm. Early in February the Vines should be pruned, but if the weather is mild do not bury them into growth (by keeping the house close) until all danger of severe night frosts is past. Growth should recommence in March, and a thick bed to draw down over the roof on frosty nights would be a great help. Three of the best Grapes for a cool-house are Foster's Seedling, the Buckland Sweetwater, and the old Black Hamburg. Plant in March.—B. C. R.

— Vines without fire-heat have done well in sunny situations this season, and as the wood is

well ripened, the best treatment is to leave the ventilators open night and day and prune when the leaves fall. I believe in early pruning. Whether the Vines are forced or grown quite cold the house should be closed when severe frost comes, and at other times during winter ventilated freely. If the inside borders are dry give a good soak of liquid-manure; it will moisten and enrich the soil. The best Grapes for cold-house are Black Hamburgh and Black Alicante and White or Royal Muscadine. Foster's Seedling does well in a cold-house, and I have also ripened Golden Queen in a cool-house, the bunches being large and full.—E. H.

4632.—**Winter Pears.**—A cool, moderately dry room or cellar is the best place to keep fruit of any kind in; no more heat is required than will keep out frost. The fruit should be spread out in a single layer, either on the floor or on shelves, using neither straw nor sedge else to lay them on. If, however, a boarded floor or shelves are not available, clean straw is the best material to lay the fruit upon. If the room can be darkened so much the better. After the first two or three weeks but little air will be required. If it is not practicable to darken the room, cover the fruit with two or three sheets of newspaper; this will answer the purpose very well.—S. P.

4607.—**Apple-trees in bloom.**—This is a common occurrence this year. The buds which are flowering now will not flower again next year; but all the trees I have examined have still plenty of unstarted buds, so the chances are it will not seriously interfere with next year's crop. If one-tenth part of the blossoms which a fertile Apple-tree produces are there will be Apples to thin off. At the same time, the blossoms which are now produced had better be rubbed off.—E. H.

This is a common occurrence this season, owing to the exceedingly hot and dry weather early in the summer checking the growth before it became properly matured. The showers since causing an abnormal growth to be made resulting in premature flowering. In a general way the blossom now expanded is upon the points of the shoots. When these are of any length in pruning the tips are generally cut off, so that flowering now will not injure the trees. Nipping off the blossom at once is all that can be done just now.—S. P.

This is a result of the extraordinary season. It will not, of course, do the trees any good, and the best plan, if the flowers are numerous, will be to cut them all off. Even if they set, however, the fruit would come to nothing now.—B. C. R.

This is doubtless due to the remarkable character of the past season, and unless the trees are in full bloom, which we presume is scarcely the case, will do no harm. The flowers will not get fertilized, and, therefore, not bear fruit, of course. It is best to leave the trees alone.—C. T.

HOUSE & WINDOW GARDENING.

CAMPANULAS FOR BASKETS.

CAMPANULAS FRAGILIS or Barbellieri, C. garganica, and C. isophylla alba (see illustration) are the best varieties for baskets, the two first named producing long sprays covered with large blooms of the softest hue, and the latter lovely white flowers in rich clusters and masses, if well grown. Plants which have now ceased blooming can be propagated either by cuttings or by division of the roots. Each bit, with a root attached, can be placed in a 3-inch or 4-inch pot, with a compost of leaf-mould, loam, and sand, for the winter, taking care to supply good drainage, covered with Moss dipped in soot, to keep insects out. An occasional watering will be all that is needed for these plants until March, and while on this subject it may be desirable to explain exactly what is meant by an "occasional watering." Many amateurs injure their plants in winter by a system of giving water in dribbles—i. e., they supply a few teaspoonfuls to the top of the pot whenever the soil appears to be dry. This results in the gradual dwindling and death of the principal roots, which never get any water at all, being at the bottom of the pot and the plant looks

all vigour, if it does not die. The proper way to give water is to supply enough to run through the pot at one time, but if saucers are used these should be emptied about an hour after the water is given, which should be in the morning during the winter-time. Having been thoroughly soaked they will not need more for some days, and the test of dry soil on the surface may then be safely applied. To return to the culture of Campanulas. They will need a shift into their flowering-pots early in March, and the soil then used may contain a little old hot-bed stuff, as well as leaf-mould, and a pinch



Campanula isophylla alba.

or two of soot, with enough sand to lighten the compost. Placed in a sunny window, and more water supplied as needed, the Campanulas will soon throw down their flowering sprays, making charming objects either in a basket, a window-box, or balcony. Blue and white flowers are so beautiful that they should be grown by everyone, for they give a delightful variety to the mass of reds and pinks which abound in summer.

4580.—**A Fern-case.**—To grow Maiden-hair, Pterises, &c. in a large Fern-case air is indispensable. It is only a few of the small Filmy Ferns and Lycopodiums that seem to be able to do without much air. Stagnant water, too, will not suit them, and there should certainly be holes for drainage, or a false bottom of perforated zinc, through which the water may pass into a tray which can be emptied. The best way to give air would be to have one of the upper panes made movable, so that fresh air can be given daily without draughts, and the damp which accumulates on the glass roof should pass away without dropping again on the Ferns, for this causes them to mildew and soon decay. The soil too is not suitable for the Ferns named. Plenty of good yellow loam should be mixed with the peat, and also silver sand and charcoal. Bits of crocks, chopped Moss, and old mortar-rubbish will also help to keep the compost light and sweet. When so much shut out from the air this is not always an easy matter. Thorough drainage should be given, and this covered with Moss, sprinkled with soot, to check the inroads of insects, and it is well to examine the soil carefully for these (after allowing it to become very dry) before it is used. A suitable Fern for a large Fern-case is Lygodium scandens (the Climbing Fern). It has very beautiful light fronds, and is most interesting in its growth. Pteris tricolor is also a very beautiful Fern with distinct mid-ribs of bright-pink. Adiantum fragrantissima has exquisite lacey fronds, with a sweet scent, and should certainly be included in the collection, with Pteris cretica and P. serrulata cristata, also very distinct, and Lomaria gigtha, a very handsome plant, in shape like a small Tree-Fern. One or two richly tinted fibrous Begonias will add much to the beauty of the Fern-case, notably B. "Louise Clason," a very dark-crimson leaf, and B. Arthur Malet, a handsome, brightly coloured variety of Begonia

Rex. Tradescantia zebrina and T. multicolor will also grow well in a fernery, when thoroughly supplied with drainage and air, as well as with soft-water, which should be given lukewarm in winter.—I. L. R.

4573.—**Azalea in a window.**—By the time these lines are in print the Azaleas should certainly be taken inside the window—i. e., before sharp frost sets in. These plants are by no means easy to manage well in a house, for they need damp, cool air, and will not stand dry fire-heat, which induces their special pest, thrip, to flourish and destroy the foliage. The best place for them in a house during winter is the window of a bathroom, where the hot-water pipes keep the atmosphere from getting too low, and a little steam from hot water can be let on two or three times a day to moisten the air. Failing this, they may be wintered in a bedroom without a fire, standing on a large tray or a flat bath, which should be kept with an inch or two of water in it, the plants standing on inverted saucers, not in the water, the use of which is to moisten the air for them. If they have any thrip on them (which may be ascertained by examining one of the older leaves) they should be dipped in a bucket of soft-soap and Quassia-water (made with 2 gallons of boiling water to a tumblerful of Quassia-chips and 2 oz. of soft-soap) several days following, after which a good washing with pure water once a week should keep them clean, and they may be put outside in mild, gentle rain with advantage to cleanse their foliage. Azaleas must never be allowed to want for water, but neither must they be soaked when they do not need it, a plentiful supply of lukewarm water being given to them whenever the surface soil is fairly dry. After flowering, every blossom should be picked off as it fades, and the plants repotted, giving them all the moist warmth available while they are making quick growth at this time, with abundance of water. After the end of June the plants are better out of doors; but thrip must be guarded against, and destroyed by dipping or sponging all the year round.—I. L. R.

Azaleas are not very good window plants, the reason being that they do not get enough light and air; the only chance of a measure of success is to keep the plant outside as much as possible. Azaleas are not injured at all by a few degrees of frost—indeed, they are benefited thereby—as red-spider and thrips cannot live in frosty weather. Of course it would not do to allow the roots to be frozen; and in winter, when the frost is severe, the plant should be taken indoors. My plants are all outside now, and they will not be taken in until October.—J. D. E.

INDOOR PLANTS.

4594 and 4602.—**Aspidetras.**—The most suitable compost for these plants is a mixture of sandy loam and leaf-mould, three or four parts of the former to one of the latter. Drain well, and pot moderately firm. Water should be given only when the soil becomes moderately dry, and a little very weak manure or soot-water occasionally only during the season of active growth. If too much water or nourishment in any form is given the foliage of the variegated forms is apt to revert to the green-leaved type.—B. C. R.

"Enquirer" will find it impossible to prevent the variegated form of the useful Palm from reverting to its normal type. No treatment, except one calculated to keep the plant in a low state, will secure this result. Variegated sports all revert to the type more or less, more particularly when the subject is doing well.—P. U.

4609.—**Treatment of an Orange-trnee.**—All that can be done is to keep the plant as cool as possible during the winter and spring, when it will probably flower in a greenhouse temperature about the required time. Everything flowered much earlier than usual this year, owing to the forcing sunshine. Again, a plant that has been forced in any way one season always flowers earlier naturally the next.—B. C. R.

4617.—**Treatment of Camellias.**—Probably the plants have been insufficiently watered during this exceptionally dry summer, and drought is of all things injurious to the Camellia. Or perhaps they have been too freely exposed to the scorching sun. At any rate, the young leaves fading denotes that there is something wrong at the root. It would be best to turn

the plants out of the pots and examine the roots; if necessary repot them in smaller sizes, cutting away all dead or diseased roots, and using some fresh and very sandy peat round them, with good drainage. If possible give them a very gentle bottom-heat afterwards, but keep the tops cool and airy, and give water with the greatest care.—B. C. R.

—The small leaves turning colour seems to show that the growth of this last season was not equal to that of preceding years, and the probabilities are there is something wrong at the roots. Perhaps drainage is wrong, and the soil sour and pasty. Better examine and put right as soon before winter sets in, or matters will get worse.—E. H.

4610.—Plants for a conservatory.—You could not have sent your inquiry at a more unsuitable time of year than the present, because there is very little that can be done for the next four months in the direction you require. It is much too late to sow seeds of *Primula* and *Cineraria* to produce plants for winter flowering; you may, however, sow *Cycolamen persicum* and grow the plants on for next year, and if fire-heat is only used to keep out frost you may sow at once such subjects as *Mignonette*, *Primula obconica* and *floribunda*. After Christmas you may sow seeds of the Green-leaved Zonal and Show *Pelargonium*, *Coleus*, *Balsam*, *Torenia*, *Abutilon*, *Alonsoa*, *Rhodantho Manglei*, Double and Single *Petunias*, *Browallia elata*, *Lantana*, *Heliotropis*, *Streptocarpus* in variety, and *Trachelium coerulenum*. Most of these subjects will strike from cuttings during the summer when you have obtained a stock of plants.—J. C. C.

4604.—Margarites for winter.—The plants must be kept near the glass in a light, sunny window, but remove them further into the room on frosty nights. Water them only so as to keep the soil just moist, and the foliage fresh, and give a little very weak soot-water occasionally. Unless good, strong plants, and the pots full of roots, they will not bloom much during the dark days in a room.—B. C. R.

4598.—Greenhouse during frost.—Strictly speaking, you should not endeavour to grow any subjects under glass without possessing enough fire-heat to protect them according to their requirements, independent of outside coverings. Darkness is not beneficial to the majority of plants. In the case of sharp frosts the best and easiest covering is probably a few good St. Petersburg mats, and these may sometimes be used to advantage during extra sharp nights or a spell of severe weather.—P. U.

—There is nothing to surpass, if to equal, for this purpose the material made specially for it, and called "Frigid-dome." If expense is an object, old sacks of stout material sewn together will be found very useful.—B. C. R.

4637.—Heating a small greenhouse.—You are only experiencing the same trouble as many other young people who have to deal with these small boilers, and I really do not know how to advise you. Certainly the placing of a steam-pipe near the cistern and carrying it outside will not help you much, as it will tempt you to ignore the possibility of all the water being discharged from the pipes and boiler out of this pipe, and then a burst boiler will be the result. You had better clean out the flue-pipe once a week, and in windy weather keep the wind from reaching the fire as much as you can. You must follow the directions with regard to keeping the supply cistern filled above the entrance to the top pipe, or the water cannot circulate. You had better use a coke-crusher for breaking the coals, as you cannot improve on the fuel you use.—J. C. C.

4629.—Building a glass house.—Yes; it will certainly be advisable to have some ventilators fixed in the ridge, two or three at least on each side, top air being not only necessary for Tomatoes and *Chrysanthemums* (and generally far preferable to a through draught), but absolutely necessary when forcing *Rhubarb*. A good method of arranging the roof ventilators in houses that, like this, are constructed of lights or sashes, is to support the edge of the latter on stout rafters out about 8 inches longer than them, so as to leave a space of that width between the top of each sash and the ridge-plank. These apertures will act as ventilators, and are to be closed, when necessary, by lengths of 9-inch board (the same length as the width of the sashes), hinged to the ridge-plank. Of course, glazed ventilators would be better; but the above arrangement answers all purposes, and is very inexpensive.—B. C. R.

—I have read down your enquiry several times, still I am perplexed to know what sort of

sashes you have, seeing that you have only six in number, and the proposed length of house 36 feet. Then you speak of ventilators under the eaves, and the height of span 6½ feet and 10 feet wide. If these figures are correct, do you not think the roof will be very flat? I point this out to you because your information is not very clear. For Tomatoes you will require ventilators in the roof, and the simplest way of providing them in your case is to adopt the Paxtonian system of ventilating, which has narrow lights about 10 inches wide, running up from eaves to the apex between each two sashes. For your purpose I should say 1½-inch hoards, 8 inches wide, would do as well as glass-lights for opening.—J. C. C.

MONSTERA DELICIOSA.

A NOBLE plant than *Monstera deliciosa*, or *Torenia fragrans*, as some call it, we could not name, either for the stove, greenhouse, or the sub-tropical garden in summer. Apart from its stately aspect, it bears large succulent fruits possessing a luscious Pine-apple flavour. In some gardens it is, like the Banana, grown specially for its fruits, and is considered a choice addition to the desert. Though the gigantic stature of this noble Aroid, such as it assumes in its native habitat (the forests of Mexico), can only be seen in spacious hot-houses, as for example in those at Kew, which are devoted exclusively to tropical Aroids, still it may be grown to perfection in small houses provided there are sufficient heat and moisture. It is never, however, seen to advantage unless it is so placed that the roots have free access to water in a similar manner to that suggested by the annexed engraving, which represents a fully developed specimen bearing fruits. It delights

fruits it certainly presents a highly ornamental appearance. A high temperature and dense shade are, however, by no means necessary for its welfare; it enjoys a light, somewhat airy position, and when so placed it assumes a more shrubby, compact, short-joined habit. It should always find a place in sub-tropical arrangements, as it does well in sheltered nooks or similar situations throughout the summer. Although the *Monsters* will thrive in a low temperature, it will not develop its true character as a fruit-bearing plant unless a brisk growing heat be maintained during the spring and early summer months. The elements of success in order to obtain fruit are heat, light, and moisture, and, providing these conditions be one and all supplied, success will be ensured. Any form of training may be adopted which will bring the plant well up towards the glass. It may be made to cover a portion of the whole of the back wall trellis, or, what is preferable, it may be trained round forked trep-stumps, a system which suits it admirably. It may be grown in a tub, but preference should be given to planting it out in a good body of fibrous peat and loam in equal proportions, and which should rest upon a good drainage of brick rubble. Thus placed, unlimited supplies of water may be given in hot weather, and the fruit will be fine in quality and abundant. The engraving represents the *Monstera* growing against a house at Funchal, Madeira. G.

CHRYSANTHEMUMS.

SEASONABLE NOTES.

No time should be lost in placing under cover any plants that exhibit the slightest sign of colour in their florets, or any plants that are late in the formation of their flower buds. In the former case it is useless to allow them to remain out-of-doors longer in the hope of retarding the development of the flower-buds. What with rain and heavy night dews the flower-buds are rendered soft, and when the florets unfold they are almost certain to damp, which is disappointing after so many months' toil and attention. It is better to house the plants at once and reap the benefit of the flowers, even if they are a bit too early for exhibition purposes. In the case of the late budded plants they are so much more likely to suffer from an early frost than those plants which have their buds more forward, but not yet bursting of their florets. The growth, being immature at the point, is more susceptible to frost, therefore it is wise to place these under cover, even if it were only for the sake of preserving them from harm in that direction. The buds will, however, swell so much faster if placed in the greenhouse than though they remained out-of-doors. Any foliage infected with mildew should be cleansed before the plants are taken inside by the usual remedy of lime and sulphur hoiled together, and syringed over the affected parts. A full description of the method of mixing has several times been given in GARDENING. After the plants are hoiled they should receive abundance of air, both night and day, and be arranged as near to the glass as possible, or the growth will be weakened at the points, which is not consistent with their requirements. I prefer to see plants with stout peduncles, these being sure indications of good blooms to follow. In plants that are late in their bud formation



OUR READERS' ILLUSTRATIONS: *Monstera deliciosa* at Funchal, Madeira. From a photograph sent by Mrs. A. H. Bridson, Rockville, Dartmouth.

In places where it can cling to a moist wall, or twine its plant branches round the stem of a tree for support, and where also its thong-like roots can dip and ramify in a water tank, which is usually placed in all houses devoted to tropical plants.

When grown in these hot, moist stoves it develops rapidly, and its singular perforated foliage, together with the quaint forms which it often assumes, strikes the uninitiated with wonder, and when studded with its clusters of

fruits it certainly presents a highly ornamental appearance. A high temperature and dense shade are, however, by no means necessary for its welfare; it enjoys a light, somewhat airy position, and when so placed it assumes a more shrubby, compact, short-joined habit. It should always find a place in sub-tropical arrangements, as it does well in sheltered nooks or similar situations throughout the summer. Although the *Monsters* will thrive in a low temperature, it will not develop its true character as a fruit-bearing plant unless a brisk growing heat be maintained during the spring and early summer months. The elements of success in order to obtain fruit are heat, light, and moisture, and, providing these conditions be one and all supplied, success will be ensured. Any form of training may be adopted which will bring the plant well up towards the glass. It may be made to cover a portion of the whole of the back wall trellis, or, what is preferable, it may be trained round forked trep-stumps, a system which suits it admirably. It may be grown in a tub, but preference should be given to planting it out in a good body of fibrous peat and loam in equal proportions, and which should rest upon a good drainage of brick rubble. Thus placed, unlimited supplies of water may be given in hot weather, and the fruit will be fine in quality and abundant. The engraving represents the *Monstera* growing against a house at Funchal, Madeira. G.

abound be pushed on by the aid of sulphate of ammonia. This is a powerful stimulant, but on excellent one as well if used carefully. Half an ounce in one gallon of weak liquid-manure will assist the plants perceptibly if given twice every week. If any roots have become bare on the surface of the pots owing to repeated waterings, it is advisable to apply a thin top-dressing of turfy loam and bone-meal, two parts of the former to one of the latter. Not only will this assist the development of the blooms, but it will render aid to the sucker-like growths from the base, and which form the cuttings for the next year's supply of plants. Now is the time to feed the plants regularly, and with a change of food occasionally. While the florets are expending, the plants need all the aid possible; the greatest strain is at that time felt, and if artificial assistance is not available the results cannot be quite so satisfactory as otherwise.

BUSH PLANTS are looking remarkably well this season, the earliest batch are swelling their flower-buds freely. The later lot, such as Leon Franche and M. E. A. Carricre, have not set their buds as yet. I do not pursue the disbanding practice with bush plants, but prefer to allow them to develop all available blossoms. They are so useful for cutting when in a mass on long shoots for filling vases that to limit the bush-plants to the development of but a few blooms each seems to be a waste of time and means. Those plants that have set all of their buds—for instance, Lady Selborne and the Rundle family—should be finally staked. One stout stake to each main branch is quite sufficient, loosely tying the side growths to this one main branch. Not only do so many stakes in each pot have an unsightly look, but they injure the roots when small pots are employed. The pots will now be crammed full of roots and should never be allowed to become dry, or the foliage will suffer in consequence, which spoils the appearance of the plants as decorative objects. Plants growing against walls are looking remarkably well where the roots have been well supplied with water, the hot sun just having suited them. The final nailing of the main stems to the wall ought to be done without delay. Where side growths are numerous they should be secured to the main branches by raffia, which gives a less rigid appearance than fastening all the growths to the wall itself.

E. M.

4608.—Chrysanthemums from seed.

In the first place, the plants must have been at any rate partially starved, and exposed as much as possible, so as to obtain the open or yellow-eyed flowers, from which seed is most easily and successfully obtained. High feeding develops the petals (which are sexless and barren) at the expense of the sexual or seed-producing organs. The pollen (a yellow dust) must be taken from a flower in which the stamens have just begun to liberate it, and applied (either by means of a small soft camel-hair brush, or by gathering the one flower and applying it directly to the other) to another from which the pollen has all, or nearly all, been shed, this being done in a warm dry atmosphere, with, if possible, the sun shining at the time. Afterwards keep the head warm, dry, and free from insects; the best place is near a hot-water pipe, where the constant current of warm air will effectually prevent damping. Gather the seed when ripe, and store in a dry place till the spring. Raising the plants is a comparatively simple matter. Sow the seed in the end of February, or beginning of March, in a gentle heat, pricking them off when large enough, then potting them singly, and finally shifting into 8-inch or 9-inch pots in June, and standing them out-of-doors. All will flower the succeeding autumn, but remember that a seemingly poor flower the first year will often improve vastly the second one, while in some cases the reverse will obtain.—B. C. R.

Chrysanthemum M. Gustavs Grunwald.—This Chrysanthemum has proved to be very early, for even here in the North of Scotland I had it in bloom in the middle of June. It may best be described as a Pink Mme. Desgrange. It possesses a great advantage in the fact that every flower-stalk rises a good distance from the foliage, and thus all the blooms can be cut with profit. In Mme. Desgrange the ends are crowded together, and blossom close to the

foliage. M. Grunwald is dwarf and very floriferous. Amateurs should make a note of this variety as a pot or bedding plant as a companion to Mme. Desgrange and its varieties.—J. G. W.

OUTDOOR PLANTS.

4624.—**Blue Gum and variegated Agavus.**—Unless the winter is exceptionally severe, both subjects will probably be quite safe in a sheltered garden near the south-west coast. Last winter we unseasonably trying, a severe and prolonged frost exceeding a very mild and moist autumn, which, of course, rendered the growth of everything soft, and unable to withstand the cold. Should severe weather seem imminent plenty of dry ashes should be heaped up round the plants before it sets in, and then the former, at any rate, will spring up again from the root, even if the tops are cut off.—B. C. R.

Both the Blue Gum and the American Aloe would probably live out in a sheltered garden on the south-west coast in an ordinary season. I remember seeing a Blue Gum which had grown to a large size in a garden not far from Exmouth some years ago; but I do not think the variety was globulus. However, globulus is probably as hardy as any, and I remember about the same year, 1878, I think it was, seeing a large plant of globulus in a garden on the banks of the Mersey, near Liverpool. In ordinary seasons these plants will doubtless survive in sheltered gardens; but occasionally we get an extraordinary frost, and away goes the plant we have nursed and cherished. However, it is better to have loved and lost than not to have loved at all.—E. H.

4597.—**Daffodils for a small border.**—The following are cheap, and will flower well: *Bicolor nobilis*, Trumpet-major, *chavallis* (the Tenby Daffodil), *Pseudo-Narciss* (Single Lent Lily), *Telemachus plenus* (Double Trumpet Daffodil), *incomparabilis flore pleno* (Butter-and-Eggs), *Grange Phoenix* (Eggs-and-Bacon), *Leeds posthous*, (*Phœasant's-eye*), *ornatus*, *Donnie Roman*, and *Silly White*. The sooner Daffodils are planted the better.—E. H.

4596.—**Planting a Pentstemon.**—This should be planted out early in May. If you have the plant already, I should recommend you to pull off the side shoots as soon as they are about 4 inches in length (they will come away with a little toothed heel), and pluck off the bottom two pairs of leaves; prick them into a bed of light soil, and cover with a hand-glass. By bedding time next year, each of these will have made a strong plant. The Pentstemon is more than half hardy, and will survive a mild or dry winter without protection, but a wet winter with severe frosts kills those, as it does many other reputed hardy perennials. *Ceanothus* is a creeper sometimes called hardy, but severe frosts frequently kill it.—A. G. BUTLER.

I should advise you to keep Pentstemons over the winter in a frame. They are very beautiful flowers, but get much hurt in severe winters. I have a bed of them, and trusted them in the open, but the majority got killed by the frost. A cold frame or a greenhouse will suffice, delaying planting out until the spring. Pentstemons will live in ordinary garden soil, such as is suitable for Pelargoniums, and have this year proved, in spite of the severe drought, amongst the finest flowers of the year. They are still gay with flowers, and in late August or early September were a picture of colour. There are many varieties, the names of which may be ascertained by referring to good catalogues, and the more delicate shades are remarkably pleasing.—C. T.

The spring is the proper time to plant out this and all other subjects of doubtful hardiness. Towards the end of April (the weather being fine and mild) or at any time during May is the best period.—B. C. R.

I would advise "Florence" to wait until March, or early in April, before planting out any of these flowers. Although they are quite hardy in some localities, in others they are only half-hardy, and she would do well to avoid any risk during the coming winter. Any cold frame or pit will afford all the protection needed by a Pentstemon.—P. U.

4628.—**A town garden.**—According to my experience, Carnations will keep better right away from a wall or any other protection than they will close to it. Probably you have no choice in the matter. In that case do not be tempted to coddle your plants in any way.

Press the soil firmly about the roots now, and two or three times during the winter after frost, and when the surface is dry, and leave them to their fate. If you have very choice varieties you had better keep them in a cold frame until the middle of March.—J. C. C.

I am pleased to hear you have started growing Carnations; they are excellent town plants, as one may judge from the many fine specimens to be seen near London. One of the best amateur growers lives at Clapham. I had some good Carnations this summer, and did not protect the plants in any way, merely making the soil about them firm when weather permitted. Frost sometimes almost throws them out of the ground. Another amateur, residing near, did exceedingly well with his Carnations, and, I believe, did not protect in the slightest. Give a top-dressing of wood-ashes or well-rotted manure in the spring, and in the event of very severe weather a little Bracken placed amongst them will do no harm. One great point in their culture is to plant the layers in September, so that they have a good season to get established in before severe frosts appear and put a stop practically to growth. As you ask for a few hints, I may say that the soil should be of a good loamy character, plant firmly, and in spring go over the stock, press them well into the soil, and throughout the summer give water whenever the ground gets very dry. In the spring the top-dressing may be given, and little attention is required until it is time to layer in the month of July. Get in your selection a fair proportion of selfs. I have recently given a small list.—C. T.

Carnations are perfectly hardy, and need no protection during winter. The only thing which causes them to die in the cold weather is excess of damp. Last winter many rotted from the unusual abundance of wet weather. Cotton-wool-fibre would tend to retain moisture at the collar, and would, in my opinion, be decidedly injurious.—A. G. BUTLER.

I should strongly advise you not to mulch the Carnations in any way. As far as I am aware, the soil of Clapham is light and well drained, and this being so, strong plants of hardy varieties planted in good time will be perfectly safe. If kept fairly dry the Carnation is a perfectly hardy plant. A little ashes would be the least objectionable; but even this is unnecessary.—B. C. R.

4575.—**Laying out a small plot.**—This is too narrow a slip of garden to do very much with, yet with good management it may be made to yield its possessor a good many flowers. Possibly the area for growth may be increased by one or more arches, such as are now so well supplied ready-made in wire for such purposes, and these, as well as the south wall, may be covered with such creepers as a *Gloire de Dijon* Rose, *Clomatis montana*, and *Clomatis Jackmani*, *White Jasmine*, *Yellow Jasmine* (*J. nudiflorum*), *French Honey-suckle* (*Lonicera sempervirens*), and *Virginian Creeper*. The first thing to be done is to dig the plot thoroughly to the depth of 18 inches, working in some stable-manure (a barrowful) and plenty of soot from the chimneys, if possible, or if the soil is very poor, taking it out and putting in a few barrowfuls of good turf-mould from an old pasture. The creepers can be planted in October, and the soil should be renewed at once to be ready for them, for careful planting is necessary to success. When they are turned out of their pots the roots should be spread out in a fan-shape, about 6 inches below the surface, and then covered with fine soil and trodden in till the plant is quite firm in the ground, the long shoots being nailed at once to the wall or tied to the wire arches. In front of the creepers a bright bed of bulbs may be planted *Crocuses*, *Scilla sibirica* (sky-blue in tint), *Tulips*, *Hya-cinthus*, and *Narcissi*, all of which will make a gay show in spring, or stout little plants of dark-red *Wallflowers*, *Forget-me-nots* (*Myosotis disitiflora*), and *Pink Donnie Daisies* will look equally well in spring. Any summer bedding plants will succeed well here if thoroughly supplied with water; but in arranging them it is well to break up the stiff line into groups, in the middle of each being a handsome tall plant, with others graduated in height around it, the lowest being kept in the front. Stiff lines are always ungraceful, but much may be done to avoid them by this plan, trailers being used in front to break up the edging line as much as possible. Definite lists of plants for this border in summer can be given, if desired, in the spring. *Lilies* and *Gladiolus-hilms* may be planted in October and March, and will be very suitable for this border.—I. L. R.

ORCHIDS.

ONCIDIUM LEUCOCHILUM.

This is a very beautiful and showy plant, one that is well distinguished by its pure white lip, which is so very different to the majority of the Oncidiums. I have now before me a nice little spray of fine flowers, which are each nearly 2 inches across, and have the sepals and petals spreading, nearly equal, with a ground colour of yellowish-green, barred and blotched with very dark blackish-brown. The lip is large and pure white. The sender, "Thos. Hudson," asks if it is a plant which requires much warmth, because he fancies that all white-flowered Orchids are tender, and having this plant presented to him, he would like to grow it well. This Oncidium was first introduced into our gardens from Guatemala, now nearly sixty years ago, and in those days it took much longer to traverse the distance from that country to this than it does now, when we have such ocean greyhounds as we have in our fast steam vessels; but, however, even in those days the plants reached this country in a living state, and soon afterwards flowered. The plant was collected in Mexico as well as Guatemala, and was imported by various people, and it became very popular when I was young amongst Orchids, and about that time it was frequently to be seen at our great London exhibitions; but in the present days one seldom sees it grown; in fact, the present race of gardeners and amateur Orchid growers would appear not to know the plant, and this is the more to be wondered at when it may be grown in the cool-house with the now popular family of Odontoglossums and other things. And certainly the very finest plant and most superb variety I ever saw was once when visiting the unique collection of the late Mr. Dawson, at Uddingstone, near Glasgow. This plant stood out in a cold-house, and it was in the most robust and vigorous health and blooming profusely, the individual flowers being large in size, the lip pure white, the other segments being nearly black. Now, this plant, which I hope will regain its popularity, is a remarkably good and free grower, requiring but to be potted in good peat-fibre and Sphagnum Moss, and to be well drained. In potting the bulbs should be set up above the soil in a little mound. It should receive a good supply of water during the growing season, and the atmosphere should be kept in a nice moist condition. Much less will suffice during the dull season; but I have always found it throw up its spikes freer if not dried in the winter, but it should be kept cool.

MATT. BRANBLE.

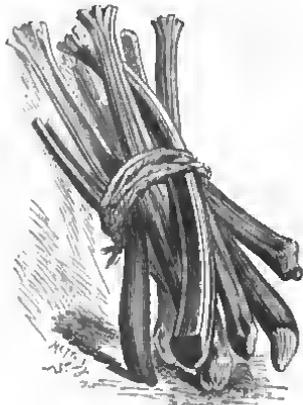
THE KITCHEN GARDEN.

RHUBARB AND ITS CULTURE.

This will grow in many kinds of soil; but the richer and deeper it is the finer will be the quality and size. The situation should also be moderately dry, or made so by drainage. It will grow in clay, peat, or bog-earth of the Fens. I have seen it succeed remarkably well in mud cleaned out from the river. When the leaves get fairly into growth they need plenty of food to keep them growing. The larger the leaves of one season the stronger will be the crown for the next; hence the importance of rich feeding all through the growing season. It is a good plan in small gardens to plant Rhubarb near the depot for house sewage, so that it may be nourished with this as well as solid manure; 4 feet, at least, of rich root-run should be provided for it. For new plantations the ground should be thoroughly trampled and manured. Its productive force should be kept up afterwards by an annual dressing, from 2 inches to 3 inches in thickness. No plant is more easily increased and multiplied than Rhubarb; plants two or more years old seed freely if permitted to do so. Unless seed be required, however, they should not be allowed to do so, as seed-bearing weakens the crowns. The seeds ripen about the end of September, and may be sown at once in shallow drills a yard apart, or they may be sown in February. As soon as they are well up thin the plants to 18 inches or 2 feet asunder, according to the size of the kind and the intention of the cultivator. If intended to remain where they are, a yard apart is large enough;—in case

too close for some varieties. Some, however, prefer rows 2 feet apart, and thinning the plants to 1 foot only the first season; then in the October or February following fresh ground is prepared, and the Victoria kind is transplanted at distances of from 4 feet to 6 feet by 4 feet, and the Debaunce 3 feet by 18 inches or 2 feet. The best plan is to sow Rhubarb where it is to remain, as it forms immense roots that are easily broken—and to break it is to injure it more or less. Nevertheless, a very common mode of

PROPAGATING RHUBARB is by root division. The huge stool or fleshy root is sliced into as many portions as there are crowns to it with a sharp knife or spade, and each slice forms a new plant. Gathering Rhubarb, and when to cease gathering, are matters which require more attention than they generally receive. In gathering, the proper method is to give the leaf-stalk a twist outward, and a sudden jerk down at the same moment. From want of attention to this, many tear off the crown with the base of the leaf-stalk. Again, too many leaves should not be gathered at once. If a plant have only a dozen leaves, do not gather more than six of them, and let these be the lowest. Some prefer Rhubarb when the leaves are freely unrolled, others when they are half-grown, and others when they are fully grown. Of course, there is great waste if the stalks be gathered before they have reached their full length. Rhubarb is at its best just when the leaf has reached full size. It can hardly be too old for preserving, and is seldom gathered till the end of August for



A bundle of well-grown Rhubarb.

that purpose. As to the time of ceasing to gather Rhubarb, it should certainly be not later than August if the gathering is to be annual; this leaves but little time for the last leaves to ripen good crowns for the next year's crop. All the leaves removed have doubtless been a loss to the plant—they did much to weaken and nothing to strengthen it; it is only the leaves left on that recoup it for its loss in those taken off. Hence the importance of rich food to replenish the plant, and time for the maturation of the later growth; and it need hardly be said that no wood must be permitted to grow at the expense of the Rhubarb plants.

FORCING RHUBARB.—There are various ways of forcing this useful plant, which may briefly be divided into two distinct methods: No. 1, consisting of lifting the roots and placing them in artificially-heated structures; or No. 2, by covering the crowns where they are grown with pots or boxes, and applying forcing material, composed of stable-litter, leaves, &c. or, in fact, anything that will generate warmth enough to excite growth. There is much to be said in favour of both systems, for they are both good under certain conditions, and gardeners in private gardens, as a rule, find lifting the roots and placing them in heat the best plan for the earliest crops during December and January; for where heated glass structures are in use, a supply of Rhubarb may be procured without any additional outlay, or even occupying any space useful for any other purpose, as under stages, or in the boiler-shed, or, in fact, any position near the hot pipes. The roots may be placed on the floor, or in pots or boxes, and

covered with soil, keeping it moist, and the crowns may be covered with hay, Fern-fronds, or litter to blanch it. The only objection to this plan is that it weakens the crowns more than by forcing them in the ground, as the roots get very much mutilated in removal, so that if the quantity of Rhubarb roots is limited, it is preferable to adopt the plan of forcing the roots where they are grown. Procure the requisite number of pots, with movable covers, and place them over the crowns; then cover them over with fresh stable litter or a coating of leaves and litter mixed together. The leaves of deciduous trees are most useful for many purposes, as they can be used for forwarding crops of Rhubarb and then placed in pits or frames for supplying bottom-heat for Cucumbers and other early crops. To have Rhubarb fit for use at Christmas cover the crowns in the middle of November, and as soon as the first betch gets fairly started into growth cover a few more pots in succession until it comes on naturally in March, when any large tubs or boxes turned over the crowns to shelter from cold winds will forward the growth at least a fortnight before the crowns left uncovered. Rhubarb, unlike many other crops, is better when forced than from the open air, being more tender and succulent. In addition to the two well-known kinds first mentioned in this article other desirable ones are as follows: Mitchell's Royal Albert or Early Red, an excellent and very early sort; Scott's Monarch, a giant variety of much excellence; Hawke's Champagne, the favourite London Market sort; and Myett's Linneus, a second early kind, of excellent quality. U.

4021.—Asparagus-bed.—Seed-bearing has an exhausting effect, and this is one reason why I advised its removal. Then, again, those who leave the seeds on the plants generally leave them to ripen and fall about the bed, where they grow and crowd the original plants to death; but this does not appear to be the case with "J. N. S.," so his bed is thin in place, and he might with advantage sow seeds or set out young plants in sufficient numbers to fill up the bed. The seeds may either be sown now or in spring. The seeds will grow earlier if sown now.—E. H.

4018.—White Tomato-fly.—Yes, if this attacks the *Chrysanthemum*, as it probably would, it would injure them considerably. I suppose for "stove" should be read "smoke," and if so, certainly, as two or three good fumigations would probably banish them entirely. Another excellent remedy for this pest is to syringe the affected plants with a solution of Calvert's soft-soap.—B. C. H.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in *GARDENING* free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the EDITOR OF *GARDENING*, 37 Southampton Street, Covent Garden, London. Letters on business should be sent to the PUBLISHER. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as *GARDENING* has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in *GARDENING* should mention the number in which they appeared.

4041.—Lemon-scented Verbena.—I shall be glad to know how to strike cuttings of this plant? I have tried two or three times and failed. Cannot get them to root.—I. B.

4042.—Flowers for Christmas church decoration.—What flowers could I get now to have them in bloom for Christmas church decoration? White preferred.—OXFORD.

4043.—Colours of Violets.—Will anyone very kindly tell me what colours are the following sorts of Violets? Maille Louise, Comte de Brazza, Mme. Millet, and De Parme.—JURONAMUS.

4044.—Freesias.—Will someone kindly say if it is right for Freesias to be very long in the leaf and drooping? I planted them early last month in pots in a vinery, and they have grown about 8 inches long now, and are hanging down. Should they be left in the vinery or put in a cooler house?—A BEGINNER.

4646.—*Gloriosa superba*.—Will someone kindly tell me how to treat the above bulb the year through? I have just had a bulb sent me, and I do not know it at all. Is it valuable, and how should I manage it?—G. B. W.

4646.—*A frame-pit*.—Will someone kindly tell me the best way of making a frame-pit for keeping plants in the winter? What depth should it be? Is there any kind of heating apparatus for burning oil that could be used?—O. W.

4647.—*Oil-stove for a greenhouse*.—Will someone kindly recommend the best oil apparatus to heat a lean-to greenhouse, 12 feet by 6 feet by 6 feet high? About what it would cost to keep frost out?—AMATEUR, Hailham.

4648.—*Shrub-entails for a dry situation*.—Will anyone kindly advise me as to the best shrubs to plant in a garden where the soil is drawn and partially covered with a large *Beschertze*? The soil is a sandy loam.—BROOKER.

4649.—*Keeping Fuchsias through winter*.—I have a quantity of Fuchsias in pots. If I cut them down to the pots can I keep them through the winter laid on their sides in the cellar with *Delias* and *Begonias*? I am short of room.—H. B.

4650.—*Purchasing a greenhouse*.—I am about to purchase a greenhouse. Will someone advise me? Should I buy one as advertised, or should I have one made at home by a carpenter? Also what sort of heating apparatus is best?—AMATEUR.

4651.—*Fruit in a cellar*.—Is a cellar a bad place for keeping fruit? I had mine fitted up with spere, and it has a window for ventilation; but a great proportion of the fruit seems to get water. It is not damp. Perhaps it is caused by an insect?—LINDEN.

4652.—*Nrains Fothergill*.—Will any of your readers tell me how to flower *Nrains Fothergill*, also the kind of treatment they require after blooming, also what soil they do best in, and when they should be potted and what temperature they require?—R. P.

4653.—*A lean-to greenhouse*.—I have a lean-to greenhouse I wish to heat with a gas stove of some kind. Will anyone advise me of a good one to obtain? Size of house 30 feet long, 10 feet wide, 9 feet high in front, 12 feet high at back; Southampton.—DAYOON.

4654.—*Specimen sarsgreen trees, &c.*—Will someone kindly give me the names of about six of the best and most effective errorerers for lawns—three or four of the glaucous kind? I do not mind expense for good ones. Also of three or four of the best *Mandis*?—LANSIS.

4655.—*Treatment of a Bermuda Lily*.—Will someone please to say how I am to manage *hermudis*? This here six blooms last year, but none this! The flower stalks were blind, and I reported it about the time twelve months, when it leaves seemed withered.—A. M. G.

4656.—*Spring bulbs*.—What is meant by "sinking pots of bulbs in a bed of ashes"? Does it mean others of the fine dust which remains when the coal is burnt? Would a dark cupboard, heated by hot-water pipes, be a suitable place to put pots of *Tulip* and *Narcissus* bulbs in when first they are planted?—L. M. N.

4657.—*Mistletoe*.—I am anxious to grow some *Mistletoe*, and should be glad of any hints as to its culture? Last year I looked a berry in the bark of an Apple-tree, and it appears to have taken; but is there no quicker way to grow it, as I believe it takes many years like this to grow to any size?—PAUL PAX.

4658.—*Roses in an unheated greenhouse*.—I have a greenhouse in which I grow *Tomatoes* in summer in the beds each side of the path. Would a *Mercadal Niel* or *Niphetos* planted at the end of path trained up the end of house and along ridge, with one stem, thrive in that position? Any information will oblige.—E. M.

4659.—*Arranging a shrubbery*.—Will someone please to tell me how to arrange a small shrubbery in front of my house and at the sides? I want a variety, and to know the names of what sorts will grow best together? What distance apart should they be planted? Soil gravelly, in Southampton, facing west.—DAYOON.

4660.—*Loosing foliage of Chrysanthemum*.—A good number of my *Chrysanthemum* have lost their foliage, this time obfely *Alvanche*. I have never allowed them to get quite dry, standing in a single row facing west; county, Lancashire. Would someone suggest the cause, so that I may guard against it another year?—G. B. W.

4661.—*Clearing a ditch*.—In my field there is a ditch on my side, and a hedge on the other side of it. (a) Have I a right to clear the ditch of bushes and brambles overhanging it? (b) Have I a right to take water from the ditch? (c) If my neighbour levels the hedge and overlooks me, have I any remedy, and, if so, what?—JONOTUS.

4662.—*Sawdust as manure*.—Will anyone advise me as to the best way of treating sawdust that has been used for bedding? It soaks up a large quantity of animal manure, but it does not decompose very readily. What would be good to mix with it? I suppose lime would destroy the manure, and so make it all useless? How would ask?—M.

4663.—*Making a tennis-lawn*.—I wish to make a proper tennis-lawn, 80 feet by 40 feet wide. Will someone tell me how to proceed? I want it to be all Grass, and should like to sow it now if not too late? What quantity of seed would it take, and does it require any sowing other than the soil? Any information will be acceptable. Soil gravelly, in Southampton.—DAYOON.

4664.—*Fast-growing Fir trees*.—As my house and avenue are in full view of the public road I am anxious to shut out the view by planting a row of fast-growing evergreen trees, and would be glad to know the names of the latest-growing variety of the Fir tribe? Also the height they should be at planting time, and the proper time to plant?—WICKLOW, Ireland.

4665.—*Carnation seed*.—I should be glad if someone would give me a little advice as to sowing *Carnation* seed? I have tried this but have only succeeded in sowing two pods, one of *Harrico* and one of *Mrs. Reynolds* type, and they seem to be quite two months ripening. Would it be advisable when the cold weather comes on to take the pods off the bush ripening?—SOUTH STAFFORDSHIRE.

4666.—*A boarded fence*.—I have about 160 feet of boarded fence, facing north and south, also a brick wall, 50 feet long and 8 feet high, facing west. Will someone tell me what fruit-trees would do best in the different positions, and how far apart they should be planted? I should like as large a variety as possible. A few names of good sorts will oblige. Gravelly soil, in Southampton.—DAYOON.

4667.—*Fruit-tree round a large tennis-lawn*.—I wish to plant an espallier or ordon of *Fruit-trees* round a large tennis-lawn. Will someone please advise me what trees are most suitable, and the names of the best sorts; also when to plant, how to plant, distance apart, and how to make the espallier or support for the trees? Space at disposal 220 feet, gravelly soil, in Southampton.—DAYOON.

4668.—*Rhinbar and Mushrooms in a shed*.—I have made a lean-to shed 9 feet 6 inches square, 6 feet from the eaves. I intend to have a shelf 1 yard off the floor and 1 yard wide all the way round. Will anyone kindly give me information with regard to forcing *Rhinbar* and growing *Mushrooms* hard about Christmas? I may add that there are no windows in the shed.—REOCLAR PRESBER.

4669.—*American Blackberry*.—Two years ago I bought a *Wilson Jun.* (*American*) *Blackberry*; it has grown well, and this year has bloomed twice, once in the early summer and is in bloom now, but none of the blooms set for fruit. The blooms are very double, like small *Roses*, and very pretty; but I should be glad to know why there is no fruit? It is trained on high fences, facing south-east, and is growing in good soil.—A. K.

4670.—*Plants for next season's blooming*.—Is it possible to grow any or all of the following plants to bloom next season? If so, will someone kindly give me a few cultural instructions, stating when the seed should be sown? *Campanula pyramidalis* (*Canterbury Belle*), single and double, *C. calyculata*, *Polyanthus*, *Double Delais* (*Belle*), *Cowslip*, *Eranthis Primrose* (*Gnothera hians*), *Foxglove*, and *Pentstemon*.—AMATEUR.

4671.—*Window plants*.—What is the best method of keeping the ordinary class of window plants, such as *Fuchsias*, *Geraniums*, *Spireas*, *Hydrangeas*, *Marguerites*, &c., during the winter? I should like them to be cut down? I have no ground in front, but I have a frame in the garden about 6 feet square, and plenty of space in empty rooms in the house. Would either of these places be suitable, and how often would the plants require water?—L. M. N.

4672.—*Roses in pots*.—Will someone tell me what to do with my *Tea-Roses* in pots which I have just placed in the greenhouse? I propose pruning them in January, and want to know what watering and syringing should be given them till then? I suppose they will not require any heat till then, and that they may have plenty of air, except when it is freezing? As some are still in flower, I intend repotting them in order—as they go out of bloom.—SOUTH WALE.

4673.—*Plants for conservatory*.—I have a small conservatory, size about 14 feet 6 inches by 13 feet 6 inches. I am anxious to know what flowers will be suitable to cultivate in it? I have at one end a rockwork filled with *Fuchsias*, principally *Maiden-hair*. As climbers I have a *Tacsonia*, *Sophoranta*, *Pimbaro*, and *Oleandra*. The house is heated with hot-water pipes, and so it opens from a room, I wish to feel it as comfortable as possible. Any suggestions will be acceptable.—AMATEUR.

4674.—*Restoring a lawn*.—I wish to know the best method of restoring a large lawn which has suffered seriously from the scorching heat and drought of the late summer? It has a due south aspect and slopes towards the south. In places the ground is quite bare, and as though there had never been any Grass on it; the banks also are in a very bad way. After the rain in July the bare places were sown with Grass-seed, but the return of the heat seemed quickly to destroy the young growth.—MRS. C. WOODLORON.

4675.—*Heating a greenhouse*.—I have a small lean-to greenhouse 10 feet by 7 feet, with an average height of about 6 feet. It stands north-west, and has a high 9-inch wall at back, and a stable against north-west end. Will someone, who knows from experience, kindly tell me if an oil-stove with a 3-inch wick would be large enough to keep it at a keen frost? Or, if not, what size stove ought I to have? I do not want a stove for forcing purposes, but only to protect such plants as "*Geraniums*" and *Fuchsias* from frost. What kind of ventilator would be required?—J. H.

4676.—*Carnations in a smoky district*.—As I live in a very smoky district, and am very anxious to grow *Carnations* well, I should be glad if someone would give me a little advice. I am building a low house, with some frames I have to keep the plants in to the wicket, and I am making it so that for the summer I can take the sides out and leave the roof on, so as to keep the flowers clean when they are in bloom. I should like to know if the plants will be as healthy with this arrangement? I have provided plenty of ventilation. I should also like to know if *Roses* would be likely to do well under similar treatment?—SOUTH STAFFORDSHIRE.

4677.—*Heating a large greenhouse*.—I have a greenhouse measuring about 18 feet long, 10 feet broad, and 16 feet high, which I want to heat only sufficient to keep out frost so as to preserve such things as *Cleoceras*, *Arum lillie*, *Geranium* cuttings and the like during winter. Will I be able to do this with an oil-stove or heating apparatus burning oil, as I cannot afford to fix a regular boiler and pipes? I have been recommended *Rippling* and *Stoves*. I may mention our winter here are very mild compared with English winters; some years suffering very little from frost. The advice of "*B. C. R.*" will be much esteemed.—WICKLOW, Ireland.

4678.—*A small coolhouse*.—I have a small coolhouse (span-roof), 12 feet by 8 feet; ends face north and south. I should like to devote it to Vines, or half Vines and half *Tomatoes*. Would "*J. C. O.*," or any similar amateur's friend, advise as to what sort to get? I should like variety—that is, light and dark ones. Where could I get the Vines? What distance apart, or how many canes would it take to plant on one side? Plant inside or outside? I have plenty of space to make an outside border. Would it be advisable to put in a flue with sanitary pipes? I have a heated house, but cannot spare room for the flue. When is the best time to plant, and information, especially would greatly oblige?—MRS. C. WOODLORON.

4679.—*Ivy-leaved Geranium*.—I want to grow a couple of *Ivy-leaved Geraniums* up the sides of a small porch about 10 feet high, so as to have it thickly covered with bright green leaves and plenty of flowers to make a good show, and am anxious to know the names of the two best varieties for my purpose. I think I have seen *Madama Crocus* favourably spoken of in *Gardens* for such a purpose. I will not be able to raise a flag of the porch and plant the roots in the ground, but intend to plant them in boxes which I have had made to fit each side of the porch, measuring 22 inches long, 15 inches deep (inside measurement). In such large boxes I suppose the roots will not be in the slightest curled as the *Geranium* is such a small-rooted plant?—WICKLOW, Ireland.

4680.—*Ornithogalum arabicum*.—Although I fear that many amateurs have had much experience with this bulb, I am writing a query on the subject of its cultivation with the hope of getting some information on a rather curious experience! In the spring of the present year I purchased a dozen fine bulbs from a show in London. I looked up the culture in the back volumes of *GARDENING*, and the bulbs were duly potted and placed in an ordinary greenhouse from which frost was excluded. Two of the bulbs died, and only one sent up a few leaves; but finding them still sound, the pots were turned out-of-doors for the summer, and occasionally watered. As the time of writing these bulbs are strong, plump, and green. They are rooted, and have much increased in size, although there has been with the single exception no top growth. Some or them are as large as ordinary bedding *Hyacinths*. This is altogether such a unique behaviour in the way of bulbs that I thought it worth while to contribute a note about it, and to ask for guidance as to the future treatment? They are potted with the bulbs full out of the soil, and the upper part from which the growth should show is perfectly sound.—H. L. G.

4681.—*The Umbrella-plant (Amarantus)*.—I certainly cannot answer your query, because I do not know what plant you refer to, so that I am a good deal more of an ignoramus than yourself. It may be that you refer to the *Agapanthus umbellatus*, but I cannot say. Send word again if the flowers are produced in large umbels, and if they are blue in colour.—J. J.

4682.—*Variegated Ferns (C. Elliott)*.—I will devote an article to these soon for your special benefit; but I must tell you in reply to your question that nearly the whole of the kinds of variegated *Ferns* are of the family *Pteris* and that I have seen a variety of one of our common *Bracken*, but it did not retain its variegation. All such variegated *Ferns* are very difficult to maintain upon plants which have a creeping rhizome.—J. J.

4683.—*Lomaria invariata*.—G. B. sends me a much worn root of this plant, which has the appearance of having been blown about by the wind. This is a regular gem from New Zealand, which looks well under a glass to the hall or to the window of a cool room, and I would advise you to fix it up so, making a companion plant of a *Tedea* superba. These look best in a round glass, and this should be a ventilator on the top, when they will make a beautiful ornamental pair.—J. J.

4684.—*Zygopetalum Gantleri*.—*Orchid Lover* asks me about growing *Zygopetalum Gantleri* in a cold house, and as to how I would let it remain. It frequently comes home upon the stems of a *Tree-Fern*, and I think that in this position it does the best; but these stems, if dead ones, soon decay and rot away. I therefore advise my enquirer to purchase a living *Tree-Fern* that the plant may have its natural surroundings. It is a magnificent flower, worthy of every attention, and requiring the heat of the *Cattleya* house.—M. B.

4685.—*Oncidium limminghei (G. Boston)*.—This is the name of the flower you send, which you say "creeps flat upon the blocks on which it grows, and is not so heavy." Now this plant is thought to come from Caracas, and belong to the section to which belong the two forms known as the *Butterflies* (*O. papilio* and *O. Krumerianum*), although the flower is very poor in comparison to these; however, it should be grown upon a block of wood, and it likes the temperature of the *Cattleya* house.—M. B.

4686.—*Stanhopea tigrina*.—*James Bennet* sends me a very nice variety of this plant for a name, which I here give, and I wish to draw attention to the splendid condition in which this heavy flower came to hand. It was packed in a stout box, with no packing, consequently it had nothing to break about in the flower, and it came out as fresh as when it was put in, and I am much obliged to "*Mr. Bennet*." It should not be dried off at once in case it has not finished its growth; but when it has done growing the plant should be kept cool and dry.—M. B.

4687.—*The Rattle snake (Pholidota Imbricata)*.—An *Orchid Lover* asks various questions respecting this species, which I here endeavour to answer. It is an East Indian plant, and it will bear any amount of heat and moisture, of course, less being requisite in the winter season. It comes into flower in the spring months, being white in colour, the blossoms are arranged in a pendulous spike, each flower being enclosed in a thin membranous bract of a whity-brown colour. It should be potted in peat and *Sphagnum Moss*, and the pot should be well drained.—M. B.

4688.—*Oncidium varicosum*.—*Orchid Lover* says this plant of his is now coming into flower. It is true he calls it *Rogers*; but I should like him to send me a flower of it when it is open, that I may verify it if correct. The plant being upon a flat board, which I abhor, it cannot be moved without great injury to the plant, so it should be allowed to remain and to flower; but in the spring it may be set into a pot with peat and *Moss*, and after a time the plant may be worked off the board, and the plant will become established in the pot. It should be kept in the cool-house.—M. B.

4689.—*Bridgetia plicata (R. R.)*.—This, which it would appear more correctly named *Ercilia plicata*, is a *Chilian* plant, introduced upwards of fifty years ago. It has a double flower, which are lobed at the edge, and dark-

grows. It clings after the style of the Ivy, and produces in spring reddish flowers in abundance; but I do not remember ever to have seen it bearing berries. The part you speak of being bare might be covered with Eucyonium radicans, which has the property of clinging to the wall in the same manner as the krollia. It does not require any culture.—J.

4690.—Gymnogramma leptophylla.—De Brock sends me a few fronds of this plant, which boysay were gathered in Jersey; this being the case, it is the species named above, and it must certainly rank amongst our British Ferns. I am quite aware that the insect fauna of these Channel Islands are not counted as British, but there is just the possibility of their flying from the mainland of France, and with plants which are fixed in the ground there is a difference, and which the ground is British so will the plants be the same.—J. J.

4691.—Oncidium Gardneri (Twin).—You should keep this Orchid in the shade, and of the Oncidoglossums through the winter months, and by no means let the plant become quite dry; but do not keep it in such a wet state as to start it into growth at the dull season of the year, because this has the effect of preventing any flowers appearing. More plants of this and its allied species, such as O. Forbesi, O. crispum, and others fell through being kept too hot, and too wet through the winter months than from any one thing. You have said the plant quite right, thrive, for only the summer; and if you continue to treat it right through the winter I have no doubt but the growth next season will reward you with flowers.—M. B.

4692.—Oncidoglossum Alexandræ.—A reader, I suppose without a name, for I cannot find one; however, he wants to know when to report this plant. Well, if it requires reporting, now is about the best time to do it, but it may not require it, and many amateurs are soch dabblers at the reporting system that every year their plants must be reported, until they are reported out of the world; but if the plant does not require it, now it will be better for a top-dressing; to do this, the plant should first be carefully knocked out of the pot, the drainage examined, and made sound, then it may be set back again, and the top soil carefully removed and replaced with new, which should consist of good peat-3rds and Sphagnum Moss; the surface may consist of the live pieces of Moss only.—M. B.

4693.—Epidendrum bicoloratum.—G. Hull sends me flowers of this plant, saying if it is not a different variety? But to think of the plant quite right, thrive, for I think it is only a plant from British Guiana in which the sepals and petals are somewhat narrower than in the normal state, and they are more or less dotted with rosy-purple; your spike of seven flowers must be very pretty, but I have seen it producing a spike which had borne twenty-three or four flowers, and this but a few miles from London. This is a difficult Orchid to retain long in coldness, as some of those are which come from the influence of the spray from the salt water in tropical countries. It appears, however, to grow very well in very strong heat, but it should be subjected to a good current of air during the time when the sun is brightest.—M. B.

4694.—Polypodium.—K. W. asks if the kinds mentioned by me some little time back will stand unprotected in the open air through the winter months, to which I may answer in the affirmative, and so also will the Pteris Fern (Alloisurus crispus). The finest that I ever saw of this species was in a quarry at Bunking, but I do not think "K. W." would be in keeping the British Maiden-hair Fern (Adiantum Capillus-venusti) in his neighbourhood. The Wall Rue (Asplenium Bnt-marrisii) will grow anywhere if lifted right—that is, it should be taken with the piece of brick or stone upon which it had originally grown intact, and this should be built into the fernery. This species might also be called the Churchyard Fern, for it may be seen growing on many of the old tombstones in almost any churchyard of any age, but in such a place it should be secured. Woodwardia radicans is a native of Madeira, and although it does not require much warmth, it will not stand any frost.—J. J.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

A. M. G.—The Cherry-tree leaves look as if they had been eaten by a weevil of some kind, but we can see no trace of it now. Also, probably the roots have got down into an unfruitful soil.—Sotus.—Use any one of the stores advertised in GARDENING. We cannot recommend individuals.

NAMES OF PLANTS AND FRUITS.

*. Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C.

Names of plants.—G. G.—1, Devalle solid; 2, Apparently a Laucostegia; too much shrivelled to define. The others cannot name from such specimens.—C. Franklini.—Teoma farnesoides.—E. P. L.—Cystopteris bulbifera.—J. M.—A form of Athyrium filix-femina, resembling A. filix-mas, and the name in a box. When the package came to hand it was in many places, and beyond recognition.—M. B.—1, Asplenium Balanag; 2, Polypodium vulgare cambricum.—John.—Aspidistra lurida variegata.—Cultrata.—Berberis aquifolium.—H. U.—A Salvia, probably Salvia Heeri, but specimen dried up a good deal.—E. Brown.—Spartanum africana.

Names of fruits.—W. H. Woodcock.—Apple Crimson Queening.—Hussongfeld.—Cranet name the Apple from such a bad specimen. May be a Crab.—Cultrata.—Pear, Autumn Hungarian Apple, Seek no Further.—Mentha.—Pear, Winter Nalle.—G. B.—Parr Williams' Non Chrétien.—Broughshane.—Apple Cornish Gillflower.—Choc. Dates.—Appria; 1, Cox's Orange Pippin; 2, Early Harvest; 3, King of the Pipples.—C. H. D.—Pears: 1, Beurré Diel; 2, Napoleon; 3, Autumn Oranges.—Carrotus.—Apples: 1, Yorkshire Beauty; 2, Not recognised; 3, Hawthorned; 4, Syme.—W. G.—Pears: 1, Beurré d'Amalou; 2, Napoleon; 3, Calbergh.—Appria.—The name of the Apple of Winkfield; 6, Beurré Diel.

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GARDENING ILLUSTRATED.

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Founded by W. Robinson, Author of "The English Flower Garden."

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TREES & SHRUBS

HEATHS IN FLOWER.

THERE are many districts within a short distance of London where the Heaths form a grand feature in early autumn. As a garden plant, however, the Heath and its numerous distinct varieties might be made more use of, not alone in the wild or semi-wild garden, but in cultivated portions thereof, either in beds, clothing a dry spot or sloping bank, as an edging to the larger Ericaceae, or forming a groundwork, from whence specimens of some of its allies may be allowed to spring. In small gardens the Heath lends itself to some effective grouping, as there is a considerable range in height assumed by the different varieties, for the dense little Moss-like forms are, as a rule, from 4 inches to 6 inches high, while some of the more vigorous ones run up about a yard. Not the least attractive feature about the Heath is the time it remains in bloom, not only on the plant, but also when cut and placed in water. With regard to soil it is in no way particular, but where very stiff and clayey, the incorporation of some decayed leaf-mould will be of service, and a top-dressing of the same is of great assistance if it is hot and dry. A walk round any of the nurseries where these plants are grown during the flowering season will reveal the fact that there are several very beautiful varieties, differing not only in stature, but also in the colour of their blossoms and other features. Of varieties with white flowers, there are two or three well-marked forms, notably Searloh, a free-growing kind with large spikes of pure white blossoms. It is later in flowering than most of the others, and in some seasons will continue to bloom till stopped by sharp frosts quite late in the year. Another is alba minor, much smaller growing. This forms a dense mass of quite an erect habit, while rigida alba is totally different, being of a more spreading style of growth, while the spikes of pure white flowers, which are more massive than those of the last, are disposed in an irregular manner. In mentioning pubescens alba, attention may be directed to the peculiar pubescent character of the foliage, which imparts to it quite a greyish hue, so that at all seasons it can be readily detected by this feature alone. This is by no means the only variety in which foliage distinctions play a prominent part, as there are two

YELLOW-LEAVED forms, both very bright and pretty. In one of these, namely known as aurea, the foliage is of a rich golden hue, while in the other it is more of an orange with a bronzy tint. To this last the name of cuprea is sometimes applied. In both the golden hue is much more effective where the plants are fully exposed to sun and air than in the case if they are at all shaded. The variety variegata has white leaves interspersed with those of the normal green tint, and is curious when closely inspected, but by no means striking. A noteworthy form is pygmaea, which forms a dense, cushion-like mass of a rich deep-green colour, and but rarely flowers. It is quite common

like in appearance, and as an edging to the others or a rockwork plant is quite at home. The rich tint of its foliage is very different from that of any of the rest. Numerous coloured forms are also in cultivation; a few especially notable ones are Alporti, which is a good companion to the white Searloh, as both are a good deal the same in habit, and they are also late flowering, but in Alporti the blooms are purple. A very bright form is coccinea, white, tenuis is slender in all its parts, but forms a dense pleasing mass with deeply tinted flowers. In habit dumosa rubra is a counterpart of alba minor, except that the blossoms instead of being white are of a purplish-red hue. The last to mention is flore pleno, remarkable from the fact of there being so few of the Heath family with double blossoms, for I am only acquainted with one other, viz, the Australian Epacris onomiflora or purpurascens. In both the blossoms are like little rosettes, those of the English representative being deep-pink, while in its Australian relative they are white. Some of the larger Ericaceae, such as Azaleas and Rhododendrons, have double blossoms, but the above two are all that I can recall among those that can be classed as Heaths. The Cornish Moor Heath, Erica or Gypsoecalis vagans, also flowers somewhat about the same time as the Heather. This is a free, vigorous-growing kind, that reaches a height of about a couple of feet, and bears densely packed spikes of pale purplish-red blossoms. In some the colour is much deeper than in others, that known as rubra being the best. There is also a white-flowered variety, alba. Erica multiflora is a near ally of the above, but the flowers are not borne for such a long distance along the shoots as in the Cornish Moor Heath. In any case Erica multiflora is valuable from the fact that its rosy-red blossoms are produced after those of nearly all the others are past.

4059.—Arranging a shrubbery.—The first thing to do is come to a decision about the main features. Do not plant a meaningless mixture; have a bold group or two, and these there will be more character. Say there is a group of Cedar of Lebanon on or near the edge of the lawn, assuming that the foreground is turf, and the place is large enough for the Cedars to develop. If the place is too small for the Cedars drop in a group of Hollies, including several varieties, which should not be planted nearer to each other than 10 feet. In the background have a Weeping Birch or two growing out of a group of Laurels; the combination is a charming one. The Laurels may be 15 feet apart. If the soil is suitable for Rhododendrons these and Azaleas may be grouped near the edge, and the open place between filled in with the old White and other Lillies, with a group or two of Montrosia in the front margin. A Lawson Cypress may be dropped in here and there to give elevation, and placea might probably be found for Laburnum, Prunus pissardi, Double-blossomed Cherry—the Bird Cherry is a charming background subject—Pam's Double Scarlet and other Thorns, Almond, Aucubas, and the Silver Maple. The Buck-eye-tree should have a prominent place

tion, and one of the most effective plants for the edge of the group is the Venetian Sumach. A few of the Golden Conifers, including the golden form of Lawson's Cypress. A charming group can be made of the Evergreen Barberries, including Darwini, stenophylla, and ampetrifolia, with a foreground of Mahonia Aquifolium, Aucubas—both the variegated and the green are valuable grouping subjects in association with groups of Lavender and Rosemary. Very pretty are groups of White Lilac springing out of the dwarf Holly-leaved Mahonia. The Guelder Rose, Hydrangea paniculata grandiflora, Pyrus japonica, Ribes in variety, Spiraea arizifolia, Syringa, Philadelphus (or Mock Orange) are all necessary even in a small garden, and the Tamarisk makes a very pretty feature on the margin of the lawn. This is only a rough idea, but no one could give more than a rough idea without knowing the size and the character of the place.—E. H.

—Keep the shrubs away from the front of the house—at least, do not have them just under the window. Plant them at the sides and in groups if the space at command is of sufficient size. The distance at which they should be planted apart depends upon the kinds, but give ample room for development, as all beauty is lost by the "higgledy-piggledy" arrangements so common and disgusting to the majority of gardeners. A small garden may be made as beautiful as a large one in its way if the proper things are selected. Make good use of the Bush Honey-suckle mentioned in GARDENING, October 7. Hardy Azaleas are very beautiful in a peaty or light loamy soil. They flower in June, and the foliage in the autumn is of brilliant colour. The Ceanothuses you might try, especially the variety Gloire de Versailles, which has rich blue flowers, also the Bladder Senna (Colutea), Quince, Cythians scoparius Andreanus (yellow and brownish-crimson flowers), Daphne Mezereum, blooming in early spring, or winter if the weather is mild; Deutzia gracilis; many beautiful kinds of Spiraea, S. arbuscula, S. arifolia in particular; Hydrangea paniculata grandiflora, very fine on the Grass, the heads of white flowers being of large size; Kalnia, in peaty soil; Olearia Haastii; Philadelphus Lemoinei, a dwarf, very free-flowering shrub, with white flowers; Rhododendrons in variety, Flowering Currants, Veronica Traversi, and Guelder Rose, also the Chinese species, Viburnum plicatum. These will, I think, be sufficient for you.—C. T.

4654.—Specimen evergreen trees, &c.—Picea Nordmanniana is a stately lawn tree, and one which preserves its lower branches in complete order for a length of time, especially where the soil is sandy. In stiff soil it does not grow quite so well. Thuja Lobbi will grow almost anywhere and in any soil. The growth is erect, the colour dark-green. Picea pinus glauca is quite one of the best lawn-trees we have where this special tint of colouring is required. Any kind of soil seems to suit it. Cupressus Lawsoniana glauca is another deserving kind; it is merely a glaucous form of the former. In growth it, all that is required. Abies Menziesii is a tall-growing glaucous form of the Spruce fir; it is much more handsome than

an ordinary Fir of the Spruce type. If the soil is light in character, Cedrus Deodora well deserves a place; its drooping habit and glaucous tint of colour would be all that could be desired in heavy soil, though it is apt to lose its "feather" at times. Picea nobilis glauca: This is a fast-growing subject with a distinct silvery-blue hue, quite one of the best of the tribe. Pinus excelsa represents quite another character in trees from the foregoing. It is a handsome subject, especially in sandy soil. Four of the best Maples are japonicum, palmata atropurpureum, rubrum, and planatoides. The chief point in all cases is to prepare the site for each tree well by trenching the soil 3 feet deep, and adding manure to the top spit of soil freely.—S. P.

Cedrus atlantica glauca and Abies Douglasii glauca are both excellent and effective lawn trees, and will thrive well in almost any situation. The Cedar of Lebanon, Picea Nordmanniana, and Pinus can be recommended. Picea nobilis has glaucous foliage, and is a very handsome tree. There are many beautiful trees among Maples. Acer rubrum, A. saccharinum (Sugar Maple), A. striatum, A. laciniatum (Eagle-claw Maple), A. cecolobium, A. pseudo-platanus lutescens and albo-variegata are ornamental trees. Then the variegated Ash-leaved Maple (Acer Negundo variegatum) should be in every garden, and the newer Japanese Maples have at any rate proved hardy in sheltered situations, but are too slow of growth to make much mark in the landscape.—E. H.

4648.—Shrubs suitable for a dry situation.—There are not many shrubs that like a dry situation, especially when the soil is full of roots of trees, as probably yours is. Berberis Darwinii and B. dulcis will do as well as any; good bushy and well-rooted plants of the Green Holly, Aucuba, the green and variegated forms of Aucynmas, Cotoneaster microphylla, and D. Simmondii, and Green Box. For the front line the Spanish Gerse will do admirably, as would Veronica Traversi. Before planting you had better pick up the ground, and put some fresh soil round the roots of the plants.—J. O. C.

—The Beech is one of the worst trees for shrubs to grow under. The foliage is dense, and even in winter the drip from the branches is injurious. The most likely things to succeed are common Yew, Green Hollies, Aucuba, Mahonia Aquifolium, Box in variety, Butcher's Broom, Rose of Sharon, Hypericum ocydonium, Ivies in variety, common Laurels, and Periwinkles.—E. H.

—The varieties of Athrea frutescens (Hibiscus sylvanus) are very suitable for a dry, warm soil, but they require a fair amount of sun. The Gum Cistus would also do well, while the Hypericums and Cotoneasters thrive in shady places, and so do Aucuba and some of the Berberis, notably B. Aquifolium.—B. O. R.

4664.—Fast growing Fir trees.—The ordinary Spruce Fir is the best you can have, as it grows rapidly and submits to being pruned or even clipped with shears, if at any time it overgrows on other subjects. You will gain nothing by selecting trees more than 4 feet high to start with. Trench up the ground 18 inches deep and plant two rows 6 feet apart each way. If you would prefer a choicer tree you may select Thuja Lobbi, which is a fast grower and quite hardy, but the Spruce will make the most dense hind.—J. O. C.

The end of October is the best time to plant any of the evergreen Fir tribe, choosing showery weather if possible. If the trees are to be obtained from a nursery they should not be more than 1 foot high, those larger are more likely to suffer from replanting. Many of them may die, as there is a certain amount of risk in planting evergreen Firs. If the trees can be moved from another part of the garden so that a ball of earth can be lifted with the roots, they may be planted up to 6 feet high with safety. Corsican Pine is the quickest growing variety of the Fir tribe. If the position is much exposed to wind the Austrian Pine would be more suitable. Although the latter is considered to be slower in growth than the Corsican, there is really not much difference if the soil is well prepared first—deeply dug and manured.—S. P.

—The Douglas Pine (Abies Douglasii) is very fast growing on fairly good soil. The Scotch Fir is also a fast-growing tree of a different type. Either of these would soon form a hind. I should not have too large ones unless I was quite sure they had been transplanted.—E. H.

4577.—Clematis Jackmani.—Almost any of the large flowered kinds, preferably of the patens or Jackmani type, would be suitable: Miss

France (bluish-purple), Jackmani (purple), and Lilacina floribunda (greyish-lilac), being very abundant in flower. C. moutana (white, flowering in May), is a very free-growing and floriferous kind, and the best of all for covering ngly walls, fences, or trellises of large extent is the common Wild Clematis or Traveller's Joy, which grows luxuriantly, not to say rampantly, in any soil or situation, and soon hides any unsightly object completely with a dense mantle of graceful foliage and flowers. A good dark-red Rose suitable for a cold-house would be found in Andro Schwartz or Madame de Tartas (Tea).—B. C. R.

GARDEN WORK.*

Conservatory.

Now that things are getting settled in their places a bit there is time to look round and see if any insects are present, and if a green-fly or thrips, mealy-bug or scale exists anywhere under glass, take no rest until the fact is exterminated. One thing may be noted. Fumigation, though destructively to green-fly and thrips, does not injure mealy-bug or scale; these latter insects must be attacked with the sponge and strong washes. A strong solution of soft-soap is as cheap and good as anything. Reduce the climbing growth as much as possible; all the light will be wanted now. Winter flowers, such as Hebe themnus elegans, Aubletias, Lapagerias, Trachelium Fireball, &c., will be allowed to develop; the last-named is a very useful winter-flowering plant, and may be allowed considerable freedom of growth. Basket-plants, especially Ivy-leaved "Geraniums," will still be effective. One of the best, if not the best, is still the old pink variety, Maree Creuse. With me it grows and flowers all winter in a warm-house. Zonal "Geraniums" specially grown for winter bloom will now be a special feature, but to keep in good condition they must have light and warmth as the flowers damp so much in a cool-house, but if kept growing in a slight temperature of 55 degs, with a corresponding increase during the day, they will continue to grow and flower all the winter, or, at least, till after Christmas. There are some pretty things in Salvia now, all of which are easily grown; Brunell, Fitzheri, and aurea are good. Sparmannia africana is a useful subject either for pot culture or to plant in the borders of large houses. Forcing shrubs and roots should be placed under cover now. A cool-house or pit is the best place for them for the present. Rhododendrons with buds may be lifted from the beds and potted, and be brought on kindly by-and-by. After Christmas we shall have to depend largely upon forced flowers; at present there are plants of forced flowers which have been naturally grown, and the Chrysanthemums will be a show of themselves by-and-by. Continue to give stimulents till the flowers are nearly expanded, then discontinue it. As Zuberous Begonias go out of blossom move to a cool-house and give less water to gradually ripen the growth. Fuchsias which are no longer effective may be taken out to a cool-house also. Show Pelargoniums must occupy a light position in a buoyant atmosphere to keep the foliage strong and healthy; this alone will deter insects from attacking them.

Stove.

Poinsettia will now be showing their scarlet bracts, and will be in full bloom. Cyclamen and other autumn-flowering plants will be coming on. Gardenias, Eucharis Lilies, and Begonias will add their quota to the beauty and fragrance of the stove. These plants which have done their season's work will require less water, so that they may gradually get rest. Among the latter will be Gloxinias, Achimenes, Caladiums, and the summer-flowering shrubs, including Clerodendrons, Alamanias, Ixoras, Dipladenias, &c. This work of resting should be a gradual process, so that the maturation may be perfectly carried out. Discontinuation is necessary. Gloxinias and Achimenes will be quite dried off; but the ligneous subjects must not be so dried as to injure the vital powers of the plant. We must not treat all subjects alike, or mischief will be done. Pancratiums are beautiful autumn-flowering bulbs, and are not difficult to grow well. As they go out of flower give them dryer treatment. Gesnerias will now be a special feature, especially the Onocnabites section. These are not difficult to raise from seeds, which should be sown early in spring in brick pans, and pricked off into pans filled with peat, leaf-mould, and sand as soon as large enough to handle. Among plants so able for dinner-table decoration are Crotons, especially the Angustifolius section, having long, narrow leaves, which fall over gracefully. Small plants of Asparagus plumosus are always useful, and the long, well-furled sprays are charmingly effective on the cloth, or to form arches across the table, and they are fairly long. Cyrtos alternifolius variegatus, and several of the light, elegant variegated Grasses, such as Eulalia japonica variegata, and the variegated forms of Carex japonica, will be found very useful. Among Palmes Coccos Weddelliana is one of the most serviceable, and it does well in the room. Kentias, agala, Euterpe edulis, and Geonoma gracilis are desirable plants to have in stock. Temperature should be steady now at night, 60 degs. to 55 degs. Fire-heat should always be associated with sufficient moisture in the atmosphere to keep down insects and secure healthy growth.

Ferns under Glass.

The advantage of cool treatment in summer will now be manifest in strong, hardy fronds that will set in a cut state, and such plants may be taken indoors without injury. Ferns are in many places too much shaded in summer to be of much use for indoor decoration. A few small plants of Lygodium scandens will be found useful for trailing about, and Geopelia Ferns, Davallias and others in baskets will always find a place, though they cannot easily be impro-

* In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.

vised. Mosses (Selaginellas) are now a very large family, many of which are very elegant when well grown, and are exceedingly useful in small pots or in small pans. It is not advisable to repeat specimen Ferns at this season, but young plants may be shifted on if it is desired. I am continually potting on seedlings and young stuff generally as room is found for them. I would rather pot on now than keep things starving in small pots all winter. Tropical Ferns will do new in a temperature of 80 degs, and greenhouse varieties will do in about 45 degs. to 50 degs. Ferns will bear more heat, but it is only wasting fuel.

Hard-wood Plants.

Among these is plenty of blossom in winter. Camellias will soon be coming in, and forced Azaleas are now showing colour. Heaths, Epacrias, Cherezamos, Correas, Genistas, Daphnes, Ericaceums, Lechoenanthias, Lonicas gratiolinas bloom naturally in winter. If I were a rich man I should be in vigorously for these hard-wood subjects. Our gardeners would soon get into the knack of growing them again. They went out of fashion when it was found they could not be treated to much account in brightening up the dark places of the house on party nights; but they are worth growing, even to look at when in bloom in the conservatory.

Cold Frames.

These will all be filled now with something or other. Seriously anybody desirous of these subjects portable frames, which can be made to be useful work either on a heap of manure or in a cold-house, are well worth the expense found useful now for sheltering Strawberries intended for forcing in pots. These should be plunged in ashes to the top of the rim of the pots, and sheltered with glass lights they will get all the rest they need, and be exposed at the same time to a free circulation of air.

Mushroom-house.

Mushrooms are now being gathered freely from open-air beds; but for a winter supply there should be a properly-constructed house, heated with hot-water pipes. It will not always be necessary to use fire-heat, but there should be the means of doing an if required. So much produce can be obtained from the Mushroom-house other than mushrooms, it should find a place in every garden. Not the most common, but the most useful, are the mushroom structure built as well as possible, where it cannot be much influenced by the summer heat or the winter cold.

Window Gardening.

The time has come now for clearing out window-boxes, and filling up with plants for winter and spring. I consider the shrubs used in window-boxes to be decidedly expensive from being too large. Small, well-grown shrubs, from 9 inches to 12 inches high, are more effective than larger plants, especially if the latter, which is often the case, are not so well grown. Common bulbs, Snowdrops, Crocuses, Lent Lilies, and Tulips, are charming to mix with the shrubs. Autumn-sown annuals make pretty masses in spring, and will come off in time for the "Geraniums," &c., and they have the merit of cheapness.

Outdoor Garden.

Alterations which involve the removal of shrubs and turf may be done now. It is true the soil at the time of working is very dry; but if before these lines are in type rain does not fall till the shrubs and trees have a good soaking of water a day before removal, and they must also be well watered during the process of planting, and generally fill the roots of the tree as shrub carefully in the hole, and partially fill it up, then give enough water to moisten all the soil; the remainder of the soil can be filled in when the moisture has drained away. If the holes are left upon till next day no harm will be done. No matter at what season the planting is done, it is important that the roots should be settled firmly in the soil, and I think water does this more effectively than pressure alone. I have seen several remarkable instances of the value of this system of planting during the present season. The trees puddled, if I may so term it, have done well, whilst others planted in the ordinary way have failed. The facerated roots of evergreen and other trees and shrubs should be placed in a position to commence repairing damage as early as possible, and placing them in contact with moist, firm soil is the best arrangement for that purpose. Tender bulbs and tubers should be taken up, dried, and stored away. The refuse to Dahlias, Gladioli, Tuberoses, Begonias, Marvels of Peru, Salvia patens, and Tigrids, Caenas, especially the new dwarf hybrids, are very useful for forcing, and, if covered deeply with litter, they may remain out all the winter; but the moulds of litter are usually very objectionable in a conspicuous position, so that usually the Caenas have to be lifted. I have kept them packed closely together on the floor of the orchard-house; but they may be kept quite safely in a cool-house where the frost is kept out. Outrage of evergreen shrubs will strike now in a steady bed, kept moist.

Fruit Garden.

Late Melons must have heat if they are to ripen properly; if no frames, a warm linax of manure will enable the plants to finish off the crop; but it is useless to think of growing good Melons after September 15th. They want more buoyant atmosphere than can be secured on a dung-bed. A small open-roofed house heated with hot water will produce good Melons up till November; afterwards they are of inferior flavour, and those who know what good Melons are will not touch them. Those who desire novelty in the way of dessert may grow the Geneva; the plant is an evergreen, and bears freely when some else has been obtained. The fruit commences to ripen towards the end of the summer, and continues through the autumn if not forced much. May be grown as a bush, but succeeds better trained within a foot or so of the glass, after the manner of Peaches. The same kind of border in which Vines or Peaches are planted will do for Guavas. Should heavy rain set in Strawberries in pots intended for early forcing will be better laid on their sides for a time, but should not be permitted to get drier dry; but plants in good-sized pots will not dry so soon now. It is a mistake, I think, to use smaller pots than 32 or 40 inches diameter for Strawberries. For late gathering 7-inch pots will be better. There is always the danger of the plants in small pots not getting sufficient water, and the fruit from a dried-up plant is useless. Root-pruning over-ripened plants may still be done, and Vines which are growing in sour, peaty borders should be lifted at once, and the roots be kept in a dry place till the foliage.

Vegetable Garden.

Take up and store Beet and Carrots; they keep best packed in sand. Parsnip and Salsify will keep best in the ground for some time yet. Late Potatoes will be better lifted now; store in rather small hills or clumps. There is a wonderful crop this year of the late sorts, and the tubers are sound for the most part. It is best to separate seed from the ware before storing. As regards saving the seed, there is much value in selecting from the most prolific roots. Like will, in a general way, produce like, and sets saved from a prolific plant will produce a heavy crop next year. Finish earthing up Celery when the weather is dry. Tie up Endives and Lettuces in succession to blanch; severe frost will do injury to both these plants when lolly grown, hence the success by protection in frames or placing a thick covering of dry leaves or Ferns over the plants when tied up to blanch. Beds of Lettuces and Endives have been kept in good condition a long time, when the space between the plants have been filled in with dry leaves, and a sprinkling of dry Fern scattered over to prevent the leaves scattering. This is a better and cheaper way of keeping full-grown Lettuces than lifting and planting in frames. If heavy rains set in after the plants have been filled in with leaves, draw a light waterproof cloth over the beds; oiled calico will do. Remove all exhausted Peas, Beans, and other crops, and trench at every favourable opportunity. The late hot summer must have taught the shallow cultivator a useful lesson. For vegetables the land cannot be too deeply stirred, and there can be no good culture without manure.

E. HORDAT.

Work in the Town Garden.

The interest of the gardener, amateur or professional, now centres itself chiefly in the Chrysanthemums, of which the blooms are in many cases fast expanding, and promise well for a grand display of colour shortly. After all the flowers will not be so very much earlier than usual,

pot. Spiraea, Deutzias, and other hardy roots for forcing should also be potted and plunged in ashes or fibre in a cold frame as soon as they can be obtained. Take cuttings of shrubby Calceolarias, inserting them in a cold pit or frame. Plant out Carnations, and fill vacant beds with Hyacinths and other Dutch bulbs.

B. C. R.

THE COMING WEEK'S WORK.

Extracts from a garden diary from October 14th to October 21st.

Pruned Vines in early house; the leaves were not quite all down, but the wood is very ripe and firm. The house will be thrown open now night and day till the middle of December. My first drops of Grapes are taken from pot-Vines, and these are now pruned and standing outside to give them as long and complete a rest as possible. The pot-Vines will not be started before the end of November, but they will be pushed on faster than would be desirable with permanent Vines, as, after fruiting, the plants will be thrown away. Mushroom-beds made outside in August are now coming into bearing. Open-air beds must be sheltered from heavy rains at this season; a waterproof cloth is the handiest thing, as it is so easy put on and taken off. The beds are covered with dry litter, and the cloth afterwards drawn over. It is absolutely necessary to keep off cold rains at this season and onwards through the winter. Beds are being made up in the heated Mushroom-house now, so that it will not be necessary to make up more beds outside. A well-constructed Mushroom-house is very useful for forcing other things besides Mushrooms. The greater part of my Sankale and Rhubarb are forced in the Mushroom-house, and there is no better place for blanching Endive, or Dandelions quickly or forcing Chionodoxa when the Endive gets scarce. I have forced early Asparagus in the Mushroom-house, moving it to a warm house to get colour and flavour. I have just

PLANTAIN LILIES (FUNKIAS).

THESE are hardy perennials of the handsome type, and it is not alone for their bell-shaped flowers that many cultivate them, but also for the characteristic foliage, which in some kinds is as massive and noble as that of a tropical plant and in others delightfully variegated. The Plantain Lilies are liliaceous plants, and are very effective when planted in large clumps, as we may sometimes see them in the London parks and gardens. Nothing could be more striking or tropical in aspect than a mass of F. Sieboldi, which is represented in the accompanying engraving, and clumps on the border, and higher and rougher parts of the rockery have a peculiarly beautiful effect, as much from the silvery glaucous colour of the leaves as from their width and vigour. The several varieties that have variegated leaves are also exceptionally pretty in small groups, as edging to large beds, or for the margin of the rockery. At Kew the variegated kinds are planted with admirable taste on the rockery, where during the summer their variegated leafage of white and green is conspicuously handsome. There is no garden but can find space for either a clump of the hold-growing plain-leaved type or the variegated forms, and the latter may also be potted up for the enrichment of the greenhouse with advantage. One point is easily overcome, and that is the cultivation. A well-drained, deep soil will grow the finest specimens, and if an increase of stock is required, the simplest way is to propagate by division of the crowns in winter or in the spring. The latter season is the best, just when the plants are commencing to make new growth. It is scarcely necessary to add that only well-established thoroughly healthy clumps should be divided, and then they should not be split up into single crowns.

F. Sieboldi is one of the best known and most striking of all the Plantain Lilies, the accompanying engraving of it showing its character remarkably well. It grows from 18 inches to about 3 feet in height, and has very large heart-shaped glaucous leaves that measure quite a foot across. The flowers are white, tinged with pale lilac in colour, and borne from ten to fifteen in tall racemes. This noble species came from Japan in 1836.

F. GRANDIFLORA is an exceptionally beautiful Plantain Lily, and should be extensively grown for the sake of its spikes of snow-white deliciously fragrant flowers. The large hold leaves, as broad as those of Sieboldi, and delicate pale-green, make this one a strikingly handsome plant without the flowers. On light warm soil it does well and even blooms satisfactorily, but usually the flowers are cut off by frosts, and it is thus necessary to grow the plant in pots to obtain it in its full beauty. Tufts of it in well-drained beds and borders are not common in English gardens, but it may be grown in this way, and in Paris it is used with much excess. I advise Funkia grandiflora to be grown freely where flowers of sweet scent and delicate colour are required in autumn. It is the same as F. japonica.

F. FORTUNEI is a very robust species, growing about 1 1/2 feet in height. Its leaves are smaller than those of Sieboldi, and they have a distinctive bluish or glaucous tint. Another handsome species is F. subcordata that has several synonyms, as Hemerocallis alba, H. cordata, H. japonica, and H. plantaginea. It is an August flowering plant, with heart-shaped leaves about three quarters of a foot long and 5 inches broad. They are glaucous on the upper surface, but pale-green beneath, and have large prominent ribs than in Sieboldi. The growth is quick, and a spreading clump in a garden is magnificent, as the noble leafage is very dense and handsome. There are two variegated varieties, marmorata and argentea, that are prettily marked. F. ovata is the commonest of all; it is an old garden plant, and found in China and Eastern Siberia, besides Japan. The leaves are broad, rich-green, and the flower-stems about 1 foot or more in height, the colour of the flowers being white, tinted with lilac. It is a robust grower, and soon makes a spreading mass. Those who use for variegated foliage will find the variety marginata, in which the leaves are distinctly margined with white, a good type of its class.

F. LANCIFOLIA is the species that may be



Siebold's Plantain Lily (Funkia Sieboldi).

though in this respect there is a good deal of difference. One effect of the extremely hot and dry season is seen in the comparatively short growth of the plants, and another that in many cases where the supply of water has not been as liberal as it should have been is the bare appearance of the lower part of the stems, owing to the leaves having fallen. As long as the weather remains mild free ventilation must be given, and a gentle warmth should be maintained in the pipes—by night, at any rate—in order to dispel damp, which otherwise is sure to be troublesome. The larger, fuller, and more perfect the flowers the more liable they are to injury from damp. Many of the best Japanese varieties expand best with the aid of a gentle warmth, but the cooler the incurved flowers are kept the better, so long as the petals remain dry; these must also be kept comparatively close to the glass, or they will not expand well. Of course, all must be given freely on all fine mid days, and the watering be carefully and regularly performed, this being best, or chiefly performed in the forenoon. Too little moisture at the root will be less injurious than too much now that the plants are housed. When grown expressly for show purposes backward blooms may be hastened to some extent by the use of a moderate degree of heat, and also by the judicious employment of quick-acting stimulants, such as sulphate of ammonia. Others may, if necessary, be retarded by keeping them cooler, with plenty of all day shade from sun. Keep all suckers removed from the base of the plants until the blooms are fully expanded. In the case of new or scarce kinds they should be inserted as cuttings, if only for stock purposes. No time must now be lost in getting plenty of Hyacinths, Tulips, Narcissus, and other bulbs potted or boxed, as the case may be. For supplying out flowers it is a much better plan to plant all such things thickly in boxes 4 inches or 5 inches deep in any good light soil. They occupy far less room than pots, and are easily carried from place to place. Such boxes must be well covered up with ashes for six or eight weeks in the same way as

about finished earthing up the late Celery. I like to get this work done during October; after the soil gets wet and sticky the work cannot be done so well. Took up Carrots and Beet; all late-sown Carrots, and which are still growing, will be left in the ground, and be covered with dry Ferns about frost set in. A layer of dry Oak-leaves, if they are down in time, will be placed under the Ferns. I find these Oak-leaves very useful for sheltering many things when dry Fern is placed over them to prevent the wind blowing them about. Pricked out August-sown Cauliflowers in cold frames; shall give all the air possible when not wet or frosty by drawing off the lights. Violet-frams are served in the same way when mild and not damp. A close, stuffy atmosphere is not good for anything. Looked over late Grapes frequently, and if a decaying berry is noticed it is at once removed. Dead leaves are also promptly gathered up, and every stray leaf or shoot which is near the glass, and which is likely to form conductors to the moisture condensing on the glass, are removed. Grape-growers know the mischief done in this way when the Vines are trained near the glass. Everything in the vinery should be sweet and clean, and if the Grapes are to hang long plants should, as far as possible, be kept out. I never bottle Grapes till I want to prune the Vines. Busy clearing beds in flower garden, and filled up with spring-sowing things. There is no lack of variety in the plants which may be pressed into the service of the spring garden; even the amount to be expended is small. To make a large display of bulbs costs money, but Wallflowers (yellow and red), Forget-me-nots, Daisies, and Primroses are cheap, and these I use largely. Just finished housing the Chrysanthemums. The early varieties have been under cover some time, but it is desirable to keep late sorts as long as possible; but when plants are exposed to sharp frost the buds suffer and the flowers cannot be so fine. Transplanted evergreen shrubs and turfed over the borders which surround the beds of shrubs; but all the bulbs in the borders will be left to grow as they please.

recommended for the fronts of beds, borders, and rockeries, as it is a small-growing plant, the leaves each about 4 inches long, sometimes more, and only measuring about 2 inches wide; they narrow considerably towards both ends. The raceme of flowers is comparatively short, and does not stand up boldly and gracefully as in the other kinds. Of *lancofolia* there are two beautiful variegated varieties which should be grown. These are *albo-marginata* and *undulata variegata*. In the first of the two the leaves are margined with white, and in the other the edge is wavy and the leaf distinctly variegated.

The above-mentioned species and varieties comprise the richest gems of this genus. I may add one thing more, and that is the suitability of the noble *Sieboldi* for town gardens. For years there were two wooden tubs which stood in a front garden in Holloway, each containing a magnificent clump. Although exposed to the dust, dirt, and heat of a London garden, the leaves were as broad and rich in colour as in the choicest specimens grown in the pure air of the country. D.

ORCHIDS.

HARDY LADY'S SLIPPERS.

This section is scarcely less beautiful than that containing the tropical species, from which the hardy kinds are readily distinguished by their herbaceous habit. One of the freest and most vigorous of the whole group is the white-flowered rosy-lipped *C. spectabile*; and *C. pubescens* and *C. humile* seem to do much better than any of the others, if we except *C. Calceolus*. The majority succeed tolerably well for a year or two in a cool, moist peaty compost; and, if grown in pots, they should be plunged in a cold frame with a northern aspect, and protected from the mid-day sun. *C. spectabile* may be planted out in a border of peat and leaf-mould where it will flower several years in succession if kept regularly moist and cool at the root. *C. Calceolus*, on the other hand, prefers a strong chalky loam with an eastern aspect, sheltered on all sides from rough winds and sun. If these hardy Lady's Slippers are grown in pots, they should be well drained, as has just been recommended; and, if syringed every morning, so much the better. The pots should be surfaced with fresh green Sphagnum to prevent undue evaporation from the soil, such surfacing also keeping the soil cool by acting as a non-conductor. The roots should never be allowed to become dry, even in winter—an evil to which may be attributed the loss of many of these interesting plants. A collection of these hardy species, planted in a peat border outside at the back of a Heath house, used to grow well in Messrs. Rollinson's nursery at Tooting. During winter and spring they were protected by a layer of Sphagnum 2 in. to 3 in. in thickness. The following are the kinds usually grown:—

C. CALCEOLUS (common hardy Lady's Slipper).—This is one of the rarest, and also one of the most beautiful, of our native Orchids. It grows about a foot in height and bears one or two showy flowers at the apex of the strongest leafy stems. The sepals are of a deep purple tint, the petals being narrow and tapering with wavy margins. These are also of a purple colour tipped with yellow at their apices. The lip is rounded or swollen, and being of a clear golden-yellow colour, contrasts well with the dark sepals and petals. It is found in woods in Russia, Asia, and Eastern Europe and the Arctic Circle, but is more sparingly distributed over Western Europe; in Britain it is almost, if not quite, extinct. One of the best-known habitats of this plant was Castle Eden, Dean, Durham, and it has also been found in Yorkshire. According to Thunberg, it is also a native of Japan.

C. PARVIFLORUM (Small-flowered Lady's Slipper).—This has been more than once referred to the last-named species, from which, however, it is readily distinguished when both are seen side by side. The plant is similar in size and habit, but the lip is larger and distinctly flattened or even depressed in front, and the flowers are also delicately perfumed. The sepals are of a rich chocolate-brown colour, while the slender, wavy, or twisted petals are green at the base and streaked and spotted with dark brown. The lip is of a clear yellow colour, with a row of

crimson or reddish dots around the mouth. The leaves are of a fresh apple-green. It is a native of Canada and probably of North America.

C. PUBESCENS (Hairy Lady's Slipper).—This is a free-growing species, both stem and foliage being covered with whitish hairs. It is very distinct from both the last-named kinds, and grows well treated as a pot plant in a shady cold frame. The sepals are of a creamy yellow colour, striped with bright red; petals narrow, very much twisted, also yellow streaked with red, while the lip is of a clear golden tint. In shape the flower reminds one of that of *C. Calceolus*, but it is readily distinguished from that



Flower of *Cypripedium gottatum*.

species by the yellow sepals and twisted petals, and also by the flower being scentless. It is a native of North America.

C. TRAPEZANUM (Pelican-flowered Lady's Slipper).—This is a very fine large-flowered species. In shape the flowers resemble those of *C. spectabile*. They are fully 4 inches or 5 inches across the fully-expanded segments, and are borne one and two together on the leafy stems. The colour is a bright golden-yellow throughout, and the lip is blotched within with bright reddish-ochraceous, and in shape reminds one of some of the large-flowered *Calceolarias*. It is a tender species. It requires plenty of water at the root when growing, and an airy atmosphere suits it better than a close one. It is a native of the Savanahs, or great natural meadows of Upper Mexico, where it is found at an elevation of from 2,000 feet to 5,000 feet.

C. MACRANTHUM (Large-flowered Lady's Slipper).—This grows from 6 inches to 12 inches in height, and bears one or two rosy-purple flowers at the apices of the stems. The petals are striped, and the lip, which is inflated, is distinctly netted with dark veins. It is a native of Siberia, and is well worth general culture.

C. VENTRICOSUM (inflated Lady's Slipper).—This is another rosy-purple flowered species, much resembling the last in general appearance, but easily distinguished from it by the petals being shorter than the lip, a very unusual occurrence in this genus. The lip itself is shaped like that of *C. macranthum*, but it is of a much deeper colour. It is a native of Siberia.

C. SPECTABILE (Showy Lady's Slipper)—figured on page 445—is a very beautiful hardy species, and one which succeeds well planted out in a cool peaty compost, sheltered from the midday sun. It also makes a splendid pot plant plunged in a cool and partially shaded frame. The stems rise from 1 foot to 18 inches in height, and bear from one to three large flowers at their apices; both leaves and stems are covered with short white silky hairs. The flowers, which each measure about 3 inches across, are of pearly whiteness, the rounded lip being suffused with bright rose around its mouth. It is a native of the United States and North America, and should be grown in every collection of moisture-loving hardy plants.

C. GUTTATUM (Spotted Lady's Slipper).—This charming little plant resembles *C. acule* in habit, but has snowy flowers blotched with purple. The whole plant is only a few inches high, its short stems being two-leaved. It is a

native of Siberia, North America, and Northern Russia, where it grows in swamps and spongy bogs.

C. CANDIDUM (Milk-white Lady's Slipper).—A pretty little species, similar in habit to *C. spectabile*, growing about a foot high, and bearing a solitary flower at the apices of its leafy stems. Its sepals and petals are white or greenish-white, more or less streaked and shaded with pale brown. The lip, which is inflated, is pure white. A native of boggy marshes, and extending into Canada to the northward, and to the Plateau and Rocky Mountains to the west.

C. ARIETINUM (Ram's-head Lady's Slipper).—Botanically, this is remarkable as being the only species with free lateral sepals, and this character serves to distinguish it from all the other species at present introduced. The lip tapers from the mouth to a blunt point, the colour being white, curiously chequered with bright rose, like some of the *Fritillarias*. The upper sepal is ovate, the lower sepals and petals being nearly linear, of a dull green colour streaked with reddish brown. The flowers, which are solitary, scarcely measure an inch across and are not showy, although the plant is worth culture where variety and botanical interest are appreciated. Native of Canada.

C. ACULE (Stainless Lady's Slipper).—This is one of the commonest of hardy Lady's Slippers, and is frequently met with in good collections of hardy plants. Treated as a pot plant in a cool frame, it does remarkably well, and blooms freely every spring along with *C. Calceolus*, *C. spectabile*, and *C. pubescens*. It grows well in an open compost of spongy peat, and, like its congeners, must have a copious supply of water at the root. The whole plant is 6 inches or 7 inches high, having two broad green leaves at the base and a solitary nodding flower, borne on a slender scape. The lip is rosy-purple, netted with darker veins and curiously folded inwards in front. It is sometimes known as *C. humile*. J.

LELIA PURPURATA.

I AM requested by "G. Watson" to give him some information about this species; he says that after flowering it has now again started into growth, and is rooting very freely. Well, this is just as I have found them to do with me, and it is what I like to see them do, because now is their season of growth, and therefore these plants, which are unlike *C. Downiana*, and its variety *aurea*, and the *C. gigas* set, do not require to be kept quiet; at the same time, they require to be nursed along carefully and not forced, and they will move but slowly until the turn of Christmas. These plants should be moved into a position in the house where they will get about 5 days more heat than the other occupants of the Cattleya-house; they will also require more care in the way of watering, taking particular notice not to use the syringe to these plants at all, or the water will run down the stems and get into the shoots under the sheaths, and work great havoc amongst the young shoots; but during the beautiful bright sunny days which we are getting now through the month of October the stages between the pots may be kept nicely moist, and do not let them get dry at any time during the winter, but keep the plants in a happy, comfortable state, and they will go on quietly and swell up their growths, finishing them off in the early spring and making a sheath in each, from which will issue their beautiful blooms.

MATT. BRANBLE.

ONCIDIUM TIGRINUM.

This beautiful flower is called by the natives of Mexico the "Flower of the Dead," which was given it by the Spaniards that invaded and overran the country, and who used it for funeral purposes; but "Mrs. Duncan" will not take it amiss that the name is used here in connection with a plant she writes to me so pleasantly about. She says she has three plants, which she has grown quite cool, and she has now five spikes of flower showing upon them. These plants have been grown for nearly two years past in hanging-baskets near to the glass, and have had plenty of water; and now "Mrs. D." says how shall she treat them, that they have apices showing? Must she withhold water and rest them? Certainly not, and no Orchid that is coming into flower, springing into new life, wants to be

put to rest and dried up, and to speak the truth this is a plant that does not require drying at any time, and the fact of its having large bulbs does not afford any clue to its being used to it naturally, and the largeness or the reverse of the bulbs of any Orchid, I have come to the conclusion, has nothing to do with its waste and requirements. This plant comes from various parts of Mexico, and it thrives admirably in a cool-house; but it likes an abundance of fresh air, which is a point I should like to say a word upon, as in several gardens this season I have forced the air of the Odontoglossum-house close and stuffy, and nearly as hot as the Cattleya-house seed bed. Now in all these places the Odontoglossum have not thriven well. The plants have thin leaves and poor bulbs, and when the flowering season comes round I fear they will show a still greater falling off, and the usual outcry from the parties treating their plants in this way has been that the heat was so great that it would have hurt the plants so to admit air, which, to some extent, was true, no doubt; but this could have been avoided by reducing the quantity of air admitted and increasing its moisture by damping down the stages and the floors more frequently, and by having the house shaded with a raised blind. This is an invaluable aid to keep the house cool in hot weather. Then, again, the Odontoglossum would have been greatly benefited by increasing the ventilation through the summer nights, for I am greatly opposed to the system of shutting the houses up close when night comes round, for it is like wishing to teach me that the plants live naturally for half their existence without air, and I did for years have ventilation upon my Orchid-houses at night, except upon a few exceptionally severe winters, when air was only kept from the plants by necessity. Some of my fellow-growers used to laugh at me, but my plants showed their appreciation of the treatment by flowering better, and by always having a cheerful appearance. But to return to my subject of consideration, the *Onclidium tigridium*, which was first brought to this country by Mr. Barker, of Birmingham, more than fifty years ago, and it was named by Lindley after its introducer. It remained a scarce plant for some time, but then our houses were kept hotter and the plants were subjected to a regular system of resting, which did not encourage their growth, and the plant became nearly extinct. To Mr. Sander, however, we are indebted for its re-ascertainment, and now we know that it does not require more heat than the Princess of Wales *Odontoglossum*, and that it does not require any dry season. It should be thoroughly drained—indeed, this is the great feature in plant culture—using for soil good brown peat-fibre, mixed with chopped Sphagnum moss, pressed down firmly.

MATT. BRANBLE.

HOUSE & WINDOW GARDENING.

4573. — Azaleas in a window. — Azaleas are not good window-plants unless treated very carefully, for the reason that window gardeners do not understand that the plant must make a certain amount of new growth every year, and which must be well ripened, or it will not form flower-buds. The best treatment after it has flowered is to keep it inside the window until the new-made growth is an inch or more in length, and remain there until the flower-bud is quite prominent. Until this is seen it is not right to put the plant outside at all. After this date it is not safe to leave them outside at night, and only in the day when it is warm. When I tell you that the Azalea is a native of India you will understand that it requires rather warm treatment.—J. C. C.

— If the Azalea is of the Indian section by all means bring it indoors at the approach of frost; it will be all right for the winter in the window of any room where no gas is burnt, and where frost cannot easily enter. The dry heat of a kitchen would be injurious, and dust and draughts should also be avoided. Take care that the soil and roots do not become very dry at any time, but at the same time no water should be given as long as the soil remains moderately moist.—B. C. R.

4604. — Marguerites for a room. — Both Yellow and White Marguerites can be grown in a room without gas during the winter, but the

plants should first be planted out in the border during the summer months, when they become very strong, and are covered with buds at the present time. They should then be cut round with a small sharp spade at a distance of 4 inches or 5 inches from the stem of the plant, and a week later carefully raised and placed in a good-sized pot, with plenty of drainage and rich, light soil. The plants should then stand on a bed of ashes against a north wall until they have lost all inclination to droop (well watered if the weather be dry), when they may be lifted into a sunny window, where they will bloom for months. But if "M. Y. L.'s" Marguerites are in pots already, and have exhausted the soil, they might receive a shift now, giving them a good fresh compost of loam and leaf-mould, with a little soot and sand, and if allowed to stand in the open air to harden, until sharp frosts make their appearance, they would be all the better for it, and will probably flower well in the spring if they only bring a few blossoms now. Nearly all room plants should stand out-of-doors for three or four months in the later summer; the weakening effects of room culture can thus be minimized, and they will have a chance to ripen their wood and become hardy, for no plant can blossom well with soft, sappy growth. If the Marguerites are leggy and untidy, it is best to propagate them by cuttings early in the year (or even now), covering them with a bell-glass for a few weeks, or placing the pots of cuttings in a box, standing on a layer of damp ashes, covered with a piece of glass. They are easily struck in this way, and if potted on, and given plenty of fresh air and sunshine, will make neat little plants in the spring. They should be pinched back a few times, and not allowed to bloom until they are about 10 inches high, when they should make handsome, bushy little specimens.—I. L. R.

4594. — *Aspidistra lurida* (the Parlor Palm). — This is one of the best of room plants, flourishing under conditions which would kill most other plants, even standing a certain amount of gas in the air. It needs, however, constant care to keep its broad leaves clean

the surface-soil is really dry; then enough should be given, in a warm, to run through the pot, the cancer being emptied half an hour afterwards.—I. L. R.

4671. — Window plants. — Most of those mentioned may be preserved very well in any spare room to which more than a few degrees of frost gains entrance. Do not cut them down now—it is too late, but expose them freely to see and fresh air for a time, and they will be safe enough. Very little water will be required—in fact, the less the "Gardeniums" get the better, at least in very cold weather, Fuchsias must not get too dry, or the wood will shrivel and perish. Spiraeas are hardy, and will be all right if plunged in and covered with ash or a sheltered corner out-of-doors. The Hydrangeas also are nearly hardy and may be safely wintered in the frame.—B. C. R.

4656. — Spring bulbs. — The object of plunging pots of bulbs in ashes is a twofold one. In the first place, the weight of ashes over the bulbs prevents the roots lifting the bulbs out of the soil, which in the case of Hyacinths would certainly happen. Again, when the bulbs are plunged in ashes or Cocoa-nut-fibre, they are in a suitable position to make healthy roots without starting the tops, and this also in the case of forced bulbs is an advantage. A dark cupboard is not a bad place for bulbs where they cannot be plunged outside; but there should be no artificial heat, the cupboard should be cool.—E. H.

— For this purpose the ashes should be used just as they come from the grate, with only the large cinders sifted or picked out; never mind about the dust. The pots are to be plunged in the ashes, and then covered with the same to a depth of full 8 inches above the tops. Here the pots must remain, in a cool place, but protected from heavy rains, until they become full of roots and the bulbs begin to push into growth, which may be seen by examining a few now and then. If you put them in a warm and dry cupboard they will start into growth



The Moccasin-flower (*Cypripedium spectabile*), in the rock garden. (See page 444.)

when grown in a city, for no plant can do well when its pores are clogged with dirt. *Aspidistras* do not often need repotting, but when it becomes necessary it should be done in April, so as to give the slow-growing roots the summer in which to make their fresh start, and the best soil is a compost of peat, leaf-mould, and loam, in equal quantities, with enough silver sand to make the whole light. But these plants will grow in any ordinary potting-soil (not requiring measure), with good drainage and proper watering. They do not require strong sunshine, and may stand for some time away from a window without being injured. Water should only be given to all room plants when needed—i. e., when

before any roots are formed, and the flowers will come to nothing. These are hardy subjects, and must be kept in a cool dark place during the early stages, and brought into heat (if required) after the growth has commenced.—B. C. R.

4670. — Plants for next season's blooming. — You had better buy good plants of the various things mentioned, and they are not expensive; otherwise you will not get good specimens for blooming next year. You may plant any or all of them now, except the Pentstemon, which should not be put out until the spring; as they are not very hardy, getting much cut up in severe winters.—C. T.

OUTDOOR PLANTS.

A GARDEN IN VENICE.

PRIVATE gardens of any extent are almost unknown in this beautiful city of waters, and though some of the larger houses have attached to them a court-like enclosure where grow a few Oleanders and Cypruses, yet such small spaces do not satisfy the English craving for a real garden. An English resident, Mr. F. Edan, living in one of the fine old palaces on the Grand Canal, had the happy idea of buying a piece of ground of some acres on one of the adjacent islands. It was already well furnished with a luxuriant

parts. A good Grass lawn has also been made, and an artesian well been sunk; this is a most important improvement, as it yields an abundant supply of good fresh water, whereas formerly water had to be brought in large-loads from the mainland.

PERGOLAS, OR CREEPER-COVERED WALKS.

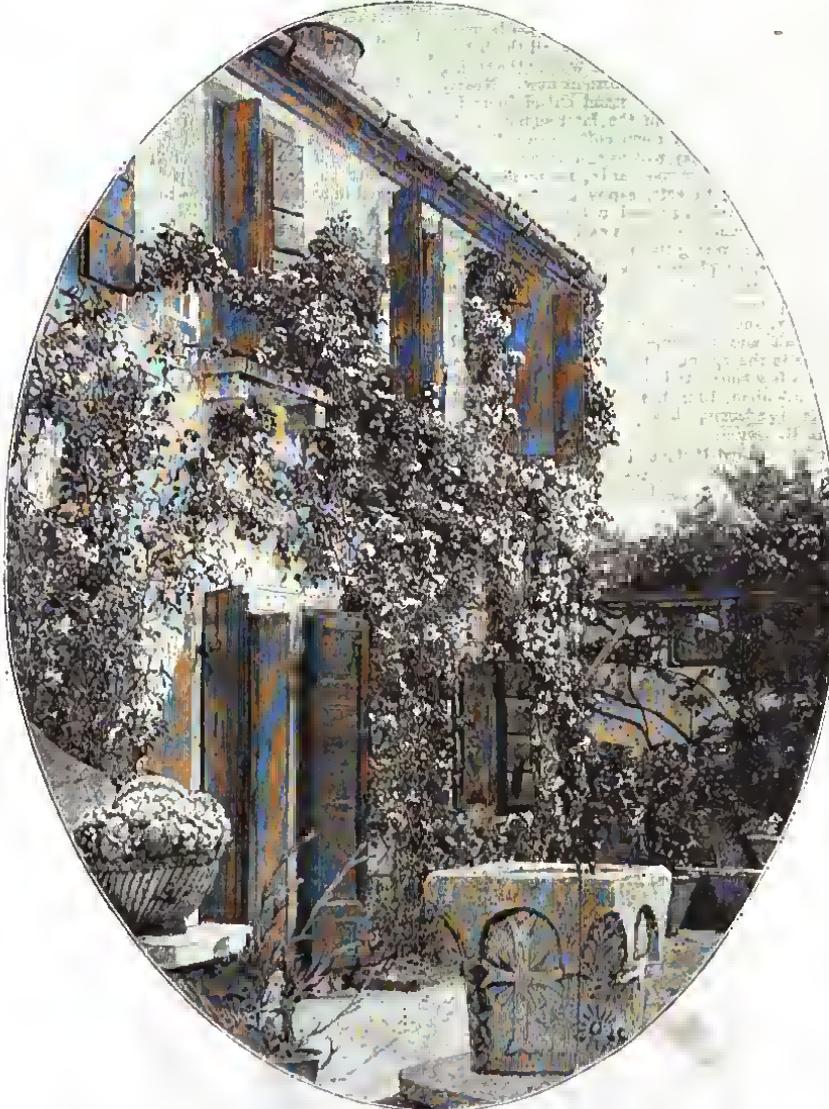
In Italy and other parts of the sunny south one often sees in gardens the pergola, as the creeper-clad arbor or walk is called, and which generally serves the two-fold purpose of supporting the Grape-Vine and affording pleasant coolness

tissima, Periploca græca, Clematises, Honey-suckles, Bine Passion-flowers, Bignonia radicans, and B. grandiflora, Scarlet Trumpet-flower (Lonicera sempervirens), and other beautiful climbers—which formed the most delightful retreats in flower-time, and were always cool and shady in the hot summer season. But these seldom occur outside the rich gardens of the great villas, and usually near humbler dwellings the pergola is a simple structure made for the purpose of supporting the Grape-Vine. The

PERGOLAS, like the stately fountains, are in Italy quite appropriate to the country and the climate, but they are rarely necessities in our English climate, though adaptations of the pergola if simple and unpretentious would add to the delights of many an English garden, even if we seldom feel the want of a shady bower at midsummer. A creeper-clad trellis spanning a frequented walk is a most desirable feature in a garden, as it is a contrast to the open breezy parts, and not only this, it serves as a suitable place for growing the multitude of beautiful hardy climbers we have now at our command, and which can only be seen when rambling over trees, trellises, or along the tops of walls. Some little consideration is required in deciding upon the most appropriate place for a covered way. It should lead to somewhere and over a frequented walk, and should not be erected where any line of view would be interrupted, or too prominently in view, that it is always in sight from the house, and if it can be placed so that a stranger would come upon it unawares so much the better. The breadth, height, and length are points for individual taste and circumstances to dispose of, but if flowering creepers are desired to cover it, it must not be placed under or near the shade of big trees, especially such as Elm, whose hungry roots would travel a long way to feed upon the good soil that the creepers must be planted in. The form of the structure must also be governed by circumstances and individual taste. A simple structure is the best; the supports should be Oak-tree stems, about 3 inches in diameter with the bark on, let into the ground about 2 feet; if on a bed of concrete the better. The posts must be connected and firmly secured to each other by long pieces of similar size and running along the sides, while the top may be formed of small pieces fixed transversely across the top. This will make a more massive and firm structure, and the simpler it is kept the better it will look. On no account let the rustic wood carpenter begin to adorn it with his fantastic branches, which he is usually so fond of doing. If a more polished structure is desired, the supports may be round, square, or hexagonal, and the roof made of diagonal trellis-work of Oak or Teak with the meshes about 3 inches across, and instead of being flat it may be gently curved. Such a structure would be appropriate close to the house where it could be looked down upon. On a close trellis the creepers do not festoon themselves beneath it or flower so freely as in the open cross-piece trellis. Some, no doubt, may like a variety of

CREEPERS on a trellis, but I like to see it covered with one or two, such, for instance, as Laburnum and Wistaria, which flower together and look beautiful in June, and never give a dense shade. Climbing Roses would cover another, Honeysuckles another, Jackman's Clematis and C. montana a third, and so on. In warm parts one could have the pergola covered with the lovely white Solanum jasminoides mixed with Passiflora scerulea or Tecoma grandiflora. The various Honeysuckles, especially the Scarlet Lonicera sempervirens and L. brachypoda, would go with the Sweet Jasmine (J. officinale), and up the pillars may be trained the yellow winter-flowering J. undiflorum, Forsythia suspensa, Cydonia japonica, Escalonia macrantha, Myrtle, Garrya elliptica, Chimonanthus fragrans, Berberis stenophylla, and others, though not strictly climbers, would drape the supports of a pergola. There is such a number of climbers to choose from that the difficulty is to make the best selection. Care should be taken not to choose any doubtfully hardy plant, for it is annoying to find that after a severe winter a blank space has to be recovered.

W. GOLDRING.



House in a garden at Palazzo Barbarigo, Venice. Engraved from a photograph sent by Mrs. Eden.

growth of Vines, Figs, Mulberry and Cherry-trees; but much had to be done, and now, after some years of judicious planting and expenditure, it is a beautiful and delightful garden, and an unfailing source of interest and enjoyment to its owners. The best flowers have been introduced from English and other gardens, and nearly all take kindly to the soil, which is formed of the rich, reclaimed mud of the lagoons. White Lilies are a special feature, and grow in great masses beside the walk under a pergola of Vines, as shown in the illustration (p. 447). Roses are equally luxuriant, and are freely trained on the high wall of a building that bounds the garden on one side, and on the little house (as well in the engraving as well as in nature in other

during the summer heat. As a rule, these pergolas are rude trellis-work structures of wood, sometimes supported by stone where this is at hand, but more often the supports are of rough tree-stems, as shown in the cut on p. 447, which illustrates how a thickly-covered pergola is used to give the necessary shade to the Madonna Lily (Lilium candidum) in a climate where full exposure to an almost tropical sun would be detrimental to it. In the gardens in the neighbourhood of Rome, Naples, and Florence I have seen some beautiful examples of the pergola—stately structures, the supports of which were massive columns of stone covered and festooned in a beautiful way, with such as Sanguinaria, Wistaria, Pergolias, and

1893. Making a tennis-lawn.—The lawn selected for the court should not be less than 50 feet long and 40 feet wide. When the

court is smaller it is of little use, as there is considerable wear and tear, especially if the Grass is much played upon. The site should be as level as possible, as if there should be only 6 inches difference between the levels of the top and bottom ends of the plot, it will not be necessary to make a true level, but only to smooth the ground by forking it up and raking it. Then if a tight line be drawn from corner to corner, any slight irregularities of surface will be at once seen, and must be then corrected. If, however, the plot of ground be very uneven, proceed in this way: First find the centre of the plot, and then drive in a very stout stump of wood, the top of the peg being on a level with the ground. This is the key to the whole work. Then drive in other pegs to the corners of the lower end of the plot, the top of each peg to be on the same level as the centre or main peg. Now from the centre dig out a drift to each of the top or higher corners of the lawn, and put pegs in every 6 feet or so, preserving the same level all the while. This spare soil will be wheeled to the lower level, and spread over the ground to the tops of the pegs, and then well

is past it is better to wait till spring, and during winter get the land thoroughly cultivated and, if necessary, manured. To get a good turf quickly sow thick. I should sow a peck and a-half of good seeds. Ashes will hardly be necessary on a gravelly soil. Ashes are useful on damp soils to keep down worms, but on dry soils I should not use them.—E. H.

4579. — **A new garden.**—There is no need to destroy the worms; but if they become a nuisance there is nothing better than a good dressing of quicklime dug in now. I should, if it is thought necessary, put on a dressing of manure after the lime has been forked in, and if the surface of the soil is rough, and the manure short—as it ought to be—most of it will disappear during the winter. Lime is excellent for fruit-trees—in wet soils especially so.—J. D. E.

— The best way of getting rid of some of the worms in your garden is to keep three or four fowls in a movable run, changing the run every day, stirring up the soil previously to moving the run. Do not feed the fowls for some time after they have been given the

vigorous. The month of November is a good time to apply manure to fruit-trees. If the trees last year made sufficient growth it is a good plan to mulch the surface for 2 feet around the stem of hush fruits with partly decayed manure after the fruit is set. In the case of Apples or other large fruit the manure should extend fully 3 feet from the stem. This mulching prevents the evaporation of moisture and keeps the roots cool during hot weather, thus inducing them to multiply, which is what is required. If slugs are troublesome, or the ground heavy and retentive, a dressing of lime on the surface will be good.—S. P.

4676. — **Carnations in a smoky district.**—The arrangement described will answer perfectly as far as the Carnations are concerned. There must, however, be ventilators in the roof as well, by means of which to admit air when the weather is too cold or rough to admit of the slides being opened. Where there is much smoke about, lifting ventilators, hinged at the top, are superior to such as slide open, as they do not allow of the entrance of smuts, like the latter. Roses are very "kittle-cattle" in a



OUR READERS' ILLUSTRATIONS: Pergola with White Lilies underneath at Palazzo Barberigo, Venice. Engraved for GARDENING ILLUSTRATED from a photograph sent by Mrs. Eden. (See page 116.)

rammed or trodden down. Now fork up the hard ground lightly on what was formerly the higher level, and spread part on the lower half. Then well tread it all over, and smooth with a straight edge. Drains are generally unnecessary, but where they are absolutely required, and the soil is stiff clay, put them in not deeper than 6 inches. Above the pipes put a few inches of Gorse or Heather, filling up with fine soil to the level of the surrounding ground. Procure the best turf obtainable in the district. Do not trust to grow seed. Well roll or beat the turf as soon as it has taken root, not before, as is often done. The ground surrounding the lawn must be brought down to as gentle a slope as possible, and must also be turfed, being treated in the same way as the lawn. As to coat, every thing depends upon the nature of the soil and weather experienced during the progress of the work.—G. T.

— It is rather late for sowing Grass seeds now. If it was mild up to Christmas they would be all right, but even then the weeds might get a start. I always think Grass seeds do best if sown when the conditions are favorable for immediate growth, and after September

change of position, or they will not take the trouble to search for food. I would, however, prefer to have a garden with plenty of worms in the soil than without them. If there are no worms, you may be sure the ground is too poor to induce them to stay. Autumn is the best time to use manure in your case.—J. C. C.

— The presence of worms in the soil is not detrimental to the garden at all. For vegetables, directly any crop is cleared the soil should be trenched 18 inches deep, if not already done, taking care to keep the surface soil on the top. The advantage of deep digging has had abundant opportunities this year of manifesting the wisdom of the practice. Soil deeply moved retains the moisture much better than that which is shallow. The advantage of digging the ground now is that of exposing the surface to the weather so much longer. If manure is available, as it should be for the main of the vegetable crops, especially for all of the Brassica tribe, it ought to be buried now, not more than 1 foot deep. If the fruit-trees did not make much new growth during the past season, liquid manure should be lightly forked in among the roots to induce them to become more

smoky district, and should be undertaken with caution. Try a Gloire de Dijon at first—under glass, of course—and if that succeeds you may proceed to others.—B. C. R.

— Grow the plants in 3-inch pots, two plants in a pot, and if the plants are well cared for they will do well and throw plenty of blossoms and make plenty of grass.—E. H.

A border of Narcissus minor.—As this is the season to plant Daffodils, a note may be made of this little dwarf Daffodil for edgings, as when the bulbs are planted moderately close together the flowers have a pretty effect in the spring. I saw last spring a border, the margin of which had been planted with this Daffodil, and the effect was very pretty, the border itself filled with a variety of bulbs, amongst which annuals were sown to maintain a display of flowers in the summer months. Chionodoxas and Snowdrops also formed part of the edging. All these little dwarf kinds are very pleasing, also on a sunny bank where the Saxifrage and Sedums are at home, the Daffodil flowers appearing above the dense green mat of vegetation. They are of exquisite shape, small, and a counterpart of those of the English wilding.—C. T.

INDOOR PLANTS.

4673.—**Plants for conservatory.**—You may have in your conservatory a variety of plants, and we should add the white and crimson *Lapagerias* to your list, and the white *Plumbago*, which goes exceedingly well with the blue-flowered type. Ferns you can have in abundance, filling hanging-baskets with such kinds as *Nephrolepis exaltata*, whilst *Cyclamens*, Chinese *Primulas*, *Chorozemas*, *Ericas*, particularly *E. hyemalis*, *Froesias*, *Camallias*, *Azaleas*, and a host of hothouse things, as *Hyacinths* and *Tulips*, may be enumerated. Do not have too many creepers overhead, as they keep out the light. Zonal *Pelargoniums* would bloom well through the winter, and also you could have such plants as *Pernettyes* in pots, which are bright with variously-coloured berries through the winter months. *Cytisus rooseanus* is a good plant; but this will be a good selection to commence with.—C. T.

4642.—**Flowers for Christmas church decoration.**—One of the most useful flowers of a hardy nature that can be used for church decoration at Christmas is the Christmas Rose (*Helleborus viridis*), and it is largely employed for the purpose. The plants respond very readily to gentle heat, and a healthy clump will provide a large quantity of bloom which, owing to the protection of glass, does not get sullied by the weather. If the clumps are to be lifted, they may be put—when the buds are getting advanced—into baskets, which should be filled with Cocoa-nut-fibre or similar material, and placed in a warm-house. I have prepared many baskets in this way; but the clumps must be well established. After the flowers are over, stand the plants out under the shelter of a wall, protecting slightly, and when the weather is favourable they may be planted out in the position from whence they came; not, however, to be disturbed again for two years. Forcing each year is too much for them. They must have a season in which to recover. I have also out many flowers from plants in the open, and merely protected with a hand-light, put on when the buds are fairly well developed. But, of course, if you require quantity of bloom, lifting the clumps and giving them a warm temperature is the plan to adopt. If you have a warm greenhouse there are many white flowers available at Christmas, such as *Chrysanthemums*, *Bonvardias*, Chinese *Primulas*, to mention only a few; but in recent numbers of *GARDENING* the subject has been dealt with.—C. T.

Very much depends upon means at disposal. The Christmas Rose, if strong roots are potted now, will come on in a cool-house. White Roman *Hyacinths* and *Deutsche Perle Azaleas* may easily be brought on in a warm-house. There will be plenty of late White *Chrysanthemums* at Christmas. *Eucharis Lillies* are charming. White *Ahutilons* (*Boule de Neige*) planted out in the greenhouse will yield plenty of blossoms; but the most effective flowers are *Eucharis Lillies*, White *Chrysanthemums*, Christmas Roses, and White *Azaleas*. None of these things can be improvised; if they are not already in stock they must be purchased.—E. H.

4646.—**A frame pit.**—I like your idea of a frame pit, as they are more serviceable than the ordinary wood frame. The most useful structure ever I made was a span-roof pit, built on the ground level, with the ends running north and south. The sides and ends were of 4½-inch brickwork to a height of 2 feet, and the interior width was 5 feet. To this was fixed a wood frame in span form, with lights 2 feet 9 inches wide, and movable. The floor was paved with bricks, and the angle at each end was filled up with glass. In such a structure many plants can be kept through the winter with ordinary care, because the height and width admits of external covering being used without difficulty; and I see no objection to an oil-lamp being used in time of severe frost. In such a pit Cucumbers and Melons can be grown in summer, and also Tomatoes, and every attention can be easily given the plants. Do not be tempted to sink your pit below the ground level, or you will lose more plants in winter through damp than from frost.—J. C. C.

4678.—**A small cold-house.**—It would be better if you devoted such a small house to one

thing, either Vines or Tomatoes, but if you decide on growing both you had better have half the house with Vines and the other half Tomatoes. Two Vines—one Black Hamburg and one Foster's Seedling (white)—will be enough; let each have a single rod trained up from the east side and down the other. The border should be outside, and the Vine nearest the end should be 2 feet from it, and the other Vine 4 feet from the first. It is not absolutely necessary to heat the house for the subjects you intend to cultivate, but you will find it much more serviceable to do so, and it does not cost much to build a flue. The beginning of February is a good time to plant the Vines. It is better, however, to get them home early in the winter, and to put them down to a point that will reach inside the house when they are planted. You will have to fix wires inside the roof and 1 foot from it for the purpose of training the Vines and Tomatoes to it.—J. C. C.

4679.—**Ivy-leaved "Geranium."**—Madame Crouse is one of the best of the Ivy-leaved section for such a purpose as required by "Wicklow," being a vigorous-growing and a frax-flowering kind as well. *Souvenir de Charles Turner*, deep-pink, feathered-maroon on upper petals, is also a good variety. The foliage is massive and flower trusses of huge size. The individual pipes are 2 inches in diameter. If the plants can be grown on in a greenhouse early in the year, so as to be of good size when planted out in the boxes, some valuable time will be saved, and the sides of the porch will be covered much quicker than though planting was deferred until the end of May.—S. P.

They will do very well in boxes. There is nothing better than *Mme. Crouse*. *Joan of Arc* is a good white variety, very free, but will not grow so fast as the first named. I have grown these two largely, and can recommend them.—E. H.

Yes; such boxes as you describe will accommodate one or even two plants of the above species comfortably. These plants do not require so much root-room as many others.—B. C. R.

4647.—**Oil-stoves for greenhouses.**—Seeing that every maker of these stoves claims his as the best, I do not see how anyone is to tell you which is the best unless they had tried them all. I have tried *Teape and Sons*, also *Rippingille's*, and I found them both good. But as regards the cost of oil I think that *Teape's* burns the least. Both, however, are costly, and for a house of the dimensions of yours the cost would not be less than 6d. for twenty-four hours in severe weather. In an average of winters there would not be more than four weeks of such weather, so that for the remaining four months the cost of oil would be at least one-third less. You will please understand that these calculations are made on the assumption that you would only light the stoves to keep out frost.—J. C. C.

4677.—**Heating a large greenhouse.**—I fear oil-lamps or stoves will be of little avail in heating a structure of these dimensions; the height adds considerably to the difficulty. On the whole, I should advise you to have a good flue put in. This would come much less expensive than hot-water pipes and a boiler, and would afford a nice, quiet, steady warmth with but little attention, especially if constructed with the deep square furnace I have so often recommended. I should advise a double flue—the lower part of brickwork, with a return of 9-inch earthenware socket pipes along the top.—B. C. R.

4641.—**Lemon-scented Verbenas.**—The propagation of this plant is, like a good many other things, very easy when you know how to do it, or get the knack of managing the cuttings. The best time to take the cuttings is in the spring, when the young side-shoots on old plants are from 1½ inches to 2 inches in length. Take them off with a "heel," using a sharp knife, trim off the lower leaves, and insert them at once in pots (the 6-inch size is a good one) or boxes of light sandy soil, such as a mixture of fine loam, sand, and leaf-mould, Cocoa-nut-fibre, or peat, in about equal parts, with a surfacing of pure fine sand, and extra free drainage. The best place for the pots is plunged in a gentle hot-bed at 60 degs. to 70 degs.—more than this is injurious—and if kept fairly moist, close, and carefully shaded from sun, few of the cuttings will fail to root and grow. I have also rooted them capitally in a bed of drying (dressed) small propagating pit, built over the pipes in a

warm greenhouse, keeping them rather closely covered with glass and shaded, and also in April or May in an ordinary box of well-drained sandy soil, deep enough to allow of a sheet of glass being laid over them. Drought, excessive heat and sunshine are the chief obstacles to success; if the outtings once flag badly it is all over with them.—B. C. R.

The present is a bad time to strike cuttings of this plant; wait until new growth is being made in spring. Take off the young shoots when 3 inches long, preserving a small portion of the old wood, commonly known as an heel. Remove the lower leaves an inch or so up the stem. Dibble the cuttings around the edge of a 3-inch pot, nearly filled, firmly with sandy soil, sprinkling a little sand on the top, a little of which is carried down to the bottom of the hole with the dibber when making a hole to receive the outtings, as they make roots more quickly in sand than soil. Make the outtings quite firm at the base, give a gentle watering to settle the soil and sand about the outtings. Place the pot under a hand-light in a Cucumber-house or in a gentle hot-bed where the heat is not too strong; shade from bright sun, and in three weeks' time every cutting ought to be rooted.—S. P.

Cuttings of pipe wood will strike very well in early spring in gentle heat in light, sandy soil.—E. H.

4675.—**Heating a greenhouse.**—An ordinary lamp-stove with a 4-inch wick might suffice to just exclude frost, unless very severe; but I should much prefer one of the "radiator" stoves, as being at once more effective, more economical in fuel, and affording a more healthy atmosphere. Roof ventilation only is required during the winter, and two small lights of say 2 feet by 18 inches in the top of roof would be ample.—B. C. R.

4653.—**A lean-to greenhouse.**—I am afraid you will find it a rather expensive matter to heat a house of this size with gas. The height makes a great deal of difference, as the heat naturally rises to the top. You will want at least three rows, equalling 90 feet, of 4-inch piping, and it will need a large and powerful boiler to heat this amount. A good independent slow-combustion boiler to burn coke would be far more economical in fuel, and require little more attention. *Teape's* Champion is about the best gas-boiler I am acquainted with.—B. C. R.

4650.—**Purchasing a greenhouse.**—You will probably find it at once cheaper in the end and more satisfactory to purchase a ready-made house, or, at least, the wood-work already fitted and marked to go together. You do not say whether you intend to build on brickwork, or go in for a "tenant's fixture." Unless the man is used to this kind of work he is sure to make mistakes, and these may prove costly in the end; but do not obtain one of the very cheap structures advertised, which are dear at any price. The best kind of heating apparatus for a small house of this description is undoubtedly two or three rows of 3-inch or 4-inch hot-water piping, heated by a small independent slow-combustion boiler. Gas or oil may be employed as the heating medium for small structures of up to about 150 square feet of area, and these require less attention than a small fire, but unless of a first-class make, you will find them come rather expensive in fuel.—B. C. R.

4598.—**A greenhouse during frost.**—I have tried a good many things, but I found frigi-dome (a woollen fabric) the most satisfactory, though mats sewn together and tacked on the roller need for blinds in summer did very well. Any covering which can be rolled down at night and up in the morning is the most useful. Light straw mats would, I have no doubt, answer well. Coverings which do not touch the glass are the most effective. Some years ago I carried out a series of experiments to test this matter, and I found in every case where there was a couple of inches of confined air between the covers and the glass the temperature inside was higher. This is what might be expected under any circumstances. I am writing from memory, but I think the difference in favour of the covering which did not touch the glass was from 4 degs. to 5 degs. Blinds used for shading in summer are very useful to roll down on cold nights if made secure from wind disturbance.—E. H.

ROSES.

ROSE HON. EDITH GIFFORD.

HON. EDITH GIFFORD is well deserving of the honour as the best of all the White Teas, not so absolutely colourless as Niphetos, but in habit, freedom, form, and constancy presenting an irresistible claim to the position, and requiring only to be known in order to become one of the most universally popular of all the Tea-scented Roses. That is to say, of the non-climbing section, for Edith, as, with excusable familiarity, rosarians habitually call their favourite, though "most divinely fair," rather than "divinely tall," is somewhat short of stature, yet no way lacking grace, pale almost to whiteness but for the soft fresh tinge deepening sometimes into a rosy-blush, neither coy nor capricious, but gracious always and constant, the full round form a model from every point of view. This charming Rose is said to have been raised from Perle des Jardins and Madame

such as Innocente Pirola, &c., is in the great substance of its petals, which are not easily stuck together by wet, so that the flowers upon fair even in cool and damp weather. This is the best White Tea for making an effective group in the garden, owing to its erect habit of growth, its extreme freedom of bloom, and its exceptional constancy, so it must be admitted that such a Rose has every claim to rank among the very best of even the most exquisite of all—namely, the Tea-scented Rose. It is difficult to dissociate the name of their raiser from the names of some of the finest (including Comtesse de Nadaillac and Catherine Mermet) of all the Teas; but it may fairly be said that Guillot would occupy a higher position than a good many other raisers not unknown to fame, even if he had raised nothing else and his reputation depended solely upon the Hon. Edith Gifford.

4635. — Rose Gloire Lyonnaise. — "Miscwber's" description of the behaviour of

PEGGING DOWN ROSES.

"J. O. C." does not seem quite decided in his mind as to the wisdom of pegging down the long shoots of vigorous growing Roses. There are a few unsatisfactory ones which droop their flowers, and it is apparently on this point that "J. O. C." wants some assurance. At the outset let me say that Gloire Lyonnaise is one of the very best of all Roses for pegging down, and under no other method of treatment have I obtained such a large quantity of blooms from each plant. It is a most characteristic Rose, and not another that I know grows like it. I have a large group which was planted when the kind first came out in heavy, deeply trenched loam. No manure was given then and none since, for the plants never fail to throw up a forest of shoots each year, these varying from 5 feet to 7 feet in height. They are straight as darts and stand quite upright. On the tops of these shoots lately have been some fine flowers, but it is not a profuse autumn-blooming kind like the true Teas. But to prune those long shoots back would be wanton sacrifice of flowers. When pegged down almost their whole length the weak tip of the shoot is taken off. Every eye throws a flower on a shoot about 9 inches or 1 foot long, standing up boldly erect as if the habit of the kind. I have never seen a drooping flower on this Rose, and must therefore take exception to its fitness for pillars, upon which I like to see drooping flowers. Gloire de Margottin is a good type of pillar Rose, brilliant in colour, and drooping in habit. I tried this pegged down, and it was a failure. But the very best Rose for pegging down I have ever tried is Mme. Gabrielle Luizet. So treated, it is a marvel of free blooming. On a group of six plants I once had over 300 buds and blooms in varied stages of expansion in one day. It, too, stands quite erect. Ulrich Bruner did very well also, and so did the Dijon Teas, including the good old Gloire de Dijon itself. I am bound to say, however, that Gloire de Lyonnaise and Mme. Gabrielle Luizet are two of the very best, and, if equalled, they cannot be surpassed for this form of culture. A. H.



Rose "Hon. Edith Gifford."

Faloot, and in habit, wood, and foliage bears considerable family likeness to Levet's beautiful seedling; for the growth is erect and sturdy, the stems deep red, and the foliage dark coloured and very handsome, forming an admirable contrast to the brilliant purity of the boldly-displayed white flowers. These are produced in such abundance from early summer until late autumn that it might be expected that many would be ill-shaped; but, as a matter of fact, hardly a flower is ever lacking in form, whether in bud, half open, or fully developed, and the Hon. Edith Gifford is as constant among the Teas as in A. K. Williams among Hybrid Perpetuals. A variety to which the Rose under notice has often been compared is Devonienne, and it is not improbable that this in many places will be superseded by the Hon. Edith Gifford, which is more vigorous, less tender, infinitely more free-flowering, and whose flowers, even when in full bloom, never assume a flat, pancake shape. Another point in which the Hon. Edith Gifford is superior to other White Teas,

this grand H. Tea when pegged down suggests to me that he does not peg down until after growth has commenced. When pegged down at pruning-time I have never found Gloire Lyonnaise behave as he describes. It certainly does not bloom with so much freedom when grown in an upright position, and when pegged down properly I have never noticed the young bloom growths more horizontal than other strong growers under the same treatment. —P. U.

4638 — Rosea in an unheated greenhouse. — Certainly a Rose, such as a Maréchal Niel or Climbing Niphetos (the common dwarf variety of the latter would be useless), would thrive in such a position—at least, if kept free from aphides and other insects. I should not, however, train a single stem immediately under the ridge, but take up two, and train them one on each side, 9 to 12 inches from it. —B. C. R.

Yes, a Maréchal Niel Rose would do trained in the way you suggest. The only objection that can be raised against the arrangement is that when the growth of this kind is trained near to the ventilators it is very subject to mildew. —J. C. C.

4636. — Treatment of Begonias. — Possibly you have kept the plants too wet, as this, or the reverse, would cause the flowers to drop off. But you must remember that the flowers are naturally not very long-lasting, and, especially if the plants are handled at all carelessly, soon fall. Your treatment appears to have been all right, and I do not know why you complain, as you say the plants have flowered well. They will not keep gay throughout the winter, and if not already showing signs of going to rest, they will soon do so. When you observe the leaves beginning to turn yellow, keep the plants on the dry side, but withhold water quite gradually, until you can relinquish it altogether. Sudden stoppage in the supplies is most harmful. When the foliage has quite died down, you may store away the bulbs for the winter; keep them in the pots, and place under the stage of the greenhouse, or similar position, where they will be safe from frost and dry. —C. T.

4624 — Spiraea japonica. — Unless your crowns have done exceptionally well since being parted and planted out last summer, they will not be sufficiently strong to force again this season. Owing to the dry weather, they are hardly likely to be strong enough, and I would strongly advise your leaving them where they are until next autumn, when they will have developed into good roots. It will aid them very much, and at the time afford a little useful protection if you mulch them with rough stable litter during the winter. —P. U.

— The second growth and bloom will not do the plants any good, but if you leave them alone till December, then pot and place them in a cool frame or pit, and bring them on a gentle heat early in March, with plenty of water and a little stimulant, they ought to force fairly well. —B. C. R.

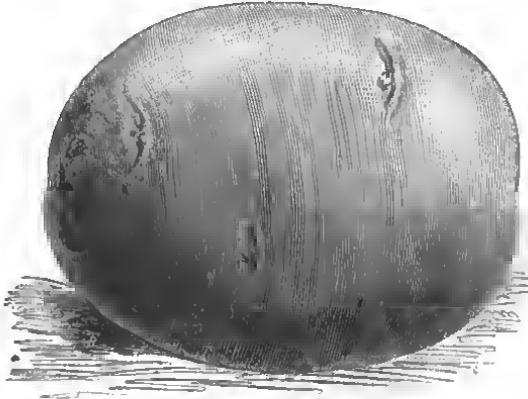
4644 — Freesias. — When well grown, Freesias should not be long in the leaf and droop over. This is probably the result of growing them under the Vines. Freesias, to have them sturdy, should be grown in the full light, in a freely ventilated house, as near the glass as possible. —E. H.

4662 — Sawdust as manure. — Pure sawdust is about the worst stuff that can be put on a garden, as it secures the soil and produces no end of fungi; but when saturated with urine, &c., this fault disappears, and it may be safely employed for almost any crop. Add a very little lime only, just to keep all sweet. —B. C. R.

THE KITCHEN GARDEN.

POTATOES OF GOOD QUALITY.

It is well known that the soil in which Potatoes are grown has a good deal of influence on the quality, but, notwithstanding this, I can name four sorts that will in the majority of cases prove valuable. These are Myatt's Ashleaf, Covent Garden Perfection, Puritan, and Magnum Bonum. In this part of the west of England Rocks are largely grown both by cottagers and farmers. Consumers do not mind



Potato "Rosette."

having a deep-eyed Potato when the quality is good, and I have not the least doubt but that Rocks will remain a favourite late-keeping Potato for many years to come. Quality is everything in a Potato, while appearance counts for nothing. It is rather singular that the Rocks should retain such a hold of public favour while so many much handsomer sorts have been introduced only to quietly drop out of cultivation. It, however, shows that the consumer soon learns to discriminate between Potatoes of good and bad quality. Covent Garden Perfection has often been referred to in very favourable terms, but not a word too much has been said in its favour. I have grown it ever since the first year it was introduced, and have seen it growing in many different kinds of soil, but it has always retained its character of being an excellent cropper and the table quality all that could be desired. It is a second Early, being ready for lifting generally about the middle of August, while the tubers will keep sound and retain their flavour until the end of the following March. Puritan is, perhaps, better in light land than heavy. It, however, adapts itself to a variety of soils better than some other sorts. I do not remember having at any time seen any allusion made to the loss in weight that Potatoes are subject to when they are stored in heaps for several months. I have, however, good reasons for knowing that it is a fact that they do so, and to a greater extent than I was prepared for, and the larger the tubers are the more they appear to lose in weight. Two years ago I weighed several sacks of Champion and Magnum Bonum as they were taken to the store, and weighed them when taken out four months later. The loss of weight during that time was not less than 10 lb. on every hundredweight. Two excellent types of Potatoes are here figured—Rosette and Schoolmaster. J.

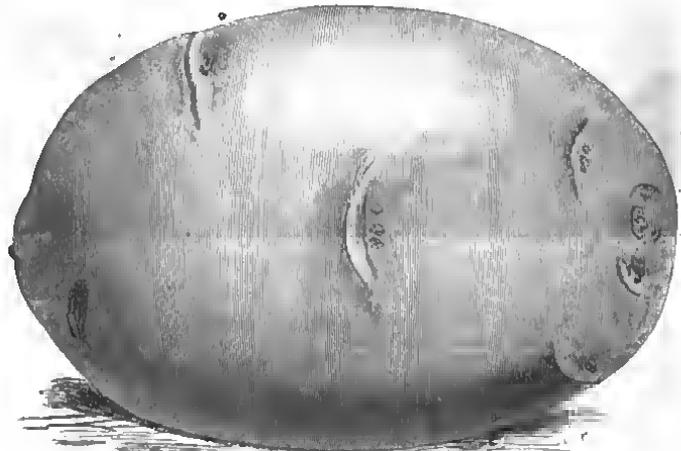
PLANTING EARLY CABBAGES.

EARLY Spring Cabbages are always greatly appreciated, as they come in at a time when one has had to rely on root crops for a good deal of the vegetable supply, and to have them as early as possible should be the aim of all kitchen gardeners. There is generally plenty of land vacant at this time of year where Onions or Potatoes have been cleared off, and the first thing is to put a good dressing of manure on the land and dig it in deeply, for good crisp Cabbages cannot be grown on poor soil; then set your lines out about 2 feet apart, and put the plants in about the same distance in the row if they are intended to stand to get fully grown or are of fairly large kind; but if they are to be

in the row for any of the small garden Cabbages that are never better than when they are only three parts grown, according to the market gardener's standard, and most people find it best to clear off the Cabbage-bed early enough to crop the land with Potatoes. There are many good sorts, but few to surpass Wheeler's Imperial and Early Rainham. If the soil is dry, water freely, and they will soon get rooted and take care of themselves, and as soon as they fairly start into growth stir the soil amongst them with a hoe, and before the winter sets in draw a little soil up to protect the stems from frost. J. GROOM.

4668.—**Mushrooms and Rhubarb in a shed.**—The dimensions of your shed is right enough for the purpose you intend it for; but you cannot force Mushrooms and Rhubarb at Christmas without having it heated. I should prefer the Rhubarb on the floor and the Mushrooms beds on the shelf. A small portable stove will no doubt be the simplest way of heating, but hot-water pipes will be better. In either case you will find the air of the shed get dry if moisture in some way is not given. Probably damping the floor will do.—J. C. C.

4695.—**Making leaf-mould.**—A very good way to make leaf-mould is to use leaves for a hot-bed for early Potatoes, or some other crop. Early Lettuces would do well on a bed of leaves. This is making some use of the warmth generated



Potato "Schoolmaster."

by fermentation, and at the end of the year the bed should be turned over and intermixed. If there are not leaves enough to make a small hot-bed, place them in a heap in some out-of-the-way corner, spread a little soil over them to keep them from blowing about, and leave them to decay.—E. H.

4655.—**Treatment of a Bermuda Lily.**—Better start fresh with a new bulb. The flowering exhausted it, and it is not likely to do so well again. The bulbs are cheap now.—E. H.

4572.—**A new lawn.**—There is no necessity to put either manure or lime on the Grass of a newly-laid lawn; certainly not at this season. The manure, if any, ought to have been dug into the ground before the turf was laid, and a sprinkling of lime also would have been probably beneficial. If the Grass is at all weak or thin you may give a light top-dressing of well-decayed leaf-mould in the spring, just before it begins to grow again; but it is neither necessary nor desirable to induce the Grass on a lawn to grow too strongly.—B. C. R.

4643.—**Colours of Violets.**—Marie Louise, rich mauve, lavender blue, with a white eye; the flowers are large. This variety is perhaps the best of all the double-flowered kinds for frame culture. Comte de Brazza, white, of the Neapolitan type, good for spring flowering. Mme. Millet, violet-purple, shaded with carmine, very free and distinct. De Parme, pale lavender-purple, a little later in flowering than Marie Louise; a capital sort also.—S. P.

4686.—**A boarded fence.**—Red Currants would be a success on the north side of a wooden fence. There would be scarcely height enough for Plum or Morella Cherries, otherwise they would succeed. The brick wall would do well for dessert Pears to be trained horizontally. Plant Pears, Apples, Plums, and Cherries 15 feet apart. Red Currants 4 feet to 6 feet apart. Good kinds are Pears: Marie Louise, Louise Bonne de Jersey, Pitmaston Duchess, and Doyenné du Comice. Apples: Cox's Orange Pippin, Blenheim Orange, Echinville, Allriston, Peasgood's Nonsuch, and King of Pippins; and Plums: Green Gage, Victoria, Pond's Seedling and Prince Englebert.—E. H.

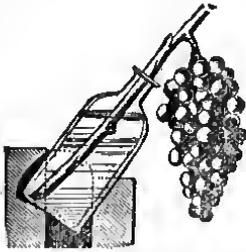
—Cordon Pears planted 2 feet apart would succeed capitally on the south side of the boards, and so would Plums. Those latter are generally trained fan shaped; a space of ten feet apart is not too much for the latter. Of Pears the following varieties are good: Jargonelle, William's Bon Chrétien, Pitmaston Duchess, Marie Louise, Louise Bonne de Jersey, Winter Nellis, Passé Crassane, Duchesse d'Angoulême, Clapp's Favourite, General Tolleben, and Josephine Malines. The ripening season of those named extends from August until March. Green Gage, Victoria, Jefferson, Kirke's, and Prince of Wales are fine relleche sorts of Plums. On the north side of the fence Morella Cherries, Red and White Currants would succeed. On the western exposure sweet Chorries would succeed. These are best trained fan shape. A space of 12 feet would not be too much from tree

to tree. Governor Wood, May Duke, White Heart, Bigerrea Napoleon, and Elton are deserving kinds to plant. If the wall gets most of the afternoon sun it might be advisable to plant a couple of fan-trained Peach-trees. Helo's Early and Dymond are reliable; the former is an early sort and the latter a mid-season kind. Early in November is a good time to plant the tree. The soil should be deeply dug at once, so that it will have some time for the soil to settle down to near its natural position before planting.—S. P.

FRUIT.

KEEPING GRAPES.

IN reply to "G." and others, a room over a stove-hole is anything but a good position for storing Grapes in, especially if the temperature stands so high as 60 degs. From 45 degs to 50 degs. has been repeatedly proved to be the most the case, and a room that keeps near these figures without either the assistance of



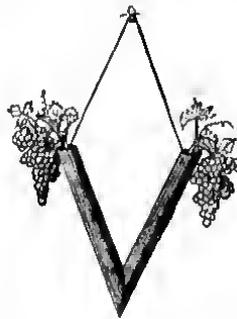
Ferrière mode of fixing the bottles.

much fire-heat or the admittance of air is most desirable. The best place I have yet found for keeping Grapes is in a spare bedroom in a large old house. This is on the north side, has thick hollow walls, and is duly ceiled. There is a fireplace in it, but this is only used during the prevalence of very severe weather, being blocked up at all other times. There is a tight-fitting shutter to the window, and this is seldom opened, while the door is also kept locked. It will be found that Grapes in still warmer houses or rooms are constantly cool, and which can be most surely tested by placing a berry against the cheek, and in the comparatively low temperature of a fruit-room they are still colder. If a room is ventilated freely directly after a change from very cold to quite warm weather, the warm air quickly condenses on the cold walls, the moisture trickling down in streams, and we are told that this is simply the frost coming out of the walls. Much the same thing is liable to happen if warm air from the outside, and which is naturally highly charged with moisture, comes into contact with the Grapes, and once the skins have been damaged in that way, decay of the berries is inevitable and rapid. That is why Grapes keep so much better in a cool, properly constructed room than in ainery where much greater fluctuations of temperature and free ventilation at times are unavoidable. It is surprising what a great number of bunches may be hung in a small room, a series of simple racks formed as to support half-pint bottles in a sloping direction being all that is necessary on each side of the room. Mr. Robinson, in his work on the "Parks and Gardens of Paris," first drew attention to the simplicity and effectiveness of this plan of keeping Grapes, and the simple woodcuts here given will do more towards instructing "G." than any number of paragraphs from my pen. A bedroom not being available, then ought "G." and others who are anxious to keep a large quantity of Grapes till the spring, or, say, up to May, to construct a building specially for the purpose. In some instances it might be possible to convert a lean-to shed on the north side of a wall into a Grape-room, a wooden floor being formed, the walls thatched, and the roof either ceiled inside or thatched on the outside. If necessary a room could be built against a north wall preferably as being the coolest site and least affected by fluctuations of temperature, the side being either a wall of hollow brick or stone, or of wooden posts and match-boarding, a heavy thatch of either straw, Reeds, or Heath being necessary in this case. The roof should be either slated and ceiled, or, better still, slated and thatched. What light is needed at different times can best be admitted by either a hinged top light or from one end, this being covered up, as a rule. A single hot-water pipe carried round the room might be serviceable at times for the purpose of either expelling damp or for preventing very low temperatures through the opening in the roof. "G." can easily estimate what length his room should be, the height being regulated according to the wall against which it is to be constructed, and the length by the number of rail the room

will hold and the average width of bunches, every bunch being allowed to swing just clear of its neighbours. I can only advise "G." to place a layer of perfectly dry ashes or some other non-conducting material between the brickwork of the stove-hole and the flooring of his room, and if the flue passes through the room, to divert this if possible.

FRUIT FARMING.

4638.—No doubt fruit farming will pay if properly managed. Plant none but good sorts of every kind of fruit, and aim at having the finest fruit; think more of quality than quantity, and try and open up local trade. There is far too much of sending all fruit to Covent-garden, which has the effect of glutting the market, resulting in poor prices. But if you can convince market ealesmen that your fruit is of the best quality and honestly graded you will realise good prices even there. It is a mistake to plant many varieties of one kind of fruit; find out what sort succeeds well, and plant that in quantity. I will give you an instance of what is meant. Here, in this garden, Lord Suffield Apple does not flourish, but Lord Grosvenor does. I have but three trees of the former, but I have 500 of the latter. The same rule holds good with all kinds of fruit. If Golden Drop Gooseberry gave good results I should plant it largely in preference to others. As you have bought the land the first thing to do is to provide shelter from east and south-west winds. The former injures the blossom in the spring, and the latter knocks the fruit off in the autumn. South and northerly winds do not



Mr. Dodd's tube for Grapes.

so much matter, but if shelter can be easily provided so much the better. The most rapid-growing tree is the Black Italian Poplar. This should be planted 10 feet apart on the outer edge or boundary. A row of Austrian Pines, 8 feet apart, should be planted inside the Poplars. These are intended for the permanent shelter, the Poplars to be cut out as necessity requires. For the present allow the hedges to grow high; they may be useful for shelter. If you cannot obtain any reliable information as to what sorts of any kind of fruit succeeds in the neighbourhood, you will have to test that yourself. I should plant about 3 acres at first, commencing with the Grass-land, if this is the more sheltered. I should either farm the arable land or plant it with vegetable crops. Nothing is more profitable than early Cabbage, Runner Beans, Lettuce, and Beet. I should plant a few PLUM-TREES to test the varieties and manner of growth, but should not do this extensively. Standard Damsons would, however, be safe. These would succeed in the most exposed part, and would provide some shelter for other fruits. It is difficult indeed giving advice about numbers of any particular variety, but I will give a list of varieties that are likely to succeed in such a soil as that named, leaving the quantity of each to the owner to determine. I would strongly urge that the best trees are the cheapest in the end. Do not be led away with so-called cheap bargains. Go to a well-established firm of nurserymen and pay a fair price. Trees from two to four years old are the most suitable; these should be purchased for £10 per 100—bush Apple-trees for instance. Standard Apple-trees should be planted 30 feet apart, with a bush tree in between and complete row of bushes between the standards at 15 feet apart, all ways

One or two rows of Gooseberry-trees and Currants can be accommodated between the Apple-trees. If one row of these small fruits were planted there would be space enough left for a couple of rows of Daffodils between the fruit-trees. This intermediate crop pays well, the flowers sell readily, and the bulbs of many sorts are not expensive. The turf should be turned over, allowing it to rot, taking none away. The soil should be moved 18 inches deep where the Apple, Pear, or Plum-trees are planted if it is at all stiff or retentive of moisture. If there is any suspicion of the land being wet during the winter, plant the trees on mounds raised 6 inches above the natural level of the ground. In any case do not plant them below the surface on newly-dug soil. Add but a very small quantity of manure to the soil at planting-time, but manure the surface of all newly-planted trees with half-rotted stable-manure for at least 18 inches from the stem; 1 foot will be ample for bush fruits. Choose a dry day for planting, when the soil will intermingle freely with the roots. Prune the latter carefully if there are any damaged to induce them to make fibrous roots, which are to be preferred to fibreless ones. Do not in any case bring the soil up from the bottom to the top, but keep that which is on the surface in exactly the same position. All

STANDARD trees ought to be securely staked the same day that they are planted to prevent the roots being loosened by the tree swaying about. In conclusion, I will give a short list of varieties of each kind, which can safely be planted for trial. Although I have replied at some length to this query it embraces so much of importance that now much is left unsaid. Further details could, however, with the permission of the Editor, be given upon any point not quite clear. Apples (desert): Red Astrachan, Mr. Gladstone, *Devonshire Quarrenden, Lady Sudeley, Benoni, *Worcester Pearmain, Nanny, King of the Pippins, *Blenheim Orange, *Cox's Orange Pippin, and Cookle Pippin. Kitchen sorts: Lord Grosvenor, Lord Suffield, Duchess of Oldenburgh, Warner's King, *Mohlville, Stirling Castle, Frogmore Prolific, Golden Spice, *New Hawthornden, Golden Noble, Bismarck, Mero de Ménage, *Wellington, Lane's Prince Albert, *Newington Wonder, *Brentley's Seedling, and *Alfriston. Those with an asterisk attached are best for standards. Pears may succeed in the loamy soil. I should plant a few bushes on trial of the following kinds: Williams' Bon Chrétien, Benrô d'Amenlis, Louise Bonne of Jersey, Marie Louise, Pitmanston Duchess, Doyenné du Comice, Duchesse d'Angoulême, and Ne Plus Meuris. Plums as bushes: Orleans, Victoria, Belle de Louvain, Pond's Seedling, Prince of Wales, and Rivere' Monarch. Damsons: Earleigh and Prune are the best kinds. Carter's Prolific and Superlative are the best Raspberries. Lee's Prolific is difficult to beat as a Black Currant. Whinham's Industry, Golden Drop, Keepeake, Faithful, and Crown Bob are good Gooseberries. In all cases I have placed the varieties in their order of ripening. S. P.

4603.—Early Vines.—From the query it is difficult to know what are termed early Vines. If



Thomby mode of fixing the bottles.

those that ripen their fruit in July are called early, the month of November will be soon enough to prune. If the fruit was ready to cut in May, about the middle of October will be soon enough. Very often such plaster as clay, sulphur, and I lime are mixed together for painting the rods with, but these ingredients are entirely unnecessary, and, indeed, quite useless for the purpose they are intended for—destruction of insect pests. The best way to cleanse Vine-rods is by

thoroughly scrubbing them with a narrow hard brush, using water heated to 100 degs., dissolving in it some soft-soap. If the work is well done, working the brush around the spurs carefully, there should not be many insects left alive. A second washing should settle the stragglers. If there is any suspicion of the presence of mildew or red-spider upon the foliage or wood during the past season, the rods might be painted over with sulphur made into the consistency of paint with advantage, as sulphur is by far the best remedy for mildew and spider also.—S. P.

APRICOTS.

WITH regard to the richness and lusciousness of well-ripened Apricots there can be no two opinions. They may not be so generally popular as Peaches, especially if the latter are grown under glass, but there are plenty of good judges who prefer Apricots to any other kind of fruit that may be placed before them. Why, then, are they not more grown by amateurs and cottagers? That Apricots will not succeed on all soils and in all climates must be conceded, but very few can say for certain that they will fail in their particular locality, unless they have made an intelligent attempt to grow them. The best advice that can be given to amateurs is to ascertain what has been done by professional gardeners in their respective neighbourhoods. It is somewhat difficult to decide exactly what soil best suits Apricots, but with me they do remarkably well in a medium loam, too much clay or too little of it in the soil apparently being fatal to longevity. The worst failures that have come under my notice have been in the Weald of Kent and Sussex, on the heavy clays of Essex and Middlesex, the chalky soil of Wilt, and the hot gravels that crop up in various districts. On the other hand, in many parts of Derbyshire, Leicestershire, Oxfordshire, Worcestershire, Shropshire, Gloucestershire, Somerset, Dorset, Devon, and Cornwall, Apricots thrive admirably, being quite as easily grown as Plums. Of the eastern counties generally I have had no experience, and should be glad to hear whether or not Apricots could be successfully cultivated in any of them. Not a little depends in all cases upon the choice of site. The trees must have the benefit of wall or fence shelter, and neither low nor cool walls or fences answer well. The aspect ought to be nearly or quite south, all the sunshine possibly being needed by the trees, or otherwise the wood fails to ripen properly, light crops being one of the sure consequences of this. In some of the midland counties mentioned cottagers grow Apricots on the sunny gable-ends of their houses, and occasionally they are to be seen on the fronts, the spaces between the windows being occupied by the trees. So well do the trees succeed in these positions, a free extension of growth evidently suiting Apricots well, that not a few of the owners frequently sell enough fruit to nearly or quite pay the rent. Instead, therefore, of so many houses, stables, and other sunny walls and fences being either devoted to Plums, or worse still, not utilised at all, why not try what can be done with the choicer Apricots? A sunny site is indispensable, and next in importance comes the necessity for a well-prepared root-run. Few amateurs probably will err in giving the trees a too rich compost, though many professional gardeners have done so, the consequence being a rank, unfruitful growth. More probably the mistake will be made in not treating them with sufficient liberality. Too much moisture, especially in the autumn, is injurious, but planting in raised borders is a simple way out of this difficulty. Quite fresh turfy loam is all that need be given the trees at the outset, and this not being forthcoming, substitute the best ordinary garden soil procurable, that of a moderately strong character best suiting Apricots. Open holes for each tree not less than 4 feet square, and to a depth of about 18 inches, with intervals of 12 feet between. Remove all soil that is but little better than clay, and also any excess of gravel or stones there may be. Return the top soil into the bottom of the hole, working a little fresh soil into this, and make it somewhat firm. Then add sufficient fresh loamy soil to raise the back 12 inches above the ordinary level with a slight slope to the front, this being all the preparation needed, though if the soil be

poor a liberal addition of half-inch bones and some burnt garden rubbish will act most beneficially. As far as size of fruit and quality are concerned, Moorpark is much the best of all Apricots, but, unfortunately, it is also the most fickle, the trees being liable to gum badly, the limbs dying off wholesale. Hemskirk produces large fruit very freely, also possessing a good constitution, and if only one tree is planted let it be of that variety. Royal has been known to succeed where other varieties have failed, and both that and Shipley's are well worth a trial. A fairly good dwarf fan-shaped tree can be bought for 3s. 6d., and a fine specimen for 5s., the quickest return being had by planting one of the latter. If economy be the order of the day, then order maidens, these being usually sold at 1s. 6d. or thereabouts. Prior to planting cut away all bruised ends of roots, and cleanly cut across the broken ends in order to facilitate healing. Avoid deep planting. The collar of the tree ought to be nearly or quite exposed and the roots evenly distributed throughout the soil, the reckless plan of setting a tree in a hole and shovelling the soil on to the roots so as to mat them together being most reprehensible. It pays well to surround the roots with a little fresh light compost, some of the residue of a garden fire or another being particularly congenial to them. If the soil is at all wet, avoid trampling on it, and in any case give newly-planted trees a mulching of straw litter in order to exclude severe frosts.

PRUNING the trees is not so much of a mystery as many appear to imagine. All the same it is a very important detail, and I will do my best to describe it sufficiently. A good trained tree would be furnished with from eight to twelve branches, all of much the same size, and whether there be few or many, it is advisable to lay them all in to their length (though not till the ground has settled somewhat), and exactly as previously trained. Cutting back the branches rather hard is a loss of time, the trees very probably being two or three seasons before they again attain their original size. Even lightly shortening the branches is a mistake, though, if the points are green, that portion should be cut off. Laid in to their full length, either lateral growth or fruiting spurs will develop at every joint, but those pruned are liable to break near the ends, the lower parts being quite naked. During the summer all lateral growths other than one or two on each branch (these being required for furnishing blank wall space as the trees extend) should be shortened back to a length of about 4 inches, and further reduced to a length of 1 inch at the winter pruning. No fruit ought to be expected or allowed to form during the summer following upon planting, but if all goes on well a few may be had in the following year. Maidens or trees that have made one unpruned shoot must not be allowed to remain intact, but should unhesitatingly be cut back to within 4 inches of the point of union of the graft or scion with the stock. From the resulting shoots select four of the best placed, and carefully train these in an oblique direction and well clear of each other. Next winter these branches ought to be shortened to about one-half of their length, and each giving two well-placed shoots, the foundation of a good tree is laid, no more shortening back being needed. Let the tree extend freely, laying in fresh branches according as there is good space for them, and they will soon become very profitable.

Apricots succeed in greenhouses better than most gardeners, amateurs or otherwise, are aware. In very many cases where glazed structures are erected against walls of dwelling-houses or high back walls of any kind, the latter might well be utilised for the culture of Apricots and other hardy fruit. Standard-trained trees can be bought, these being the best to plant where there are front or back benches or stages in the way. Prepare the borders, plant, prune, and train exactly as advised in the case of open-air trees, and they are almost certain to do well. They must, however, be kept well supplied with water at the roots, and not be forced, ordinary greenhouse treatment best meeting the case.

H.

4640.—Grape-vine in a greenhouse. The number of bunches is too many for a vine but five years old; half that number

well coloured would have been more creditable. A Vine of this age, and carrying such a heavy crop, could not be expected to colour the berries. There are several causes to be advanced for the cracking of the berries, although Black Hamburgh does not crack its berries, as a rule; in fact, it is exceptionally free from this evil. If the skin of the berries is covered, or partly covered, with rust-looking matter, this would cause them to crack; the skin is injured and cannot expand. Rust is caused generally by inattention to ventilation early in the morning. The vinery is kept closed until the sun induces the temperature to rise inside the house so much that the condensed moisture falls upon the surface of the berries, and if air is admitted to the house by opening wide the ventilators at one time instead of gradually, the temperature suddenly falls, causing a chill to the berries. Mildew may have caused the berries to crack; where this fungus fastens itself to the berries the skin tissues are injured so much that the berries crack instead of swell regularly. Do not syringe the Vines at all after the bunches are in bloom; water lodging on the berries with the sun shining powerfully on them also may have caused the cracking of the berries. The rods are about the right distance from the glass. The Grapes will colour in the same house with plants if the Vines are healthy and not cropped too heavily. Air should be admitted in small quantities early in the morning, increasing the supply with a rising temperature.—S. P.

4492.—Clover-seed and Strawberry-berries.—I never heard of such a thing, and should certainly not advise you to do so as you suggest. The Clover would over-run the entire bed, smothering the Strawberry plants and exhausting the soil.—B. C. R.

4451.—Fruit in a cellar.—Fruit of any kind, especially Apples, does not keep well this season, so much Fungus appears to be present among the fruit. A small speck in the skin quickly develops into a decayed place rendering the fruit quite useless. The abnormally dry summer experienced, which robbed the tree of their necessary root-support, is no doubt the cause of early decomposition. A cellar is, as a rule, a good place to keep fruit in, provided it can be ventilated freely for a time until the sweetening of the fruit ceases, when little air will be required. I lay mine in heaps on straw. Turn them carefully over after they have been there three weeks to remove any affected fruits which contaminate those near them.—S. P.

A cellar is not a bad place for keeping fruit if it is well ventilated, cool, fairly dry, and the temperature even. Possibly your fruit has rotted through careless gathering. The fruit-room is often blamed when the gathering is at fault, or the fruit is not used in its proper season. The great thing is in keeping fruit to maintain a cool, even temperature, and lay the fruit out in single layers, not heaping them up as is too often the case. When this is done a bad fruit will promote decay in the whole heap and create much mischief. Look over the stores at frequent intervals to pick out those that show signs of decay, and which may be used at once.—C. T.

A dry cellar is an excellent place for late Peas and Apples, if free from woodlice and mice. It should be mentioned that the early autumn Peas do not keep long under any circumstances.—K. H.

4607.—Fruit-trees round a large tennis-lawn.—Espalier-trained Apples and Peas would be the most suitable kind of trees for the purpose. Not less than 15 feet should be allowed between each. There is nothing as serviceable or so good for training the trees to as a wire-tralis 5 feet high, made with No. 3 wire, strained tightly to stout iron posts let into the ground at each corner with substantial feet and flat iron standards, 15 feet apart, to support the wire between. The wires ought to be 10 inches apart, or according to the distance the side branches are apart. Horizontal-trained trees are preferred for espaliers. Early in November is a good time to plant; the soil should be trenched 2 feet deep, keeping the surface soil on the top. Plant the trees so that their roots are within 3 inches of the surface, choosing a dry day for the purpose, so that the soil will readily mix with roots. Any bruised or broken roots should be carefully pruned to a sound part, indoling them to make fibrous roots from the same place. If a spadeful or two of road-grit, decayed leaves or vegetable refuse, which is added a small quantity of wood-ashes, can be used for covering the roots,

as much the better. I prefer this to adding manure to the soil; except in cases of extreme poverty I do not advocate the employment of manure; at planting-time it is too apt to induce growth that is too rampant to become matured thoroughly, and this is one of the most important points to study in fruit culture. A mulching of half-decayed stable-manure, laid on 3 inches thick, will preserve the roots from frost during the winter as well as prevent the evaporation of moisture from the soil during the summer following if hot and dry. The following is a good selection of sorts classified in their order of ripening: Apples (dessert): Irish Peach, Lady Sudeley, Devonshire Quarrenden, Worcester Pearmain, King of Pippin, Cox's Orange Pippin, and Starmer Pippin. Kitchen varieties: Lord Grosvenor, Keswick Codlin, Echinville, Duchess of Oldenburgh, Warner's King, Mère de Ménage, New Hawthornden, Lane's Prince Albert, Newton Wonder, and Alfriston. Pears: Jargonelle, Williams' Bon Chrétien, Marie Louise, Pitmaston Duchess, Beurré Diel, Winter Nellis, Duchesse d'Angoulême, Doyenné du Comice, and Josephine de Malines, with Cotillac for stewing.—S. P.

CHRYSANTHEMUMS.

SEASONABLE NOTES.

THE cultivator must now be nightly on the look-out for enemies in the shape of earwigs, cockroaches, caterpillars, slugs, and woodlice. This may seem a long list to have to contend with, but each is in its case. Directly the blooms begin to expand, one or other of these pests take a fancy to the tender morsel of petals. Earwigs are the greatest pest. It is surprising what amount of depredation is caused on one bloom during a single night by earwigs. Trap them by placing Broad Bean stalks 1 foot long amongst the leaves of the Chrysanthemums, examining them every morning. By this means many may be destroyed; but the best way to catch them is by going round after dark each night quietly with a light when they are busy feeding on the petals. They must be caught quickly. Nothing is better for the purpose than a pair of tweezers. The least shake of the plant and they secrete themselves among the petals and are not at all easy to discover again. Woodlice in some places are troublesome, as they eat the florets from the under-side of the flower. The damage is not always seen until the flowers are spoilt. When the plants are in vineries this pest is the most numerous; the mulchings of manure used therein for the vines is just the place for them to harbour, as it is generally dug on the surface in some parts of the house during the winter. Hand-picking from the flowers is the only remedy, and where they are numerous this must be incessantly carried out. Slugs disfigure the flowers by crawling over them, and in some cases they eat them. Where any trace is seen of them, either on the flowers or leaves, or even on the pots during the day-time, they are almost sure to revisit that particular spot the next night. In this manner they can be caught after dark. Some bran laid on the top of the pot will not act as a bait for them. Cockroaches where numerous are sure to find out the blooms, which are soon spoilt when three or four commence to eat them. They are rather difficult to catch when feeding, as the moment the light is turned on them off they go. When the plants are so situated that they are standing thinly about, a gentle shake dislodges them when they can be killed on the floor. Cockroaches are most troublesome to plants that are placed in heat to push them along—for instance, the members of the Princess Teck family often require hastening to have them in bloom at the same time, these varieties requiring to be grown from late buds necessitate their being generally later than many others. All of this type bear forcing in the plant stove remarkably well, and it is while they are in such structures that the cockroaches are the most troublesome. Green caterpillars are sometimes a source of annoyance; except by chance in moving a plant, the night is the only time to discover their whereabouts. It will be seen that the grower of Chrysanthemums for exhibition has many enemies to contend with, all of which must be subdued if perfect blooms are expected.

4600.—Losing foliage of Chrysanthemums.—It is common for this variety to lose its foliage this year, especially on plants that are cultivated for the production of large exhibition blooms. This I attribute entirely to the season. The abnormally hot and dry weather is, no doubt, the cause. The former rendered the roots too hot in the pots, and the latter prohibited atmospheric moisture too much. I do not think that the blooms of this variety generally will be up to the mark either; the loss of foliage so early caused a shock which must tell upon the quality of the blooms later on. This, coupled with the fact that the crown, or second bud, formed too early to warrant cultivators to "take" it with any degree of certainty, the consequence is that in most cases the third bud has been depended upon; these give smaller blooms.—E. M.

— You are probably growing your plants in pots of too small a size. Avalanche is a strong grower, and requires plenty of pot-room. The pots should not be less than 9 inches in diameter; 10 inches will be better.—E. H.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in *GARDENING* free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of *GARDENING*, 57 Southampton-street, Covent-garden, London. Letters on business should be sent to the Publisher. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as *GARDENING* has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Concise, plain, and concise answers to queries should be given to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in *GARDENING* should mention the number in which they appeared.

4495.—Grafting.—Which is the best time and method to graft Apple and Pear-trees?—B. J. F.

4600.—Cider press.—Will anyone kindly tell me where I can get a good portable cider press suitable for a small orchard?—H.

4607.—Plants for a cold greenhouse.—What plants besides bulbs can I grow in a cold greenhouse without any heat or warmth?—Youko, Kent.

4608.—Cherry-trees dropping flowers.—Will someone kindly inform me how to prevent Cherry-trees from dropping all their blossoms?—B. J. F.

4609.—Rose cuttings.—I am having a long trench dug deep for bush roses. Will someone please to give me the names of twelve best Tees and twelve best Parquetals?—A. Nooks, Surrey.

4700.—Aranaria (Monkey Puzzle).—Will someone be good enough to tell me how to treat this tree? The branches four or five up are almost dead. Is it fresh soil that is required?—Stocks.

4701.—Hardy Asclepias.—Would any of your readers inform me if hardy Asclepias will stand out-of-doors, or will be any better for pruning? I should like to keep mine rather small if it did not injure them.—A. A.

4702.—Insect on Vines.—I noticed in my vineyard that there are a great many white woolly spots in the crevices along the canes. Will any person kindly say if this is an insect, and if so, how to banish it?—Novica.

4703.—Enlarging a garden.—I am about making my garden larger by a siding extra ground, which wants green stuff dug in. Please let me know what seeds I am to sow for plants to dig in, and how late in the year I can do so?—Youko, Kent.

4704.—Roses for show.—I intend growing some Hybrid Perpetuals in competition at our local show. Will someone kindly favour me with the names of a dozen or so that would be most suitable for that purpose? Also, which would be preferable, bushes or standards?—Hvrasin.

4705.—Pear-tree with cracked fruit.—I have a Pear-tree which has produced a large crop of fruit of a very delicious flavour, but they were all more or less cracked, and also the bark at the trunk of the tree. Will anyone give me a means to prevent the cracking?—B. J. F.

4706.—"Geraniums" in winter.—I should be glad to know how I could keep my "Geraniums" through the winter. I have only a small garden (several dozen "Geraniums" in 16) on greenhouse or frame of any kind to place them in, and desire information as to when and how to pot them and preserve them if possible.—F. F., Richmond.

4707.—Campanulas in pots.—I would be much obliged to any person that would give me a few hints on the proper treatment of Campanulas? I have *C. fragilis* and *C. garganica* growing in pots in a cold frame, struck from cuttings in spring, and they do not seem to be doing well. They never flowered this year. Is there any hope for keeping them through the winter in the frame, or are they quite hardy? If so, will they do better in running or sanded?—Novica.

4708.—Plants for a rockery.—Would someone kindly tell me of some plants that would grow well on a rockery covered by large trees, mostly Birch and Horse-chestnut? The soil is loamy; but that could be removed if necessary, so I have done this for the Ferns. I have tried ordinary rock creepers, but the drip from the trees kills them in the winter.—A. H.

4709.—Gathering Mushrooms.—Will someone kindly say how natural Mushrooms should be gathered? Should the heads be cut off and the stalks left in the ground? This is the usual way, but it is said that the stalk, if left in the ground as it decays, destroys the adjacent spores. Which is right? Again it is said—Do not gather your Mushrooms too closely, but always leave some. If you gather all you can you will have no crop next year. Is there anything in this?—G. H. T.

4710.—Climbing Roses.—I have two Roses, apparently climbers from the long, thin shoots they are sending. They flowered white, with four or five buds in a cluster, very small and semi-double. How should I treat them to improve size of flowers and habit? They face east and are in a narrow corner. Have I in part stems of four Rose-plants, vigorous growers. One last year I cut down to the ground; another I layered all round; the others I left alone, and they have sent shoots yards long up the wall and all over the place, but not a flower has ever appeared. Faces south, in shelter; end of shoots always covered with green-fly. What can I do with such rubbish? Enclosure C, vigorous dwarf, out a flower. What is it? Have used peat-killer from slugs, but kept long, and house slugs.—Old Sailor.

4711.—Various Roses.—I, I have thirty or forty Rose-trees, planted two years ago, various sorts, growing vigorously, but flowering very little. Will they be planted too deep, as I put them in myself, and from what I have heard and read from your paper I have been uneasy all summer about this? Would it do to replant near the surface this winter? Would it be advisable to cut up a bushy plant with branching root, and stems growing direct from root? Several that I planted had very large roots compared to the pencil thickness of the stems. They have never flowered (smooth stem). As I expect you to say "cut them out," would they do to bud or graft? 2. Recommend me a few Roses that would bloom well in the hands of an amateur—not-and-come-again sorts, albinos or dwafs, white or black, but Roses.—Old Sailor.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

4712.—Mushrooms (A. E. P.).—These are not the true Mushroom *Agaricus campestris*, but the clove ally, *A. aversana* (the Horse Mushroom). It is excellent, and very good both for frying and ketchup making. Examples from under trees are sometimes a little indigestible.—W. G. S.

4713.—*Odontoglossum crispum* (R. C. F.).—This flower is not the true species—you may tell it by the lip being long and narrow; but it is one of the natural hybrids of which we have had so many crop out from amongst the imported crispums without being entombed! I should like to see a very pretty variety, and will deserve attention. You may call it what you please.—M. B.

4714.—New Zealand Flax (*Antipodes*).—You should take the plant or plants up from the open border and pot them. I have seen fine specimens stand out-of-doors in Ireland unharmed, but I do not think they would do so in the county of Hertfordshire. It makes a splendid plant for the decoration of a cold-house in winter as it requires but slight shelter to protect it from the wintry weather.—J. J.

4715.—*Maxillaria venusta* (J. Bishop).—This is undoubtedly the name of the flowers you send; but I think it is rather casual time to see it in bloom. It should be kept in the cool-house with the *Odontoglossum grandiflorum* is similar, and about the same colour, but the flowers stand up erect, which the blooms of the kind you send do not, therefore *M. grandiflora* is, I think, the most desirable kind.—M. B.

4716.—Treatment of *Dendrobium* (*James Treardwell*).—Yes; all plants such as *D. Wardianum* and *Peirardii* and the like should be kept in a cool-house at present. They may be hung up in the sunshine near in the roof glass, water being entirely withheld. *D. crassinode* and other earlier bloomers will require to be removed into more warmth somewhat before *Wardianum* and some others, of which you will see some remarks at a future time.—M. B.

4717.—*Odontoglossum grande* (G. B.).—I am thankful to my friend for sending me a flower of the species and glad to find he has done so well by following my instructions. I have given him the name required, and say the flower sent represents a very good variety of the plant. I have had specimens with some twenty and thirty flowers all open at one time, which is a sight worth seeing, and my employer years ago called them "Tiger-flowers."—M. B.

4718.—*Zygopetalum Gauthieri*.—*James Brown* sends this for a name, which I here give. It is a fine form of the species known by the name of *Z. maxillaria*, which produces a rich violet-blue lip, a colour which is rare in orchids, and is always highly prized. It grows on the living stems of Tree-Ferns, and, as these are warm-house species, it is best to grow them upon one which will thrive and give shade to this plant and to various others which stand in the vicinity.—M. B.

4719.—The coming winter.—*Thos. Carson* writes me a long letter asking my opinion respecting the winter that is coming; but I do not aspire to the gift of prophecy, and so cannot answer your questions. The fact of the weather being so abnormal would rather upset the nerves of anyone, so I attribute the fears and predictions of "T. C." to this cause. I advise you to have everything set in order and in readiness for the severe weather you anticipate, and all will be well; but do not repeat the letters for a "prophet has no honour in his own country."

4720.—**Cost of an Orchid collection (M. J.).**—This is a very difficult question to answer in a definite form as so much depends upon what one calls a collection. Some would say a dozen kinds was a good collection, whilst others would require hundreds of species to form a collection; but if "M. J." would take, say, a £5 or a £10 note to some nurseryman known to have a large quantity of Orchids, say he was a beginner in Orchid growing, he would be treated well, and he should advise him of the heat he has at command so that he could better fit him with those which would suit him.—M. J.

4721.—**Dendrobium nobile (No Name).**—If the plant has done growing the plant should be kept cool and tolerably dry; but if the growth is not yet made up it should be placed in the warmth until it has, when it should be placed in the cool and kept tolerably dry; but as this species does not flower upon the wood it has just made, but upon that of the previous year, it must not be kept so dry as to cause the growths to shrivel from some cause, either accidental or from some mismanagement. They do sometimes produce their flowers upon the stems of the current year's growth, with their leaves upon them.—M. J.

4722.—**Oncidium Crosses.**—James Charlton sends a flower of this plant for a name, saying it was brought with some others from Jamaica by a friend of his, which might be true; but yet it may not be a native of that island, and this would not be the first time that an Orchid was found in that island that was an introduced species. I do not know if anyone has divulged the spot whence this plant comes, but it is usually considered to be a native of the Organ Mountains, near to Rio Janeiro. It is rare in collections. The flower is of a beautiful bright golden-yellow, having a dark blackish-purple band round the crest of the lip. It should be grown on a block of wood or in a very small earthenware hanging-pan; it requires the heat of the Cattle-house.—M. J.

NAMES OF PLANTS AND FRUITS.

* Any communications respecting plants or fruits sent to me should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C.

Names of plants.—Down East.—1, *Cyrtium* Fortunei; 2, *Adiantum Ghiesbreghtii*; 3, *Adiantum concinnum*; 4, *Aspidium tuberosum*.—G. B.—1, *Chontoglossum grande*.—James Brown.—*Zygopetalum Gaultieri*.—A. Scott, Northumberland.—1, *Pteris arvensis*; 2, *Asplenium fimbriaefolium*; 3, *Cyperus alternifolius*; 4, *Pteris serrulata*; 5, *Phlebodium aureum*; 6, *Polyadichum Woolastonii*; 7, *Adiantum cuneatum*; 8, *Anthericum variegatum*; 9, *Anemula*; send when fertile; 10, *Cissampelos*; send fertile specimen.—H. Breckton.—1, *Nephrolepis pedunculata*; 2, *Asplenium elatum*; 3, *Pteris escharella*; 4, *Myriophyllum verticillatum*; 5, *Phacopleris hastifolia*; 6, *Gomopteris latragona*.—Rogers.—1, *Lycopodium obtusatum*; 2, *L. alpinum*; 3, *Athyrium filix-femina*, broad-placed variety; 4, *Aspidium foetidanum*.

BEEES.

SEASONABLE NOTES.

IN the successful wintering of Bees much depends upon stocks being strong in numbers, and heavy in stores. Stocks that are not strong should now be joined two or three together. Bar-frame hives can be strengthened by introducing combs of brood from very strong stocks, or two colonies can be united by placing the combs of one hive with the adhering Bees in the midst of the colony it is wished to join them to. Stimulative feeding may now be carried on in order to induce the queen to continue laying, and thus ensure a number of young Bees for wintering. Feeding should be discontinued before the end of October. The syrup used for stimulative feeding should consist of sugar and water, the proportions being 7 pints of water to 10 lb. of sugar; that for feeding up for winter, 5 pints of water to 10 lb. of sugar, boiled for a few minutes, with the addition of an ounce of vinegar and half an ounce of salt.

UNITING STOCKS IN STRAW SKEPS.—Bees know each other by scent; if, therefore, all that are to be united be first sprinkled with minted syrup, it prevents them discovering which are strangers, and so no fighting takes place. In uniting, we therefore smoke and turn up the skep containing the Bees that have been driven, and sprinkle them with thin syrup scented with peppermint, then smoke the stock to which they are to be united, and sprinkle these Bees also with scented syrup, propping up the edge of the hive with a wedge or stone, then with a sharp and sudden movement throw the driven Bees against its entrance, first spreading a newspaper or cloth in front to receive them, they will run into the skep and become peacefully united, or the driven Bees may be shaken upon the combs of the stock hive, the latter, of course, having been first inverted, and then replaced upon its stand, propped up a little to prevent the crushing of the Bees that are on its edges. The queen, if possible, should be removed from the driven lot. The two hives, that are to be united should be previously brought gradually

together, about 3 feet per day. If a hive be moved a greater distance than 3 feet daily, many Bees will be unable to find their home on their return from the fields and the loss of Bee life will be great.

DRIVING CONDEMNED BEES.—Driving stocks of Bees to save them from the old-fashioned and cruel "brimstone pit performance" mostly practised by cottagers, is much to be commended. The skep to be operated upon should first have a little smoke blown into the entrance; this will alarm the Bees and cause them to fill themselves with honey from the unsealed cells. In this gorged condition they become quiet and easy to manipulate. The skep may then with safety be inverted and placed in a pan or pail to steady it; a flat-topped skip can of course be placed on a flat surface. Then an empty skep is placed upon the stock skep, bringing the edges together at the point toward which the combs run, and an iron skewer pushed through the run of the empty skep into the one below, forming a kind of hinge, and a strip of wood with nails in the ends, or "driving-iron," if used, are fixed on either side to keep the empty skip up like an open lid. The sides of the stock hive are then rapped upon with the open hands all round with sufficient force to jar the combs without displacing them. A loud buzzing is soon heard, and the Bees are seen rushing up into the upper story. If a sharp look out be kept, the queen can be secured while going up in the crowd. The skep of honey is thus secured with little or no loss of Bee life. The Bees can then be united to other stocks, which will greatly strengthen them for the winter.

PREPARING HIVES FOR WINTERING.—Abundance of sealed stores, a prolific queen, a large number of young Bees, and sufficient ventilation in the hive without draught are the main points to be observed in preparing stocks for winter. Coverings for frames may consist of two or three thicknesses of sacking, upon which may be placed a piece of thick carpet or felt. Where enamel cloths have been used over the tops of frames they should now be removed, and the propolis scraped from the top bars before placing on the winter coverings. A bottomless box, the size of the top of the hive, 4 inches deep, having a piece of calico tacked on to the bottom, and filled with cork-dust or chaff, makes a good winter cover in place of quilts. Double walled hives may have the spaces filled with cork-dust to assist in keeping an even temperature within the hive, and to prevent the escape of heat. A strong stock should be wintered in eight or ten frames of comb, two-thirds of which should contain sealed food. Combs of pollen weigh almost as much as those filled with honey, and as pollen is much more abundantly stored in some hives than in others, the weight of a hive is not a safe criterion. The quantity of honey sufficient for wintering upon can only be decided by inspection. It is not wise to leave any hive for the winter with less than 20 pounds of stores.

S. S. G.

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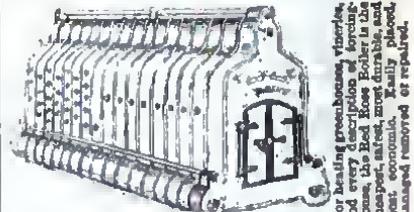


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GARDENING ILLUSTRATED.

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Founded by W. Robinson, Author of "The English Flower Garden."

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THE "FLOWER GARDEN" AT KEW.

I HOPE the improvements so manifest as regards hardy flowers in many parts of the pleasure grounds at Kew will not stop at the flower garden in front of the Palm-house. Two large beds of common Beetroot form the central feature of this, and masses of flowerless Pelargoniums and dots and stripes of red and blue are not worthy a place as a flower garden in the Royal Gardens at Kew. If the idea existed that a garden in such a position cannot be made beautiful through the aid of nobler types of vegetation, it is quite erroneous. That is a position above all others in which beautiful things, gracefully grouped and well grown, would tell best. The scarlet Pelargonium in the dry soil of Kew is as well worthy of a place as any other flower, but it is only one of the many beautiful things that should find a summer home there. Some of the prettiest beds of half-hardy flowers as in the parks might well find a place here, and are far before the Beetroot, &c., of the present year. In such a flower garden it would be well to see the best of the half-hardy flowers also. Moreover, where the collection is so rich in sub-tropical and other half-hardy Palms, Oranges, Oleanders, Datura, and many beautiful plants which enjoy, and are all the better for, a sojourn in the open air during the summer, it would be well to make artistic use of them, and put them in groups not only in the flower garden, but also in the unused parts of that waste of gravel around the Palm-house. So, too, that piece of water between the museum and the Palm-house should be a garden of handsome water flowers which no Victoria regia house in the world would equal in beauty. Not only Water Lilies and beautiful water flowers of the northern world have we to enrich such water now, but, owing to our friend M. Latour-Marillac, we have a noble series of hardy hybrids, groups of which in such a position would give delightful pictures. The nucleus water-fowl should be taken somewhere else—to the Zoo, perhaps. The banks of this water should be planted with the many fine plants, such as *Spiræa venusta*, which delight in the waterside, flower at the same time as the Water Lilies, and would form with them a garden worth seeing. The flowering herbaceous plants for the waterside are numerous and handsome, and, seen in bloom at the same season as the Water Lilies, give offsets which few people have any idea that gardens are capable of. Then, alter the Iris and Globe flowers and other handsome flowers of the waterside, there are many plants with fine habit, as the Gunners, great Reeds, some hardy and free Bamboos, Royal Ferns, great Water Dock and Bulrushes, and the more graceful and smaller Reeds, Arrowheads and Reed Mace. I not only wish these things for themselves, but for the good it would do in the minds of the many people who see Kew. Unhappily, the idea that a flower garden can only be formed of a few things in a stiff way is still very common even in the "fine places" in the home counties, and a real flower garden at Kew would do much to

dispel it. Thousands of gardens would be benefited for good if the right thing were done in the flower garden at Kew, and it is very easy to do it there. W. R.

CHRYSANTHEMUMS.

CHRYSANTHEMUMS FOR SHOW.

4619.—Below I give the names, as desired, of twenty-four varieties, all suitable for exhibition, and of fairly easy growth. It would be impossible in a short note like this to give details of culture during the whole season; all I can do is to give the salient points in the cultivation of the plants for large blooms. Stout sucker-like growths, 3 inches long, make suitable cuttings. These, taken off and inserted singly in 2½-inch pots in sandy soil any time during the month of December, will lay the foundation for future blooms. At no time during their early stages of growth should Chrysanthemums have artificial heat. The cooler the quarters the more stocky the growth, and less liable to injury from wind also. Do not top the plants at all, but allow them to grow away uninterceptedly until they make their first natural break, from which three of the best shoots are selected upon each plant, removing all other growths as fast as they appear. Eventually then each plant will carry three blooms. Shift the plants on into larger pots until those 9 inches or 10 inches in diameter are reached. A compost of three parts fibry-leaf-mould to one each of partly decayed horse-manure and leaf-mould, with sufficient sand and charcoal to keep the whole porous. Press the soil firmly into the pots to induce the plants to make stocky growth. An open position should be provided for the plants during the summer, where they would make growth that should not be troublesome to masters. Remove the plants indoors before they are caught by an early frost. A position near to the glass is best. The soil in the pots should be kept constantly moist, varying the clean water with liquid-manure every third day. Insects and mildew must not be allowed to obtain a firm footing, or the growth will be checked. Tobacco-powder dusted on the parts affected will generally destroy the former, while flowers of sulphur will destroy the germs of mildew on the leaves if it be sprinkled on the parts affected. Japanese: *Avalanche* (white), *Sunflower* (yellow), *Edwin Molyneux* (orange and gold), *Vivisud Merle* (bluish-mauve), *Col. W. B. Smith* (old-gold-yellow, suffused with terra-cotta), *Mrs. Falconer Jameson* (orange-red and gold), *W. H. Lincoln* (golden-yellow), *Beauty of Exmouth* (ivory-white), *Etoile de Lyon* (deep lilac-rose), *Mons. Bernard* (purple-violet), *William Seward* (intense velvety-crimson), *Mrs. A. Hardy* (pure-white, with bluish forets), *Incurved*: *Empress of India* (white), *Queen of England* (bluish-white), *Lord Alcester* (primrose), *Alfred Salter* (clear lilac-pink), *Hero of Stoke Newington* (rosy-pink), *Jeanne d'Arc* (bluish-white, tipped purple), *Miscellaneous*: *Haggas* (soft-white), *Princess of Wales* (pale-rose), *Violet Tomlin* (bright violet-purple), *Prince Alfred* (rose-carmine), *Mrs. Norman*

Davis (rich golden-yellow), *Mrs. S. Coleman* (bright-rose, shaded yellow in the centre).—E. M.

4608.—**Chrysanthemum from seed.**—"Intersected One" would do much better to buy a packet of seed from a reliable source than attempt to save seed himself. Specially built houses are required to save seed really well, and some art is necessary in hybridising the blooms properly to obtain the right kind of cross. Sow the seed in a box of sandy soil at the end of February in a gentle heat, covering the box with a piece of glass to arrest the evaporation of moisture from the soil. Directly the plants are large enough to handle, pot them off singly in thumbs, place them on a shelf close to the glass in a temperature of 55 degs. When the pots are full of roots shift the plants into pots 4 inches in diameter and again into others 7 inches across, using a compost of loam two parts, one of partly decayed horse-manure, with sand enough to keep the whole porous. At the second potting give the plants cooler treatment, finally placing them out-of-doors with the remainder of this family in an open, sunny position. One great aim all the way through is to induce a stocky habit of growth. When the plants make their first natural break, by the formation of a bloom-bud at the point of single stem, three additional shoots should be selected, tying them loosely to one stake in the centre, removing all other growths as fast as they are made, restricting the growth to these selected shoots. Each will bear one bloom in the centre, other beds will form at the side; but if large blooms only are desired, remove all but that in the centre. Place the plants under cover upon the appearance of frost, and give them a light position in a cool-house where they are to flower.—E. M.

4665.—**Carnation-seed.**—This has been a capital season for work of this kind, as the plants bloomed early and well, and the weather being so hot and dry the seed formed freely and, ripened in good time. I gathered my small harvest nearly a month ago; the pods have since been drying off on a sunny shelf, and the seed has just been shaken out. In a general way it is necessary to fertilize the blossoms artificially—those of the fine-named kinds at any rate—and even then if the weather is wet the seed will come to nothing. The best way to insure a crop of seed is to grow the plants in pots under glass, and then with the aid of a little heat in cold or wet weather they can scarcely fail to produce seed. The hard conical seed-pods must take on a deep yellow colour before they are fit to gather.—B. C. R.

—The best seed is not easily saved, as the fuller and better the flowers are so much the more difficult is it to find pollen to fertilise them with. Harrison Weir and Mrs. Reynolds Hole are not the most difficult to obtain seed from. The seed will always take about two months to ripen, and it is no use taking the pods off the plant before the seed is nearly ripe. If the pods are opened it will be seen that the seed has changed in colour, and become blackish even before the pod itself has changed. The seed is generally ripe when the pods become brownish at the top.—J. D. E.

GARDEN WORK.

Conservatory.

To a certain extent the house will be given up to the Chrysanthemum, as the main care will be made suitable for their wants. This means that just enough warmth will be maintained in the pipes to dissipate damp and permit of the ventilators being nearly always open, more or less. This, again, should be arranged that full air is given on fine, bright days, with perhaps just a crack left on at night. I do not think any Chrysanthemum-house should be altogether closed. The large number of plants which are now grown, and the high accommodation has to be found, renders it obligatory upon the cultivator to stage his plants close together, and this of itself will generate damp, and if the air-giving is not well understood, not only the leaves will go off prematurely, but the flowers also. Damp is worse than frost. I think, in the arrangement of the plants in the house, the Chrysanthemums should be levied into groups by themselves, and the other plants, such as Zonal Geraniums, Tree-Carolines, Hoveyellas, Scabunums, Primulas (how very charming the Primula obconica is! What a pity it has a bad character!), Heaths, &c., should be grouped near the paths or close to the front lights. I generally, as far as possible, keep such things as Primulas, Cyclamens, Carnations, and lored bulbs back in other houses until the early autumn show of Chrysanthemums is over. The later flowers will be in less quantities, and by the end of November the Chrysanthemum frays will be over, and we shall be mad for other flowers. So far as regards flowers for cutting, the Chrysanthemum season cannot be too long, but to the conservatory one is not sorry when the glut is over and the lored flowers bring in a polish and sweeter of a different type. Whilst the big flowers are in the house everything else is dwarfed, so to speak. Groups of Mignonettes or Cyclamens are nowhere in the competition; but when the Chrysanthemums are thinned down one can better appreciate the smaller matters. The charm of the lored flowers is Hyacinths, mixed with Maiden-hair Ferns, are irresistible in some quiet corners, and the old-fashioned Corollid glaucosa and its variegated variety are useful when flowers are scarce. Begonias will be best kept back in reserve till the Chrysanthemums are on the wane. Good-sized bushes of Begonia insignis are very responsive at Christmas and later. I find young early-struck cuttings flower so much better than old plants, and I have specimens as required, but those of late years are a little pitiful, and the branches out a little. Tois Begonia is so good both for the conservatory and for cutting that it might be grown very largely when a bright state of things is required about Christmas and the New Year.

Stove.

This is usually the most interesting house in the garden at this season. There is generally plenty of colour in both leaf and blossom. Some of the earliest Poinsettias may be taken to the conservatory. A temperature of 60 degs. at night will be high enough to preserve the scarlet bracts for some time, and where Poliolepis are grown largely it will be with the view of utilizing the plants in the conservatory and for cutting. Cypripediums, after the flowers are out, may be taken to the conservatory or be used in the rooms. These are among the most useful plants for the small grower, so far as regards Poinsettias, are not difficult to manage, and the flowers last so long. Drodium noble and others which have been well ripened in a cooler house may now be brought back, and in the stove will soon throw out their blossoms all up the sides of the long pseudo bulbs. This is one of the Droids whom all having much demand for winter flowers should grow largely. Cologoye orlets is another Orchid which may easily be grown in a mixed collection in quantity, as they are getting cheaper, and will soon come within the reach of all. Competition among amateurs and growers will do this. The wonder is that with the immense stocks in the country, Orchids have not become cheaper than they are; but the demand for, and the high prices obtained for, choice Orchid flowers makes it profitable to grow Orchids for the flowers alone.

Unheated greenhouse.

Yucca in variety are very effective in pots. Y. aloifolia variegata is one of the best for network, and will be kept safely in a cool-house. Should the frost be severe and prolonged, draw the leaves together and wrap a piece of matting round it. Dracena Indivaria may be kept in this way if the pots are plunged or surrounded with something which will keep out frost. At the present moment the owner of the unheated conservatory is to clover; his Chrysanthemums are doing well, and he is not worried about the price of oats or coal. In all cases where the unheated house is a small one it will pay to make a cover of heavy cloth that can be drawn over the roof and tied to hooks screwed to the house. A few shillings will buy cloth enough to cover a good-sized house, and with care, using it only in frosty weather, it will last several years, and if, in addition to the cover, one likes to set up an oil-stove or lamp, the cost of the cover will pay for itself. This matter of covering on cold nights is worth consideration even by those who have a hot-water boiler and pipes.

Ferns under Glass.

Ferns can never be allowed to get dust-dry without suffering injury. It is perfectly true that this season Maidenhair and other Ferns which have lost form and colour are to a certain extent dried off and then set down, and for the time being it does no harm; but I should not recommend a regular practice to be made of this drying off of evergreen plants. The temperatures for stove or tropical Ferns will now be about 60 degs. at night; 45 degs. to 50 degs. by day for the greenhouse species. Ferns are not so difficult to grow in a Fernery as where the atmospheric conditions are right, seedling Ferns spring up all over the place. I have one house of considerable size now filled chiefly with Ferns, and all along under the stage seedling Ferns are springing up in great numbers. No care at all has been taken with them, although I know, of course, that seedling Ferns would grow there in large numbers.

* In sold on northern markets the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.

Strawberry Plants for Forcing.

These should now be plunged in ashes or some equivalent. Plunge up to the top of the rim and press the frost over the pots. This, if about possible, be covered with old light to throw off heavy rains; this will do even better than being placed in frames. Strawberries are hardy enough if the roots are protected.

Window Gardening.

Recently potted up stuff must be kept on the side of dryness—not too dry, of course; but even this will be better than the saturation point on a saturated soil at this season some rats sour, and then the roots will not penetrate it. The only plants which are worth potting up later to the season are "Goraleum" and Pachista, and the last-named may, if protected, be left in the ground all winter. Do not let Palms get too dry; it is not well to go from one extreme to the other. Much good will be done by speeing the foliage.

Outdoor Garden.

The Dahlia have had a pretty good time this season. At the time of writing my beds of Dahlias are very full of blossoms. It is a pity that a slight night's frost will spoil all this beauty. They will have a demand for cut flowers might find an advantage in growing some of the dwarf Pompones and Cactus varieties in pots. In some instances where I have seen this done the success has been very encouraging. The pots may be plunged out in summer. While Dahlias are always in demand for decoration. As soon as the frost becomes the growth of the plants in the beds, cut down the tops and dig up the plants, and after being cleaned, set away in a dry place, safe from frost. Hollyhock-outings should now be potted up in single pots and plunged in a cold pit or frame. Cuttings with me have been very successful: the losses have not been 5 per cent. Tuberos Begonias should be lifted out of the bed now. It is best to take them up before the frost injures them, though they are not at all delicate if not oodled to heat. The tubers may be set in a sand in a dry pan. All the warmth required is to keep the plants above freezing-point, and also cover heavily with mats or straw when the frost sets in sharp. Geonias may be kept with almost as little trouble as Begonias, but do not let the frost bite them too hard before lifting them. Chrysanthemums against walls must be properly secured. It would be easy and not expensive to protect the plants on walls with tiffany or canvas when the frost comes, and Chrysanthemums play such an important part in our home-decoration work anything possible should be done to save them. Any Violets now yet put in frames or pots for winter should have attention at once. Only those plants which have been grown thickly are worth lifting.

Fruit Garden.

Frost root pruning. Young trees which are making too much growth may be lifted and replanted others in the same or other positions, as desired, the leaves are ripe, without waiting for them to fall. Wall-trees, such as Peaches and Apricots, may have the roots lifted and brought near the surface, if the character of the summer growth has been too gross. When a tree makes wood which is too strong to ripen properly, give attention to the roots by lifting in the case of young trees, and by working under the ball and cutting the downward roots in the case of old trees which cannot be managed in any other way. Continue to make preparations for planting young trees wherever there is room. There may be rather too many Apples and Peers in some gardens this year perhaps, but in a general way we are so much first-class fruit, especially our own as all market gardeners. In very old gardens the fruit-trees are often in a bad condition, and the thing is omitted, because the work, if properly done, means expedition. In such cases the old trees should be grubbed out, the borders removed, and a young tree planted. It may not be possible to do all in one, or even to two years, but, whatever is done, do it well, and then the result will be satisfactory. It is time now to gather all the late Peers and Apples. In most gardens I expect this work is completed, as the season is an early one, and the leaves are falling early. It is time all late Grapes were ripe now, even where fire-heat has not been much used. Keep all foliage in late varieties clear of the glass, and promptly remove decaying berries, should any appear.

Vegetable Garden.

Aparagus seeds are out often now in autumn, but there is nothing lost, and perhaps something gained, by sowing as soon as the seeds are ripe. Green Beal is ordinarily always in demand for forcing, or, at least, it could be had. The plants which were out down in summer, potted up now will be useful for picking from during the first part of the winter. A supply of Green Tarragon and Chervil should also be thought of. All plants, such as Cardoons, Celery, Leeks, and salad plants, which require blanching before fit for use, should be closely watched now, as every very fine day taken advantage of. Onion-hills in heated houses intended for winter use should be kept high, and the plants should be kept to the stem to be kept within bounds. This planting is a disadvantage if the plants are to do mental work through the winter, and I never stop the leading shoots till they have travelled several feet up the rafters. It adds so much to the vigour of the plants if they are allowed to have their heads a little at the beginning. Sprinklings of fresh turfy compost are very desirable. It tends to keep the atmosphere pure and fresh, as well as affording support to the plants. Getting a vegetable garden for mixed pickles. These will include Cauliflowers, small Onions, Chilies, Radish-pods, &c. Lettuces and Endive which are full grown, or nearly so, must be protected in some way. Where there are spare frames the plants ought to be filled with balls of earth and planted therein, though they will be quite as safe some time yet outside if covered on frosty nights with dry Fern or old mats, or canvas laid over the plants will be sufficient for some time to come.

K Hoenar.

Work in the Town Garden.

The continued mild weather is extremely favourable to the development of autumn-flowering plants. The frequent frosts, too, have retarded things generally, in a remarkable manner, and gardeners that receive a fair amount of frost are looking better now than at any time during the season. The autumnal tints of the early or middle-flowering varieties are blooming splendidly, the plants

being dwarfed than usual, but the blossoms not so extra forward as might have been expected from the forcing character of the season. The Michaelmas Daisies, again, are flowering later than usual, but very finely, and with the stately and beautiful Pyrethrum uliginosum (by the way, I ever live of admiring this most elegant and graceful plant), Dahlias, Japanese Anemones, African and French Marigolds, and late plants of the Torch Lilies render the garden still as gay or gayer than ever. Begonias, too, are brighter and fuller of flower than ever. This, too, yet mild, moist, and showery weather is just what they fairly revel in, and only that so many of the plants and the seedlings of this year in particular received such a check from the scorching they had in August, the beds would indeed present a grand appearance. Cow-Whorrels are capital town plants, and a nice batch of the different shrubby varieties, grown in 5-inch or 6-inch pots, are invaluable for larding window-boxes, conservatory decoration, and so forth. For the former purpose use dwarf plants of the evergreen Eucynema in variety, Aucuba, Box, small Conifers, &c., are all very well, and, indeed, Iodipsea when there is nothing else to be had; but as long as it is possible I like to have at least a few flowers, if only in the front row, of dwarf Chrysanthemums of the large or medium kinds from cuttings inserted in July, or if not taken in August, will now be very useful, both for window-boxes and conservatory decoration. It is really surprising how well such plants bloom, considering the time and manner of propagation, but it is not uncommon for plants but little more than a foot in height, in 5-inch pots, to carry three or four flowers, each nearly as large as the top of the pot itself. Do not be too late in taking cuttings, as they should have a race of large-flowered Chrysanthemums that can be grown in the ordinary way to a height of 2 feet or 3 feet only, but in the meantime these late-struck cuttings are extremely useful, and so are the out-down plants. It is somewhat surprising that this last-named method is not more generally adopted, by those whose houses are of low pitch particularly, but I think the drawback is that people are really afraid to cut their plants down to the necessary number. Whilst the roots of the greenhouse or conservatory are thickly covered with climbers these should now be raduced as far as possible, as the plants beneath will need all the light and air they can get for the next few months.

B. C. R.

THE COMING WEEK'S WORK.

Extracts from a garden diary from October 21st to October 23rd.

Rearranged one of the herbaceous borders. The plants have been several years without removal, and some have outgrown their positions, and a few, including several Phloxes which are superseded by better kinds of the same species, will not be again planted. Carnations will be more freely planted. The borders have been cut well and matted, and in replanting groups varying in size will be planted instead of so many single plants. Half a dozen plants are more effective than one or two, but in the case of small-growing things more than half a dozen may be used to form a group—in fact, there need be no special number. We shall make the groups to fit the position. I dislike regular planting, and I also dislike straight, formal borders. These straight borders are a remnant of conventional gardening of the past. In the present case the border is not a formal one; it is backed up with shrubs, some of which jut out into the border. I find these recesses very effective when filled with such plants as White Lilies, Delphiniums, Hollyhocks, Tritomas, and other tall things which look well in masses. In front of these come masses of Anemom japonica, Phloxes, single and double Sun-flowers, Pyrethrum uliginosum, very effective in a large way. Just behind the Phloxes and Anemones these borders plant to flower are not disturbed. I always find late-blooming outsets are best transplanted in February, or later, and the early-flowering things in autumn, and no garden is furnished properly without Gaillardias, and the flowers are so valuable for cutting. A good batch in a border of Gaillardia grandiflora furnishes a handful of flowers whenever required. Laid down late Broccoli with heads to the north, hanging up the stems in a large airy shed. This has been touched and well manured, and the most vulnerable parts. Yelch's Autumn Broccoli have been laid in cold pits, a few being left in the beds to take their chance. It takes a sharp frost to injure the hearts, so the leaves fold over closely. Finished earthing up Celery and Leeks. Tied up more Lettuces and Endive to come on in succession. We have a heap of dry Bracken to use of the sheds, and should frost set in the Bracken can be laid over the plants to a few minutes, and no harm will be done. This dry Bracken is found very useful for protecting Tra Roses, or to place over and around anything tender, or supposed to be tender, and it is one of the best protectors for cold pits in which tender plants are stored. The houses in which the Chrysanthemums are placed are still very freely ventilated, and being also kept closed at night. It is important that the leaves be kept healthy to the last, and the canes kept in a frosty, well-lit house with the frost just kept out. Manured and fringed a piece of land for planting out Brack-stocks for budding. It is always desirable to get them out as early in the season as possible. It is also very desirable to deal liberally with the stock, and there are always fewer deaths when the surface receives a liberal mulch of manure. Moved Cinerarias from cold pit to cool house. The early plants are now receiving liquid manure, weak, at every watering. Finished pruning Vines in early house. Finished the Seedling in a very useful Grape-vine lored, and it sets well, and does well in pots, but it is no use, the berries being too small, except for the first early crop. I think more might be done with Golden Queen where Muscats cannot be grown.

4643.—Colours of Violets.—Marie Louise (mauve-lavender-blue, with white eye), Comte de Brzesz (double white), Mme. Millet (tinted purple, shaded red), De Parmo (pale lavender-purple)—E. H. Marie Louise is one of the best of Violets, and a great favourite with all who care for these flowers. The colour is a delicate blue, with a white eye. Comte de Brzesz has white flowers, Mme. Millet is reddish-purple, and on the lavender side, and De Parmo is a very purple-lavender. Very pleasing shade of colour.—C. T.

FERNS.

TASTEFUL FERNERIES.

By the exercise of a little taste in grouping suitable plants together with Ferns, the effect of both is considerably heightened—a fact that should not be lost sight of by all who intend to take in hand the arrangement of the plants in a fernery or conservatory in a natural and easy manner. This grouping is a practice heppily gaining ground, and one that, well carried out, cannot be too much commended. The rockery over the little pool in the fernery in our illustration is composed of a porous stone, and the Ferns and Mosses sow themselves in abundance all over it. The little fringe round the edge is almost entirely covered with self-sown plants, growing simply

in Sweden, his native country, as it is in almost all parts of Europe. I have, however, never been fortunate enough to see it wild in Ireland, although I have searched for it in its recorded habitats. Bernhardt, who was a professor of botany at Erlint, in Germany, removed it to the present genus early in the present century, because it had no special indusium or covering for the sori, which is a special feature in *Pteris*. It is, however, a lovely British Fern, having a slender, creeping rhizome, from which the fronds are produced. These fronds are deciduous, and the plant, although perfectly hardy, will not thrive in the open air where "Miss C." posted her letter from. I should the rather advise her to put the plant or plants into a well-drained pot and place the roots between some pieces of sandstone mixed with loam, and to

of ashes under the turf. If the soil is dug deeply over and made perfectly level, rolling it down quite firm before the turf is laid. Any irregularities of the ground will be so much more easily seen when the turf is laid than before. If "Daydon" decides to sow seed, the soil should be dug up roughly, allowing the weather to pulverise it thoroughly. Choose a dry day about the middle of March to finally level it and rake off any stones from the surface. Lawn Grass seed should be sown at the rate of 80 lb. to the acre; it is better to sow the seed thickly than otherwise. The early part of April is a good time to sow the seed, choosing, if possible, a day previous to a shower. A tonis-lawn made from freshly-cut turf, or even from seed, cannot be rolled too much, providing the weather is suitable.—S. P.



Rock pool in a fernery.

on the rock without soil, the roots of many hanging down in the water. C.

THE PARSLEY FERN (ALLOSORUS CRISPUS).

I CANNOT say why this plant received its English name, for certainly I never could see any resemblance to Parsley in it; but, nevertheless, it is one of the most beautiful plants that I know. I am asked the above question by "Emma Chadwick," who, it appears, has collected some plants in Devonshire, and brought them into the South of London, and she asks if it will grow in the open air, and she also enquires if there are any recorded varieties of it? Well, to all these questions I will commence with the last one first, and that is, I have not noticed any variation in the plant wherever I have seen it worth recording, and I have gathered it in Scotland at good elevations; also in Westmoreland and in Lancashire, and in North Wales. This is the plant which Linnæus called *Pteris crispus*, and it is found plentifully enough

keep this in a cold house, or a cool greenhouse; the fronds will soon die off, and the plant can be kept in a nice moist friable condition, which will preserve the slender rhizomes sound and well, and towards the end of April or the beginning of May the bright-green fronds will begin to appear, and charm every beholder; these in the sterile ones are somewhat spreading, but the fertile ones are erect, and the underside is wholly spermatiferous, having a slight difference. It does not like the sun, but delights in a moist shady place, but foul air or stagnant moisture must be avoided. J. J.

4063.—Making a tennis-lawn.—To make a lawn fit to play upon by sowing seed will require at least ten months from the present time before it is in a fit condition to use. By laying down turf it will be in good condition as early next year as it is required. Whether it is made with turf now or seed sown next April it should be drained if there is the slightest chance of water laying under it from heavy rains. A gravelly soil requires no addition in the shape

407.—Campanulas in pots.—Perhaps you are too impatient, as Campanulas, as a rule, are very easily grown, and a few slips taken off strike easily even in a window, blooming freely when the plants get a fair size. In cottage windows, especially, one sees them in perfection, and there is a large number of types—*C. Barrelieri*, *C. fragilis*, and others. *C. Barrelieri* is a drooping variety, like all the others for this purpose, and blooms with very great freedom, the flowers like little stars, and blue in colour. The shoots trail about delightfully, hanging down for some way over the pots or baskets as the case may be, and bearing blooms with remarkable freedom. It is on that account very suitable for suspended pots or baskets. *C. carpatius* is, I think, the species most commonly grown. The flowers are comparatively large, and of a blue colour in the type, but those of the variety *alba* are, as suggested by the name, white. I have also seen *C.*, or as it is more often called, *Platyodon grandiflorum*, very well grown in baskets, the large flowers almost hiding the growth. Its shoots, when the growth is robust, will sometimes hang down quite 2 feet, and make a brave show of colour. But the two best for windows or baskets are *C. isophylla* and the white form, the type being a blue-flowered kind. This is very easily grown, and is exceptionally free. A moderately light but rich soil should be used for Campanulas—say made up of loam, peat, and leaf-mould in equal portions, whilst a fair amount of sand should be added. You must not pot firmly, which is different to general practice, and abundance of water is required. It is quite a mistake to think that there are any difficulties to overcome, as from first to last their culture is not easy. During the winter the soil must be kept drier than in summer, and when the spring comes large plants may be divided and others potted on. Too much sun is hurtful. You need not have larger pots than 5-inch size, and let the shoots hang down gracefully all round.—C. T.

All of this family thrive best in sandy loam, mixed with a third or fourth of leaf-mould and good drainage; if the loam is at all heavy or rough add a little peat and plenty of sand. Plants of the smaller growing kinds mentioned should be shaded from very hot sun in summer, and with free ventilation and careful watering they will grow and flower freely and well. They will be all right for the winter in the frame, if matted up well and kept dry in cold weather—that is, unless the frost is very severe, when they would be safer in the sunny window of a warm room.—E. C. R.

4056.—Spring bulbs.—Plunging the pots containing the bulbs in a bed of ashes means covering them with the fine sifted material, but ashes is not the best material for the purpose; Cocoa-nut-fibre answers best, or leaf-mould. They should be plunged out-of-doors, and the reason for this treatment is, that the bulbs should form roots before growth is made, and this treatment is best for the emission of roots. Ashes sometimes injure the growths. A cupboard heated by hot-water pipes is about the worst place that could be imagined to place newly potted bulbs; they would be forced into growth before roots could be formed, and would be drawn up apindly and wask in the extreme.—J. D. E.

4095.—Making leaf-manure.—The leaf of the Beech and Oak make much the best leaf-soil, and the present is an excellent time to commence operations. Collect leaves from the road-side, or get permission to do so in some plantation of these trees. Put the whole together and turn it a few times until they are thoroughly decayed. That from the road-side is best, because it secures a good bit of grit and horse droppings.—P. U.

TREES & SHRUBS.

SHRUBBY SPIRÆAS.

THE SPIRÆAS are beautiful flowering shrubs, all more or less of value in the garden. They are generally of graceful growth, moderately tall, though some are quite dwarf and bushy, and they flower profusely over a long season, often keeping up a scattered succession from summer until the end of autumn. Few shrubs are easier to grow, but in many gardens they are choked up with other things. Almost any soil will suffice, and it is easy to increase the stock by layers or suckers.

S. BUMALDA, a variety of *S. callosa*, represents well the dwarf and bushy section, and it has come more into note of late through the appearance of a very distinct and acceptable variety, in which the flowers are of a much richer colour than in the type. The typical *S. Bumalda* grows about 2 feet in height and is hardy, creating a pretty picture when planted in front of other shrubs to form a base, or in the shrubbery; not the choke-muddle arrangement usually seen, but where the several things are boldly grouped together. A mass of this form by itself makes also a happy feature, the flowers being of a rose colour, preceded in bold flat clusters, and when



A Shrubby Spiræa.

in full perfection very effective. The variety named Knapp Hill Crimson has flowers of an intense crimson colour, but in other respects resembles the parent, blooming over a long season. It is a sport. A shrub with flowers of such rich and decided colour is adapted for planting in distinct beds on the turf or against dark-leaved things to bring out the full depth of the clusters of crimson bloom. *S. Bumalda* is not one of the hardiest of the Spiræas, and it is important not to plant it in a very cold spot, or where the soil is poor.

S. CALLOSA or *S. japonica*, its synonym, is a lovely dwarf shrub, an indispensable Spiræa, and a native of Nepal and Japan. Fortunately it is not rare, and may be seen in all good gardens, where its graceful stems rising between 3 feet and 4 feet in height have a fine effect when enriched with the deep rose-coloured flowers. *S. callosa*, however, varies much, and amongst the several varieties occur some that thoroughly deserve attention. The white form—*alba*—is dwarf and makes a neat, shapely, and bushy shrub, the flowers white, and as in the type and all its forms, continue to appear for months until cut off by frosts. *Splendens* has flowers of richer colour, *semperflorens* (red), *atrosanguinea* (crimson), and *superba* (greenish-white), but this scarcely justifies mention. While writing of *S. callosa* we may refer to another dwarf species, *S. bella*, which bears some resemblance to *S.*

salicifolia, the Willow-leaved Spiræa; the stems are erect, the flowers rose-coloured, and produced in lax panicles during the months of May and June. It was introduced in 1820 from Nepal, and is quite hardy. The yellow colour of the decaying leafage makes it attractive in the autumn.

THE WHITE BEAM-TREE-LEAVED SPIRÆA (*S. arifolia*) is one of the finest of its race, and grows taller than any hitherto mentioned, rising to nearly 10 feet high in a good soil and position. It is now classed as a variety of *S. discolor*, and was introduced by Douglas in 1827 from North-West America. When once established the growth is free, dense, and graceful, heightened in beauty by a profusion of greenish-white flowers in July. Individually they are of little importance, but raised in the large clusters, which bend the shoots down with their weight, are showy and effective. Plants may be very readily propagated by layers. The English name was suggested by the leafage, which is not unlike that of the European Beam-tree (*Pyrus aria*). A shrub of this noble character, especially when in full bloom, is utterly spoiled if choked up in a common shrubbery. It should be certainly set off with a background of dark-leaved shrubs, but stand quite isolated, when it will grow to large and imposing dimensions. Then

it is one gains a correct idea of its beauty, the heavy clusters of flowers extending out in bold relief from the leafage. I like to see such shrubs as these isolated on the Grass, such as a bank near the waterside, where it has a fine appearance, and fortunately any free soil will suffice. The more vigorous Spiræas require a little attention in pruning from time to time to keep the shrubs within bounds, and prevent degeneration through an overcrowded mass of growth.

S. THUNBERGI is now fairly common, and its merits as a shrub for early forcing are recognised, the slender shoots covered with small white flowers being of great use for cutting. The shrub assumes a graceful form, and is the first of the Spiræas to bloom; but, apart from its flowers or value for forcing, *S. Thunbergi* is worth planting for its foliage alone, which in autumn assumes a splendid crimson colour, intensely rich, and remarkably uniform, every leaf being of this fine colour. Last autumn was, owing to the wet, comparatively unless weather, very poor for foliage effects, but the leaves of this Spiræa were as bright as in dry sunny seasons, and stood out conspicuously from the green foliage associated with it. Large clumps in the garden are worth looking at in the autumn, and have a delightful effect. It was introduced from Japan, and is perfectly hardy. Producing one of the best things we have received from that land of flowers.

S. HYPERICIFOLIA, or Italian May, as it is sometimes called, by reason of the white Hawthorn-like flowers, makes an attractive bushy plant, the growth pleasing and graceful. The stems are elegant and arch gracefully, and crowded with flowers in the summer season, when they have a charming effect in the garden. The type has been long in English gardens, as it was cultivated by Parkinson in 1640, whilst it may be used to form a hedge as well as a distinct specimen. It is easily raised by layers or suckers, and when allowed to grow in its own pleasing way is one of the most attractive of the Spiræas; but there are many varieties, some finer than the parent one, known in nurseries under various names.

S. REEVESIANA, or *S. ceutiensis*, under which name it is also known, is sometimes classed as *S. lanceolata*, but the two are distinct; and both form attractive garden shrubs, the first named the finer of the two. *S. Reevesiana* grows about 3 feet in height, the flowers white, produced in fairly large clusters, and in such profusion as to make the shrub in the month of June a mass of white. It is also used for forcing in spring. There is a pretty double variety with white flowers. The true *lanceolata* of gardens is quite dwarf, and an attractive bush when smothered with the white bloom.

S. LINDEYANA is a noble species, remarkably distinct in appearance, and a fine garden shrub, producing a wealth of long pinnate foliage, delicate green in colour, and of charming grace, especially when set off by the bold plummy clusters of white flowers. It also blooms very late in the season—the month of August—when comparatively few trees and shrubs are in flower. Unfortunately, this beautiful Spiræa, being from the Himalayas, is not so hardy as many others, but in the suburbs of London I have seen it need well in a distinct bed on the surrounding edge of the lawn, where the soil is light and warm, and the position not exposed. A happy picture is thus produced, as its leafage is very elegant; and in more southern counties where well placed the shoots will rise to nearly 10 feet in height. It is also a good shrub to mix with other things for contrast if allowed to develop its own characteristic graceful habit.

THE PLUM-LEAVED SPIRÆA (*S. prunifolia*) is best represented by its double variety (*double-plee*), which is a lovely shrub when well grown; but, unfortunately, it is too often deprived of true beauty through neglect, by planting it anyhow amongst other things, and not permitting the growth to develop in its own characteristic way. It will thrive in ordinary soil, and although a native of sunny Japan, is very hardy, producing in the month of May a profusion of double white flowers, each like a charming little rosette. Like many of the other Spiræas, it remains in bloom over a long season, and may be made far better use of than crowded up in a common shrubbery, very often a mass of good things stifled to death through ignorant planting. V. C.

4700.—*Araucaria* (Monkey Puzzle).—A large quantity of fresh loam will certainly help your tree; but when this Piec commences to fall in its lower branches very little in the way of renovation can be done. I once had a large avenue of these under my care, and two of them having grown too close together to allow of a roadway between, the gate was placed on one side. Before deciding to do this several cart-loads of soil were removed from around one of the specimens and replaced with loam. The plant so treated grew away considerably beyond its fellow; but had it lost any of the lower branches they could not have been replaced. This noble, and yet formal plant, is not suited for many soils. It will grow in almost any for many years, but just as it is attaining noble dimensions the roots reach uncongential soils, and the lower branches go off rapidly. The first signs of this are evidenced by the needles turning rusty, and after that the plant is soon spoilt. A gravelly, and yet cool bottom, with a moist surface-soil, is what they luxuriate in. My plants ranged from 30 feet to 60 feet high.—P. U.

I have repeatedly pointed out that the Monkey Puzzle is one of the most unsatisfactory trees you can have in a small garden. It is entirely unsuitable for such a purpose, and invariably goes off in the way described. Even in such places as the Royal Gardens, Kew, where

the greatest care is taken of the specimens there, they are an utter failure, the lower branches dying off. I do not know whether they are there new, but formerly several Monkey Puzzles disfigured the beautiful park at Greenwich, and why they were planted in such a place, near to lovely groups of Thorns, is a mystery. The fact is, those responsible for the smaller gardens know nothing about trees, shrubs, and plants as a rule, and I should advise you to get rid of the Araucarias and put in some really beautiful things, as the Weigelas, and many other shrubs that have been recommended from time to time for small gardens. You cannot save your trees. Top-dressing of the best loam mixed with manure might give temporary benefit, but

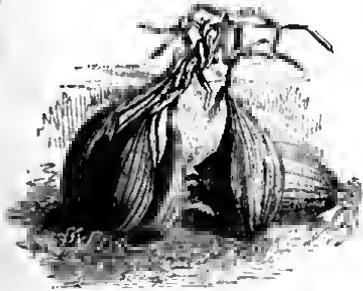


Fig. 1. Common Shallot.

only temporary; the dead branches will not grow again, and half a Monkey Puzzle is not pretty. It is very well to point to such specimens as at Powderham Castle, in Kew, or Dropmore, the branches sweeping the turf, but the climate and position for them here are peculiarly suitable.—C. T.

— This is a most disappointing tree generally. In a few places it does well, mostly in the maritime districts. The tree requires plenty of moisture. This has been the likely cause of the bottom branches dying. If I had a tree that condition I should grub it up and plant something else more reliable.—E. H.

4657.—**Mistletoe**—There is no way to propagate the common Mistletoe other than by inserting the seed in a notch out in the bark. It is parasitical on the Apple-tree, and is also found on the common Poplar, also on the Hawthorn, the Mountain Ash, the Maple, and other trees; rarely upon the Oak. Some persons say that it is better to sow the seed on a natural crack or depression in the bark of the tree. The ripe fruit may be pressed into the parts most suitable with the fingers gently, so as to break up the viscid substance, but not to injure the seed. The white substance will be sufficient to keep the seed in its place, but birds may peck it off unless it is protected with wire netting or some similar material.—J. D. E.

4701.—**Hardy Azaleas**.—Hardy Azaleas, both the Gheet and Japanese varieties, will do very well where the soil is suitable. Very little, if any, pruning will be required. If much pruning is done there will be no blossoms for some time after. If the plants get lanky or straggling in habit, shorten back to put into shape, but otherwise the less pruning they have the better. Azaleas will not grow in a limestone soil. They succeed best in peaty land, but I have seen them do well without peat where there is plenty of vegetable matter and not much lime in the soil. The old Yellow Azalea pentica is one of the sweetest shrubs in the garden. I used to grow it largely for forcing, but of late years, since Azalea mollis has come so much into favour for forcing, pentica has fallen into the background.—E. H.

— Hardy Azaleas are perfectly hardy, as the name suggests, but you will spoil them if you prune. The charm of these shrubs is that they grow widespreading heads, the branches, so to speak, rising in tiers and loaded in the early days of June with their richly fragrant, varied-coloured flowers. As you do not appear, from your note, to know much of this class, I may say that the hardy Azalea needs a good loamy or peaty soil. If the ground is heavy clay, for instance, you must have a peat bed, about 12 inches or 18 inches in depth, and give an occasional top-dressing in after years. They require some amount of shelter, especially from cold easterly winds, which injure greatly the

flowers, and spoiling the beauty of the shrub. Much advance has taken place with this group in recent years. The flowers individually are much larger, broader, and splendidly coloured, the shades of crimson and scarlet in particular, fiery masses, which light up the scenery with brilliant beauty. If you have a piece of woodland, sheltered from the east wind, and the soil is of proper description, there you may grow to perfection these shrubs, and no place is better for them than a clearing in woodland. The growth itself is very characteristic, the branches very leafy, and the foliage in autumn takes on splendid colours—crimson, bronzy-green, and chocolate. The season of flowering has been greatly prolonged by getting new late-blooming types, which carry on the period of flower-beauty until the end of July. The semi-double race is very charming, the trusses of bloom compact, and the individual flowers very pretty when out, whilst they have a delightful fragrance.—C. T.

THE KITCHEN GARDEN.

SHALLOTS AND GARLIC.

IN reply to queries, these plants are in every way so nearly related that cultural notes given in reference to the one may safely be taken as suitable for the other. Except in rare instances, however, their cultivation is somewhat neglected, a circumstance owing no doubt to the fact that there is not much demand for them. That, however, ought not to be accepted as a reason for neglecting their culture, for though we may be required to grow but few, it is surely worth while to grow those few well. The most suitable soil for them is a strong loam that has been manured the previous autumn and left to mellow under the winter's frost. This should be broken down smoothly with a rake early in February, and the bulbs should be planted in rows 15 inches from each other, and 9 inches apart in the row. No dibber should be used; the bulbs should be pressed into the ground with the fingers only. As soon as they begin to make roots it is necessary to give them another press down, or the roots will upheave the bulbs out of the ground. Beyond hoeing to keep the surface of the soil open, little else is the way of culture is needed to insure success. In order to obtain handsome produce, select the finest and best shaped bulbs for planting. As regards varieties, they are not numerous, and what there are vary but little in any respect except in colour and size, the quality of all being about alike, and all are no doubt more improved by constant selection of the finest for reproduction than by seed. The ordinary pale red-skinned (Fig. 1) is perhaps the most profitable kind to grow; it is certainly far more productive and hardier than the larger deep red-skinned Jersey variety (Fig. 2). There is also a good silver



Fig. 2.—Jersey Shallot.

skinned kind in cultivation, which from the appearance of the bulbs might easily be mistaken for Garlic, though it is somewhat longer than the bulb shown in Fig. 3, which is the common English variety of Garlic, and the only kind that need be grown. W.

Gathering Mushrooms.—Mushrooms should be pulled, not cut, giving a slight twist at the same time, so as to bring the stalk clear away. Pull all that can be found, and give the ground a light sprinkling of salt or the approach of rain after a good spell of dry weather.—B. C. R.

WINTER CUCUMBERS.

WHERE a supply of Cucumbers has to be maintained throughout the winter months, a certain amount of forethought is necessary. It must be remembered that Cucumbers are lovers of sunlight and long days, and under these conditions the plants grow and fruit freely enough, but not so at midwinter. At this time, unless the treatment is judiciously carried out, the plants will hardly grow, let alone bear fruit. Fitful supplies are often secured, but where Cucumbers are looked for, a regular supply is what should be aimed at. As is generally the case, the plants are spoiled at the first. They may have been planted all right and also grown in a suitable structure, but are ruined in the earlier stages and quite unable to bear the

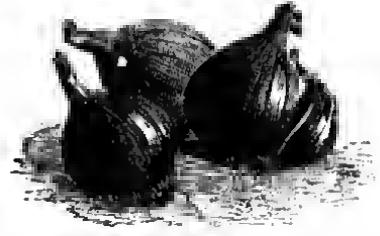


Fig. 3.—Garlic.

strain which the dark days put upon them. That the plants may be in condition to fruit freely through the autumn and early winter months is no reason that they should be allowed to do so. At that time Cucumbers are not looked for in quantity, and this being so, it is of no use to let the plants bear the strain which these early crops undoubtedly put upon them. With the plants worn out, as it were, it matters little what after-treatment is bestowed upon them, as rarely are they able to recruit their strength to prove satisfactory. The want of Cucumbers is generally felt throughout the months of January and February, and particularly so during the latter month. I do not advise the same set of plants for the production of Cucumbers throughout the winter, as I like a set for producing fruits for the early part of the winter and another for the latter end. By having two sets, the first batch may be relied upon until the end of January, and then at this time the second batch will commence to bear and will continue through what is generally the worst season, as far as the production of winter Cucumbers is concerned. By relying upon two sets of plants, it must not be imagined that extra space is needed, as if room is scarce the same number of plants as is generally grown in one batch may be divided, and by arranging them in this manner a far greater number of fruits may be secured than relying exclusively upon one set and those planted early. For the successful production of winter Cucumbers

A SUITABLE STRUCTURE is of the utmost importance, as unless this is light, efficiently heated, and so forth, their culture would be attended with difficulty. A good heating surface is most desirable, so that a comparatively high and equable temperature can be easily kept up. To the want of this the failure of many winter Cucumbers may be traced. Before commencing operations it will be as well to consider the system under which they will be grown, whether in large pots or in prepared beds. Pot culture has its advantages and disadvantages, but personally I favour the planting out for the first or earliest batch and pot culture for the later—that is, where there is the convenience for carrying out the work in this way. When grown exclusively in pots it is most desirable that a comparatively high temperature be maintained, for unless the pots can be plunged so as to derive benefit from bottom-heat, the plants cannot make much headway. The pots being surrounded with warm fermenting material, so as to generate a bottom-heat of 80 degs., the roots are kept actively at work, and when this is so the plants remain healthy and do not wither. This certainly is the point where many fail with winter Cucumbers when grown in pots. As I have previously mentioned, the plants must be built up sturdily from the

first, and fruit should not be allowed to form until actually required, and then only sufficient should be reserved to keep a steady supply. Plants which may be raised now and duly planted out have not only time to form vigorous plants before the dull days arrive, but also to fruit heavily as well by the same time. Allowing the plants to produce these surplus fruits is only wasting their energies and weakening out before their time. It may appear waste to cut off the small fruits as they form, but this show is only fleeting, for sooner or later a collapse will come and the plants will refuse to grow, let alone produce fruit. The

RAISING OF THE PLANTS for what should constitute the first or main batch should take place so that they can be planted out some time during the month of September. By allowing them to become starved in small pots for the want of planting out, and perhaps also smothered up with other subjects, is only to court failure. It is best to raise the plants singly in 3-inch pots. Particular care should be taken that the small plants are kept to themselves, so that a class start may be made. The seeds after being sown should be plunged in a gentle bottom-heat, and directly the seedlings appear through the soil elevate them to the light. Nor must the little plants be allowed to waste water, which should be tepid. The soil for these winter fruiters must also be lighter than is generally used for the summer crop; but this, of course, will be gauged by the kind of loam at disposal. The soil I have to deal with being heavy, the roots work the more freely when it is used in the proportion of one half loam and one part each of pulverised horse-manure and leaf-soil, with pounded charcoal and old lime rubbish as correctives. With lighter soil to work with, use a third of loam. The formation of the beds, or rather mounds of soil the plants are to root in, will of course depend upon the formation of the structure and also the arrangement of the bottom-heat pipes. What is wanted is a genial root-run, with not to great a bulk of soil. The practice of using some fermenting material, either of well-worked stable litter, or, what is better, litter and leaves in equal proportions, for placing under the mounds over the bottom-heat pipes, is not favoured by some people. I do not think so, as I am certain that a layer to the depth of a foot, and this trodden firmly, forms an effective barrier to the dry heat which ascends from the bottom-heat pipes. Do not lay it direct on to the pipes, but over the usual layer of broken bricks which surrounds the pipes. The roots thereby work the more freely and are not subject to fluctuations of temperature. Over this litter the mounds should be placed, arranging them at least 3 feet apart. Whether turves will be needed to be placed underneath will, of course, depend upon circumstances. Certain it is that turves are of benefit where they can be used. A high and close temperature must be avoided, this forcing on the growth too much without that solidity so essential for successful after returns. What is wanted is a circulation of air, tempered more or less by artificial heat according to the weather. To attempt to gain this thus early in the season without a judicious application of artificial heat will only result in attacks of mildew.

The growing must be trained thinly, the main laterals being thinly disposed. The secondary shoots should be stopped at the second joint, or what is known as one joint beyond the fruit, whether fruit is expected to form or not, as this of course may be removed if not wanted. The shoots must be kept judiciously thinned out, and the larger leaves should also be removed to let in the requisite amount of light. Nor must the roots have less attention, as the soil must be kept at an even degree of moisture, taking the precaution, however, that the soil is moistened through. The roots must be kept actively at work also by judicious top-dressing and feeding up with clarified liquid-manure. The application of liquid-manure may be easily overdone, however, during midwinter. The growth at this time is at its lowest ebb, and applying liquid-manure too freely is apt to sour the soil, with the result that the plants quickly take on a sickly appearance. With a good heating surface command the temperature may be easily kept up during the night to 65 degs. with an extra 5 degs. on mild nights, allowing, of course, the

natural rise by day. For the secondary batch the early part of November is quite time enough for planting. As I have previously remarked, this batch is best grown in large pots, and by being plunged in warm leaves, or fermenting litter and leaves mixed, satisfactory crops will be secured. Plants such as these may often be produced when grown in a stove, always taking the precaution to keep them away from insect-infected plants, especially those subject to mealy bug. A.

ORCHIDS.

ODONTOGLOSSUMS.

In answer to "Msc.," I should advise him to get all those of *O. crispum* section, *O. Intepurpureum*, and *O. Pescatorei* with other similar kinds at once, if they require it, but if not I would take away any decayed or old soil from them and renew with fresh. I have noticed that in some places this summer these plants have been somewhat punished by the very hot season, and that they have hardly been able to maintain themselves. To all those people I have recommended this use of raised beds, which have the effect of maintaining a very much cooler atmosphere. With those persons not provided with a north house it has been difficult to keep them, but in such circumstances I have advised these raised beds to be permanently fixed, and to have another one to roll up and down to cover it; besides this, the house to be kept in a nice moist condition. The *Odontoglossum* will now begin to grow and move along comfortably in congenial weather, but I do not refer to *O. citreum* or any of this section, which should now be resting and be kept quite dry. For this plant coming from a somewhat lower elevation, requires this to cause it to flower, and it should be potted or re-surfaced in the spring when the spikes begin to show, using good peat-fibre and chopped Sphagnum Moss in about equal parts. MATT BRAMBLE.

THE SIAMESE SACCALAHUM (S. CELESTIS).

THIS beautiful plant, when I first saw it blooming with Mr. Cobb, of Sydenham, a few years ago, completely took me aback, it looked so exceedingly elegant, and its light-blue colour, which is so rare amongst Orchids, was so charming. Now the forms sent by "J. Mendoc" are just the two extremes which I have seen the species before break into. This is an Orchid of which we know but very little, and I think the only plants that have reached this country have come home through M. Roebelin, and in his letter to Mr. Shuttleworth he said: "The plants grew upon the bare trees in the Rice-fields of Siam, which had been left in the clearing of the ground for the planting of Rice." Now, this at once gives an idea of the requirements of the species in question—great heat and abundance of moisture in the atmosphere. I do not think it is a species that has been imported during the past year or two, and I should advise Mr. Sandor or someone else to send us some more plants home, in order to keep such a fine Orchid before the eyes of the amateur Orchid-lovers. In doing so there can be little doubt but some other fine things are also to be found, and so we should obtain a fresh stimulant to cultivate warm-house Orchids, for this one is so beautiful that it is beyond all praise. It belongs to the section having erect spikes of bloom, which are produced freely, two of them upon a single stem, bearing from thirty to fifty blossoms, which are white at the base, tipped with a bright, pure blue, the lip also being tipped with the same shade of blue, this in some varieties being a light blue, but in others darker, but beautiful in any shade. The plant is an erect grower, producing its leaves in a two-ranked manner; these being about 6 inches long, which are keeled, thick, and fleshy in texture, with præmose ends, and deep-green in colour. The flower-spikes arise from the base of the leaves, erect, and about 9 inches in height. The spike from which the flowers now before me were gathered is not much more than 6 inches high, but it does sometimes attain to a greater length; and I have measured the old plants of some of the imported plants 10 inches in length, so that my friend may look forward to a

crease of pleasure from this Orchid. It should be grown in a basket and hung up near the roof-glass, so as to have the sun and light, but not exposed to the hottest sun, but slightly shaded during the fiercest of its rays, in order to keep the plants of a good colour, and to prevent its being burned. The basket should be well drained, for as the plant requires a great quantity of water during the season it is quite necessary that this should run away freely. The plant must not even be allowed to become very dry, or the chances are the leaves would shrivel, turn yellow, and fall away; and they cannot well be spared. MATT BRAMBLE.

4662.—**Sawdust as a manure.**—That sawdust does not very readily decompose is not (except where the soil is already surcharged with organic matter) a material objection to its use as a manure. It should be remembered that in the most fertile soils the proportion of matter directly available to the roots of plants is but a small fraction of the whole. The beneficial action of by far the greater part of the organic matter contained in the soil is purely mechanical. In stiff lands sawdust, even in its undecomposed state, acts beneficially by dividing and lightening the soil, and in both stiff and light lands, when it is decomposed, it increases the power of the soil for absorbing and retaining heat and moisture. In sandy soils the power of decomposed organic matter to hold back soluble fertilizing material applied to the soil is a peculiarly valuable property. I am fully aware that many cultivators have a strong objection to the using of sawdust as a manure; but the fact should not be lost sight of that almost all vegetable matter contains woody fibre, the essential constituent of sawdust. It is found in the leaf-stem, the midrib and the veins of leaves, and even in flowers and fruit. The peculiar mechanical action of leaf-mould as a potting material is due in great part to its partially decomposed woody fibre.—L. C. K.

4616.—**Packing Lilliums.**—You might take the bulbs up and dry them off. Thousands of Lily bulbs are annually treated in this way in this country, and by the Dutch and Japao trade growers. The bulbs are not found to suffer any serious loss of vitality when dried off, but I should never treat them in this way unless circumstances compelled me to do so. It is not natural for Lillies to lose all their roots when at rest, and they certainly stand more vigorously when the roots are preserved. I should lift them carefully, and pack in boxes in damp Cocoa-nut-fibre or Moss, in which they may remain through the winter. The common white Lily must not be dried off, being now in growth.—J. C. Hyatt.

4692.—**Mealy bug.**—The mealy bug is a very difficult insect to get rid of when once it gets into a vineery. As soon as the crop of Grapes and the leaves are off, the stems of the Vines and the roots should be scraped with a blunt knife to get off any loose bark. They should then be thoroughly cleaned with a stiff brush, and painted over with the following mixture: 2 lb. of flowers of sulphur, 2 lb. of soft-soap, and a wineglassful of turpentine. Should be made into a paste with a little water. Boil 1 lb. of Tobacco and 6 quarts of water in a clean vessel for an hour, strain it, and mix it with the paste with enough water to make 5 gals. The woodwork of the house should be washed with the same mixture, or dress the stems and rods with three parts of clay, one part of tar, mixed with enough water to make a paint.—G. S. S.

4676.—**Carnations in a smoky district.**—The Carnation is a plant that will do better than most in smoky districts. No better arrangement for the culture of the plants could be made than that suggested. The plants will do very well in the frames all through the winter, and should be planted in flower-pots in March, placing them out-of-doors until the pots are ready to burst open, when they may be placed in the house with ample ventilation. Roses would do well treated in the same way, but they are not so well adapted for a smoky district as the Carnations; in fact, the Rose likes a pure air, and generally pins away in the neighbourhood of large smoky towns.—A. D. CAMPAIGN

BEYTON GRANGE.

FROM Bury St. Edmunds to Beyten le about six miles, and all who pass that way will see Beyten Grange, for the charming house and pretty garden, so faithfully shown in the engraving, stand by the roadside. It is the residence of Mr. Le Henp Cockeage, and though it is little more than a roadside villa, yet it possesses a beautiful garden, which far exceeds what is generally seen in such places. The house nestles down in front of some tall silvery Willows. Its walls are entirely hidden with Ivy, whilst Roses and Clematises scramble over the porch, and our native large White Convolvulus becomes a beautiful thing as it climbs up the face of the Ivy and its flowers peer out from the dark green leaves. When I saw it last summer (1892) window-boxes filled with flowers varied the Ivy mantle upon the wall. A border round the house was filled chiefly with Margurites, and well they looked in broad masses, with a foreground of Ivy-leaved Pelargoniums and the grey-leaved Cineraria maritima, whilst a few little masses of deep blue Lobelia gave variety of colour. The arches, which look so beautiful in the picture, lose none of their charm by an inspection. Gloire de Dijon Roses and Clematises are intermingled in wild, free masses, forming huge wreaths of foliage and flower. The flower-beds are all well filled with bedding plants of the usual type, but well grown and abundantly flowered. These beds, however, were not a repetition of the usual scarlet, yellow, and blue. They exhibited as much variety as is obtainable from this system. The old Gazania splendens creeping about the ground and blended with Blue Lobelia, the Purple Verbena venosa associated with Flower of Spring Pelargonium, the curious Salvia Horminum with coloured bracts extending out from and above dense tufts of the dwarf Tagetes, scented-leaved Pelargoniums, and the cool grey-leaved Cineraria toned down the bright masses of other Pelargoniums; these were some of the better and less common charms of this bedding system. They were simple harmonious combinations

whose beauty was not lost in the complexity of pattern arrangement. But with all this array of flowers, gorgeous in their summer dress, I missed the fine hardy plants which would look well in some of these beds, plants which by scent and fine form appeal to other senses besides that of sight alone, plants which when brought to our gardens and planted remain there and increase in interest, size, and beauty as each season rolls round. There may be visionary delights in gazing upon these masses of colour on a warm summer's day, but in the midst of the feast there will crop up memories of the past. How often does an early frost come and make the garden here! One frost, perhaps, will be succeeded by a month or six weeks of fine weather, in which such a garden has no enjoyment to offer. This should not be so, because selected hardy plants, cultivated as are the bedders, will flower as freely and continuously. It is only when the severer frosts come that they cease to bloom. There is abundant evidence at Beyten Grange of the owner's desire, but it is to be hoped that present realisations, though good, will not content, but lead to the creation of something better and of a more permanent character. —R.

HOUSE & WINDOW GARDENING.

POTTING UP PLANTS FOR A WINDOW.

JUST before the first frosts arrive our gardens often contain many handsome plants well set with buds, which will certainly never open in the cold blasts of autumn. Amongst these there may be Margerites, both white and yellow, which have grown into neat little bushes in the borders and are now in full bloom. Carnations, too, which have been late in forming buds from the drought or being put out late in the season are now throwing up tall spikes of bloom, destined to destruction unless taken into shelter in time. Abutilons, Brugmansias, and other semi-tropical specimen plants will have grown too large for a window; but yet there are plenty of smaller plants in most gardens which might be potted up with advantage and used for winter decoration during the dull days. Chrysanthemums, for instance, where their growth is not too straggling, will flower much better indoors than out in most seasons, and these can be raised without difficulty if the following plan can be adopted about ten days

at hand to destroy the first comers of these insect pests, and an occasional syringing out-of-doors or watering overhead with a rosed pot will be found useful to preserve the foliage of Chrysanthemums in full beauty. Carnations, and some varieties of Margurites, are not so troublesome with regard to blights, while others are especially subject to thrip and green-fly. Prevention is better than cure in this matter as well as in everything else, and the constant use of a little clean soap and water, with sharp inspection of the tender shoots and the backs of the leaves, will save a vast amount of trouble, and preserve the plants in full vigour. L. R.

4671. — Window plants. — The plants named would keep better in a spare room than in a frame, unless the frame could be covered during frosty weather with an old carpet or plenty of straw, which would have to be removed in mild weather, as plenty of air is necessary. But they are apt to damp off in a frame if too much rain reaches them; also there is a danger from mildew settling on dead leaves or other matter, which must be guarded against by picking off all decaying parts and keeping

all sweet. The plants if put in the frame should stand on a layer of fine, dry ashes, and the pots should be completely covered with the same material. They will then need but little water, only putting them out to a good mild rain occasionally; the lights being raised, however, daily from ten to three o'clock by means of bricks in wet weather (so as to keep the rain off the plants), and thrown right back in fine, mild weather; closed completely only during frost, when the glass must be covered as mentioned above. If the plants are taken into the house, a sunny spare room, without a fire (except in frost) will suit them well, and they should have all the air and light possible, except during a sharp frost. When this occurs, the plants may be lifted from the window and placed in the warmest corner of the room, covered with newspapers, two or three layers thick, which will keep out all but the severe frost, when they could be put into



OUR READERS' ILLUSTRATIONS: Beyton Grange, Bury St. Edmunds. Engraved for GARDENING ILLUSTRATED from a photograph sent by Mr. Edward Le Henp Cockeage.

before taking the plants up, their roots should be cut round at a sufficient distance from the stem to make the balls fit the pots into which they are to go; a small sharp spade being used for this purpose perpendicularly into the soil without disturbing it further. Directly this is done, the plants to be raised should have a good soaking, either with water, or, still better, liquid-manure or soot-water; this will stimulate the cut roots, and induce them to throw out a mass of small rootlets at once. When the plant is raised, a week or two later on, the ball of earth with these rootlets should be kept intact and merely placed in a drained pot, with a little rich soil to fill the interstices. If the plants are allowed to stand on a bed of ashes, sheltered from the sunshine by a north wall, for a few days after they are potted up, and well supplied with water, they will not feel the check, and will continue to produce their blossoms as though still in the border, when they can be placed in a sunny window, giving them all the air and light which they can have. Chrysanthemums do best in a room without a fire, as they object to dry heat, and are apt to be attacked by black and green-fly if exposed to it. A piece of sponge with a basin of warm soap and water should be always

the kitchen window or into the sitting-room for a few days. All dead and dying leaves and stems should be removed at once from them, and they will be the better for a little good top-dressing (of leaf-mould, sand, and loam), digging out the surface-soil to the depth of an inch or so, and replacing it with sweet, fresh compost. Watering must be done thoroughly, when at all, enough lukewarm water being given to run through the pot, and the saucers being emptied an hour afterwards; but no water should be given again until the upper soil is dry enough to leave no stain on the finger placed on it. Each individual plant differs in its needs, according as it has strong roots, or is making growth; all hard-and-fast rules, such as water once a week or twice a week, are therefore dangerous; and the owner should look through the plants daily to supply that which is really needed, and that only. —L. R.

4666. — Wooden labels. — Wipe them over with a rag just moistened with thick white paint, rubbing it in well, and leaving very little on. Write on them with ball pen, and the letters will last as long as the wood. —B. C. R. Quicklime dissolved in water, and whilst hot stirred up with a little oil, makes a good mixture for painting wooden labels. When dry you can write upon them with

CABANA CHAMPAGNE

INDOOR PLANTS.

4607.—**Plants for a cold greenhouse.**—*Chrysanthemums* which have been grown without high feeding will do fairly well in the unheated greenhouse if the hoime can be kept from damp, which is mainly a question of careful watering and ventilation. When cold weather sets in it should be possible to improvise a cover for the cold greenhouse, which could be rolled up on fine days. If this were done, many plants might be grown without artificial heat, including *Fuchsias*, *Myrtles*, *Camellias*, *Tuberous Begonias*, *Genistas*, and *Coronilla glauca*. There are many beautiful things among choice hardy plants, such as *Tree-Peonies*, *Indian Rhododendrons* and their hybrids, *Dentzia gracilis*, *Ghent* and *Japanese Azaleas*, *Carnations*, *Laurustines*, *Jasminum nudiflorum*, *Fatmagium grande*, *New Zealand Flax*, one or two of the hardy *Fan Palms* (*Chamereps*), *Dracena indivisa*. There are plenty of early-flowering hardy plants that will be as beautiful and interesting under glass as the common greenhouse plants, with which such houses are usually filled.—E. H.

—Some capital plants for an unheated structure are *Spirea japonica* and *S. palmata*, *Dentzia gracilis*, *Dielytra spectabilis*, *Hydrangea paniculata grandiflora*, as well as the common kinds, *Myrtles*, *Azalea mollis* var., *Primula Sieboldi*, *P. obconica*, *P. japonica*, and others, *Campanulas*, such as *C. pyramidalis* (hine and white), *P. fragilis*, &c., choice *Auriculas* and *Carnations*, *Roses* in *Laurustinus*, and for winter flowering *Christmas Roses*, *Laurustinus*, *Violets*, the hardy *Cyclamens* (*C. com.*, *C. europaeum*, *C. Atkinii*, &c.), and others. Even the ordinary Chinese *Primroses*, single and double, are very nearly hardy when sown in a greenhouse or frame in May, and grown without any fire-heat whatever, though they will not bloom much until the days begin to lengthen. The Persian *Cyclamens* also are not injured by a few degrees of frost, if hardily reared throughout. Even *Camellias* may be managed well in an unheated house, especially if by means of thick coverings over the roof in severe frost only a few degrees gain entrance. Another most useful class of plants for such a purpose are the shrubby *Calceolarias*, of which there are several very pretty varieties, all very nearly hardy. *Tuberous Begonias* may be wintered in a kitchen cupboard, and bloomed here during the summer; and, in fact, there is no end to the possibilities of a sunny and well-managed cold glass structure.—B. C. R.

4631.—**Lemon-scented Verbena**—It is rather too late in the year to strike cuttings of the *Lemon-scented Verbena*. It is deciduous and should rest in winter. The plants ought to be cut back a little in the spring, and when the young shoots have grown 2 inches or 3 inches, some of them may be taken off with heels attached, and they will strike very freely in a hot bed, or in a little bottom-heat in a forcing-house.—J. D. E.

—This plant cannot be propagated by cuttings without the aid of surrounding glass to keep the atmosphere quite moist for the leaves, while the roots are in progress. But it is easy to strike a cutting of the young shoots (in a window, even) if covered by a tumbler or bell-glass, which should be taken off, and wiped dry every morning, replacing it, and keeping the soil quite moist. The compost used should be nearly half sand, with ordinary loam for the other half, and good drainage; when the little plant begins to grow, the sheltering glass may be gradually removed, until the *Verbena* has become independent of it, after which it can be repotted (giving a rather richer soil), or put into a warm corner out-of-doors, where it will grow luxuriantly during the summer. In Devonshire these plants usually survive the winter in the open air, doing especially well, if the collar (i.e., the part of the plant which enters the ground) be well covered with dry ashes in autumn. In colder districts the *Aloysia* should be potted up and taken indoors in September. It is now very late for striking cuttings; the summer is the proper time, but it may still be tried.—I. L. R.

4635.—**Gloriosa superba**—The essential conditions of temperature can be obtained, the *Gloriosa* is an easily-grown plant. The bulbs are now in their resting period, and remain

quite dormant during the winter. They are also rather slow to start into growth in the spring; it is generally March or April before any growth is made. They might start more readily in a bottom-heat, but this is not really necessary. The bulbs should be repotted early in the year before any roots are formed; the soil should be just moist enough to start them in a Greenhouse or plant-stove. It is a hot-house plant, and good specimens will grow to a height of 6 feet or more, producing abundantly its rich orange and red blossoms. It is liable to the attacks of insect pests, particularly thrips; but it can be kept clean by daily syringing when in growth. In autumn, when the plant is at rest, no water is needed until the spring, when growth begins again. The flowers are striking and handsome, being also freely produced.—J. D. E.

4644.—**Freesias**.—The leaves of *Freesias* should not be long and drooping at this time of the year. They have been grown in the vinery at too great a distance from the glass roof. When the bulbs were potted in August, the flower-pots containing them should be plunged over the rims out-of-doors, and as soon as the plants have pushed out of the ground an inch or so, they ought to be removed to a cold frame, and the lights must be removed altogether when the weather is fine. All such plants as these require much light and air to keep them in good condition.—J. D. E.

4652.—**Nerine Fothergillii**.—This species requires much the same treatment as the *Guernsey Lily* (*N. sarniensis*). Repot the plants just before the season of growth in loam, leaf-mould, and sand. They may be repotted once in two years. During the growing period they do well in a brick-pit with a little bottom-heat; the season of growth is after blooming. They must be freely watered at that time, and be gradually dried off as the resting period draws near. When at rest give no water.—J. D. E.

4655.—**Treatment of a Bermuda Lily**.—It is not easy to give the exact reason why the flower-stalks of this Lily went blind the second year. It is not difficult to manage, and the bulbs will flower very well a second year or more after being imported. If the plants made good growth and the heil is sound it might do very well another year. They will flower twice in one season, and do well the next year. The bulb has been potted at the right time, and it should be plunged over the rim of the pot in Cocoa-nut-fibre-refuse, or some such material, out-of-doors, until the plants have made some growth.—J. D. E.

4617.—**Treatment of Camellias**.—You do not mention to what colour your small leaves of these plants change; if yellow, while the remainder keep green and healthy, probably it is only that those changing are becoming ripo previous to falling off. All foliage dies more or less at some period of the year. Should they be a healthy pink, it is because they are too young to put on the deep and glossy green that old foliage possesses when in full health. Your plants are doubtless removed under cover now; if not, lose no time in doing so. Look to the drainage, remedying this if defective. A few waterings with soft water will help them very much, or you may place a layer of coal-seeb on the surface, at the rate of half an inch to an 8-inch pot; but great care will be needed in watering afterwards, because the surface will present much the same appearance, wet or dry.—P. U.

4642.—**Flowers for Christmas church decoration**.—*Roman Hyacinths* potted at once, three bulbs in a 4-inch pot, or six in one 3½-inch diameter, plunged in ashes or Cocoa-nut-fibre-refuse in a cold frame, or out-of-doors where they will not get too much rain, should flower at Christmas, if a gentle heat can be given them afterwards. The bulbs should remain in the plunging material for six weeks, sufficient time to admit of the bulbs filling the pots with roots. *Arum Lilies* are much appreciated for Christmas decoration. To have them in flower a little warmth is necessary, and the plants must be strong, supplying the roots freely with tepid liquid manure. *Dentzia gracilis* prepared for forcing is a useful Christmas flowering plant, and so are white-flowered *Azaleas*; but these are rather expensive, and must have been prepared for the purpose of being encouraged to make early growth in the spring, so that their buds are

plump by this time. Double White *Primulas* give a quantity of flower. A light airy position in the greenhouse, where a temperature not less than 45 degs. by night and a rise of 10 degs. by day can be maintained. *Christmas Roses* are easily forced into flower, they require so little heat. Pot up strong clumps at once in moderately rich soil, giving them the protection of a greenhouse for the present. If there are any doubts of their being expended a little heat will hasten them on quickly. *Helleborus niger* is the best variety. *Bouvardia* Alfred Neuner, double white, *Vreelandia*, and *Jasminoides* are all free-flowering subjects if given a temperature similar to that for the Double *Primulas*.—S. P.

4602.—**Treatment of Aspidistras**.—The *Aspidistra* or "Milk Palm" is one of the easiest plants to grow, ordinary greenhouse treatment suiting it admirably, the chief fault with amateurs being that they do not sponge or syringe the foliage often enough. Leaf-soil and peat in equal proportions, with a dash of sharp sand and a little broken charcoal, make a good compost. Efficient drainage is of great importance, as the plants enjoy plenty of water without fear of stagnation.—P. U.

—Too rich a soil, too much root room, and not enough sun are the chief causes why the leaves come green instead of variegated. Good peat and sand are quite rich enough for a potting compost for these plants, and when large specimens are wanted, pans about 7 inches deep should be used in preference to pots, or else the pots should be half filled with rocks. In the winter the plants will stand full exposure to the light if they are placed on a greenhouse stage, but in the summer they require the glass to be shaded.—J. O. C.

4837.—**Heating a small greenhouse**.—This perplexed correspondent may very easily overcome his many difficulties with the Loughborough boiler by obtaining an automatic damper. Prior to adopting this ingenious arrangement I also experienced difficulties with my boiler. After several months' use I am most heartily recommend the automatic damper to your correspondent, and can assure him that in the end he will find it reduce the outlay for fuel, maintain an even temperature in his greenhouse, and will keep the fire in for at least twelve hours.—D. B. CRANE.

4706.—**"Geranium" in winter**.—Very strong plants will generally survive if tied in bundles and hung up in a cellar or similar place, but not too dry, to which little or no frost can penetrate. A much safer and better plan, however, is to take the plants up, before they are injured by frost, cutting back all the strong shoots to about 3 inches of stem, and clipping the ends in time to prevent decay. Then either place them singly in small (3½-inch or 4-inch) pots, shortening the long, coarse roots moderately, and using some fresh sandy soil, made fairly firm, and with good drainage; or else pack them closely in deepish boxes, each with some rough ashes or broken bricks in the bottom for drainage, working some of the same soil as before in among the roots, and making all firm. In either case give them a good watering in (with tepid water), let them dry moderately (if possible out-of-doors in the sun), and remove to a sunny window in a warm room for the winter. Give water only so as to keep the soil from becoming very dry and the plants from shrivelling, then only or chiefly in the forenoon of fine mild days, and most of them will survive and begin to grow again in the spring. If kept fairly dry and cool they will do nearly as well away from the light as in the window, and a few degrees of frost will do no great harm, though this is better avoided. In the spring, when they begin to grow again, give a little more water, pot singly, harden off in May, and plant them out again early in June. Such old stumps usually bloom splendidly.—B. C. R.

4840.—**Keeping Fuchsias through the winter**.—*Fuchsias* may be kept in the cellar if the growth is well ripened without cutting down. They should be well hardened by exposure before storing them away.—E. H.

—Certainly; but do not cut down the plants as you suggest. If pruned at all, remove the tops and small spray only. See that they do not become very dry at the roots, or the plants will shrivel and die.—B. C. R.

—It is not necessary or wise to cut the plants down to the roots to keep them through winter. Prune off a few of the outside straggling shoots so that they take up less room. These should be laid on their sides, either in a cool place or in a little iron frost will preserve them well enough.—S. F.

OUTDOOR PLANTS.

EVENING PRIMROSES.

The *Oenotheras* or Evening Primroses form a large and very important section of our summer and autumn-blooming plants. They are mostly confined to North America, the chief exception being *O. taraxacifolia*, which is Chilean. All are perfectly hardy and as a rule easily grown. From early April until the autumn frosts set in some few of the species will be found in flower, almost dazzling the eye with their masses of rich golden-yellow, white, or rose-tinted blossoms. Their fault, if fault it be, is, as their name implies, that of opening their beautiful flowers chiefly in the evening. This, however, is by no means general, and some of them will be found that open their dazzling flowers during the day. The annual species, with the exception of *O. odorata* and its varieties, may well be dispensed with from the flower garden. They are often troublesome from self-sown seeds, and none of them can be compared with the perennials and biennials for beauty of form or colour. The place for the robust grower will be the wild garden and the shrubbery border. *O. Lamarckiana* is perhaps the most useful for this purpose. The only thing to guard against is the numerous seedlings, which should be thinned out regularly during late autumn or spring to 2 feet or 3 feet apart. Those like *speciosa*, *linearis*, and *fruticosa* will be found admirably adapted for the mixed border, and those of the *marginata* section make an interesting and charming display on the rockery, for which, indeed, they are peculiarly adapted. Amongst the species not detailed below, and which will be found valuable either for the rock garden or mixed border, the following may be noted: *O. ohrysantha* (yellow); *O. rosea* (rose); *O. punilla* (yellow); *O. riparia* (yellow); *O. sinuata* (pale yellow, turning to rose); *O. Drummondii* (white and yellow); *O. tenella* (an annual, purple); *O. densiflora* (annual, purple); *bistorta*, &c.

O. albicaulis.—This is little more than a biennial—at any rate, it has proved with us a very short-lived plant, though well worth the trouble of propagating annually by seeds. Dr. Gray says it is perennial, which we much doubt. The stems are erect, about 1 foot or 1½ feet high, branched on the upper portion of the stem, smooth, shining, and usually of a greyish-white. The leaves are narrow, entire or irregularly toothed. The flowers are produced in the axils of the upper leaves, white, becoming pink with age. It is a native of the barrens along the Platte, Saskatchewan, &c., and is a useful species for the rockery, where it flowers in early summer.

O. biennis is not much grown as a garden plant, although few biennials are better suited for naturalising in woods and shrubberies. Its variety *grandiflora*, better known perhaps as *Lamarckiana*, is the one usually seen in flower in our borders. The whole plant is more robust, and the flowers are larger and much finer than those of the type. It is an excellent border plant, singularly beautiful in large masses, and well adapted for the wild garden or shrubbery, as it seeds itself in the greatest abundance. It is easily increased by seed, which should be sown annually to keep up the stock. Throughout North America, flowering June to August or September.

O. caespitosa, an illustration of which accompanies these notes, belongs to the acaulescent group. It is perfectly hardy, very easily managed, and a remarkably beautiful free-flowering species. The flowers are large, white, turning to a delicate rose colour with age. It is found on the clayey calcareous slopes of the slate hills of Upper Platte, but rare. It is most abundant on the Missouri along with *Astragalus galeoides*, flowering in July. It is a very distinct and beautiful species nearly allied to *O. acaulis*, and about which there seems to be some confusion. It is well figured in the *Botanical Magazine*, tab. 1593, under this name. It is the *O. scapigera* of Pursh, Fl. and Pachylophus Nuttelli of Spach. In the "Botany of

California" it is described as above, but *O. marginata* (*Botanical Magazine*, tab. 5828) is given as a synonym, to us a totally distinct plant in every way, as may readily be seen by a comparison of living plants or plates.

O. fruticosa.—This species and its two or three varieties are among the very finest of our hardy herbaceous perennials. They rarely exceed 2½ feet or 3 feet in height, and all through the summer and autumn bear a profusion of the most delightful golden-yellow blossoms. *O. glauca*, often given as occurring in gardens, is said to be nearly allied to the above. It is so near that I have never been able to make it out. Taking the character laid down by Dr. Asa Gray, *O. fruticosa* is hairy, white, and *O. glauca* is glabrous. The variety *Fraseri* which belongs to *glauca* is represented in gardens by a taller form of *O. fruticosa*. So hardy is *O. fruticosa* and its varieties, that they go on flowering after the first frosts in autumn, and even our hardest winter leaves them untouched. It well repays cultivation, and the clumps should be divided every second year and planted into good rich soil. It may also be raised from seeds, which ripen freely. It is a native of dry barren soil throughout North America, and flowers with us from June until the frosts appear in autumn.

O. linearis.—A slender growing perennial, found abundantly in dry, sandy places from



Evening Primrose (*Oenothera caespitosa*).

Virginia to Florida, North Carolina, &c., flowering in our borders from April until July. It rarely exceeds a foot or so in height. The flowers, which are comparatively large, are of a soft pale yellow and fragrant, more so than in any of the other species we have grown. This will be found a useful plant for the rock garden, where in rich free soil it forms fine tufts.

O. marginata, known also in gardens as *O. eximia*, belongs to the acaulescent section, and is admirably suited for the rockery or the front row of the mixed border. Even when luxuriant it rarely exceeds 6 inches to 10 inches in height, and when in free, rich soil it will in one season cover a large extent of ground. It is an extremely free bloomer, the individual flowers measuring 4 inches to 5 inches in diameter, white, changing to rose or pink as they become older, and in the evening emitting a most delicious Magnolia-like scent. It increases rapidly by suckers or underground stems; these often travel a long distance and form tufts of large, toothed or jagged leaves. All through June, July, and August this plant is charming in the evening. Cuttings root readily if taken with a piece of the root. Native of the Rocky Mountains of Upper California, Mexico, &c.

O. missouriensis.—A trailing or decumbent low-growing perennial from the dry hills

throughout Missouri and on the Canadian River. It is quite different from the above, though resembling it in its acaulescent habit; the flowers are large and of a soft sulphur-yellow; the leaves thick and leathery, narrow, and of a light shining green. It is readily increased by division or cuttings, and rarely ripens seed in this country—at any rate, it never has done so with us. It thrives best in a rich sandy soil, and if growing on the border will be all the better of a few stones buried round the neck of the plant. Its flowers, produced from June to August, although best in the evening, are often open in the daytime. *O. macrocarpa* is a synonym. There is also a broad-leaved form known as *O. m. var. latifolia*.

O. ovata, a charming species, is new to cultivation, the seeds having been introduced last year by Mr. Thompson of Ipswich. *O. ovata* is found in moist plains in the immediate vicinity of Monterey, California, and is said to flower in March. The flowers are described as each over an inch in diameter, of a rich bright-yellow. The leaves are ovate or oblong, and exactly resemble those of *Viola primulaefolia*. It is an acaulescent species, and will doubtless be a very useful plant.

O. sphegiosa.—A charming species, producing an abundance of large white blossoms from April until September. It is an excellent rock garden plant, where on dry sunny places it makes quite a feature. The flowers, at first white, change with age to a delicate rose. The stems are erect, growing from 1 foot to 2 feet in height. It is a native of Red River, Arkansas, Texas, &c.

O. taraxacifolia.—A comparatively rare Californian species, belonging to the acaulescent section and perhaps most nearly allied to the Chilean *O. taraxacifolia*, which it resembles very much in habit and leafage, with the exception of the toothing being carried out to the point instead of only two-thirds, as in *O. taraxacifolia*. It rarely exceeds 4 inches in height and does not like *O. marginata*. The flowers are golden yellow and borne profusely throughout early summer on short stems from the rosette of leaves. It is a neat species, well adapted for the rock garden.

O. taraxacifolia is well named, as it is readily recognised by its Dandelion-like leaves. Like the last, it belongs to the acaulescent section and makes a very effective rock plant when given a rich, free soil and where its trailing stems can overhang a ledge. The flowers are large, varying from 2 inches to 4 inches in diameter, white when first open, but becoming pink with age. It is a native of Chili, and may be readily increased by division or by cuttings. *O. acaulis* is only a variety of the above with smaller flowers.

O. triloba is usually said to be an annual, but with us under cultivation for many years it has not only proved perennial, but perfectly hardy and one of the most free flowering of the genus. It has a dense, caespitose habit of growth, the stems short, the rosette of leaves lying on the soil in most cases. The flowers are larger than in *O. fruticosa*, yellow, very fragrant and produced from early April until the frosts come. The flowers expand mostly in the evening, but they are often open and the plant quite attractive at midday. It is a native of Arkansas, and is readily increased by seed, which it ripens freely.

D.

4579.—**Daffodils for a small border.**—I gave some little time back a list of the twelve best Daffodils for borders, as I anticipated many enquiries upon this point. I write, however, briefly to name a few good kinds that should be in every border. One is *Horsfieldi*, and another *Empress*. You can select either, but not both, unless you so desire. They are very much like each other, but do not bloom quite at the same time, so you may get a succession. They are "Trumpet" Daffodils and self-yellow in colour. *Princeps* is a good kind, self yellow, as also is *Sir Watkin*, whilst other fine kinds are *Emperor*, a splendid Trumpet Daffodil, the double-flowered *Butter and Eggs*, the late-blooming *Poot's Narcissus*, and many of the less striking, but very beautiful kinds, as *Stella*, *Barr*, conspicuous, *Leedsii*, and the Hoop-tipped *Narcissus* (*N. bulbodidum*), which will succeed out-of-door, although usually grown in pots. Put the Daffodil bulbs in the ground at

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once, and ordinary garden-soil will suffice, and the quicker they are planted the better. If you do not mind the expense, plant good clumps, as they are more effective in the spring, a fine mass of colour being obtained. The Trumpet varieties in particular are exceedingly rich thus grown. The list is small, but I have recently given ample information upon the best Daffodils and their culture.—C. T.

4674.—Restoring a lawn.—I should say the brown spots will recover, as seldom indeed are the roots killed from the effects of dry weather alone. However, if they do not become green as readily as might, and the other parts of the lawn look patchy and the Grass weak, it would be a good plan to well scratch the surface over with a sharp-toothed iron rake. This will free the Grass from Moss should there be any in it. The lawn then should be covered with finely sifted decayed vegetable refuse, road-grit, and wood-ashes, adding a handful of soot to every peck of the compost. If the covering is a quarter of an inch thick when first put on no harm will be done, as by raking over the lawn after the soil has been on it a fortnight, much of it will work down amongst the roots of the Grass, and by repeating the raking several times during the autumn, choosing a dry day for the work, the whole of the dressing will disappear. Early in April the lawn should be well swept to remove any small stones that were amongst the soil, afterwards rake it over, leaving a rough surface. Sow law Grass seeds at the rate of 25 lb. to the acre, again rake the surface to cover the seed, afterwards roll the lawn well, repeating this several times after the seed has germinated to make the ground firm. As the new Grass grows freely it should be mown frequently to incite the Grass to spread thickly at the base.—S. P.

— You might prepare the soil in the bare places again and sow seed; but the quickest way to get a good sward is to lay down turves, which in some neighbourhoods may be got very cheaply. I should do this work at once, so as to get the lawn in thoroughly good condition for next season.—C. T.

New Single Dahlias.—The Single Dahlias are less popular than a few years ago, and this is the result of the increasing favour shown to the Cactus class. But still one wants the singles, and a few novelties of great beauty have been shown this year, particularly by Mr. T. W. Girdlestone, who raised the dwarf Tom Thumb kinds, which are useful for edging beds. One of the best new Single Dahlias is Demon, which is a splendid colour, deep-meroon, almost black, and the petals are quite velvety. Phyllis is very showy, lilac, striped with crimson, but the striped kinds are not great favourites. M. G. C. is another striped flower, bold, and very distinct, yellow, striped with orange-red. We hope that the single flowers will not be pushed into the background, as they are showy in the garden, and very charming to cut for the house.—V. C.

4707.—Plants for a rockery.—Notbing but strong-rooting plants can bear the drip of trees. Periwinkles and St. John's Wort is perhaps the best. I find strong clumps of Aubrietias do fairly well, but you must not expect small plants to establish themselves. The American Blue Grass also bears both drought and drip; probably *Thalictrum minus* would thrive. As a rule, low growing plants of a woody character are the most likely to succeed with you, such as *Antennaria microphylla* and *Erigeron radiatus variegatus*, and the green form of this.—J. C. CLARKE.

— We fear little will grow in such a position. You might try some of the Saxifrages, but these cannot stand drip, neither can such easily-grown things as the Creeping Jenny. My advice is to clear away the rockery, which is a nuisance in your case. It should be the home of many pretty alpines, which cannot grow under trees. After Ferns of the hardier kind, nothing will thrive properly. Ferns, moreover, do not like drip.—C. T.

— The different varieties of Periwinkles, of which there are five or six, are perhaps the most useful of all plants for such positions, growing freely anywhere, and soon covering a large space with a perfect carpet of foliage and flowers. Hardy Ferns also will thrive in the crevices of the stones, and Snowdrops, the commoner kinds of Daffodils and Narcissi, Primroses, Lilies of the Valley, Spleenwort, *Adiantum*, *Aspidistra*, *Campanula* will also all do more or less well.—B. C. P.

ROSES.

SEASONABLE NOTES.

SOME few weeks back I promised to give a few notes upon pot-Roses. The present is one of the most seasonable times, as not only does the routine of work commence now, but it is also the most favourable time to start their cultivation, whether it be with plants lifted from the open ground, or those obtained from the nursery and already in seal pots. A large number of Roses are grown annually by the trade in what are styled 6-inch pots. These do not come much more expensive than those from the open ground, and a great advantage is found in the fact that the whole of their wood is sound and useable to a much greater extent than in the case of larger plants lifted from the open border. Another great point in their favour is their being well adapted for immediate forcing, whereas those from the open need a season's growth in pots, if the best results are to be obtained. Roses may also be purchased in smaller pots, and these are remarkably cheap, considering how soon they return a fairly good crop of bloom. Grafted plants in 48's are the same age as those in 24's, the only difference being that the latter are the best of the best potted on once more. When purchasing these smaller plants, it is necessary to avoid including any of the climbing varieties. These would not flower during the coming season, as they need to make rods of greater strength than could be the case in such small pots. Varieties like the following twelve are excellent for pot work: *Aca Ollivier*, *Niphotos*, *Augustine Gironoise*, *The Bride*, *Seppo*, *Rubees*, *Perle des Jardins*, *Madame Haste*, *Madame Faloot*, *Lucinde*, *Gustave Regis*, *Edith Gifford*, *Gombault*, and *Dr. Grill*.

COMPOST AND POTTING.—Let this be a mixture of good loam, leaf soil, and decayed vegetable refuse in about equal proportions. This is a good compost, but the following is also useful, and where difficult to procure one the other may be obtainable: Good garden soil two-thirds, and the remaining third made up of thoroughly decayed stable-manure, with a dash of sharp sand. To either of the above composts there is no harm in adding a little bone-meal. Pay considerable attention to drainage, as much depends upon this, and put firmly, more especially when shifting a plant into a larger sized pot. Far too often this is done without due thought. The soil of the old pot is firm, and unless you make the new soil equally so, water percolates through it too freely, and the result is a sudden outside in comparison with the older ball of soil. Do not prune and introduce to heat sooner than a month after potting. The strong growers will need so pruning, as the nurseryman will have done all of this that is necessary in his endeavour to get a healthy and long rod of growth. One of the greatest mistakes with amateurs when growing Roses under glass is the hastiness with which they excite the plants into growth. This means puey shoots, and often is the chief cause of blind growth.

INSECTS, &c.—Immediately the Rose commences to grow, one's plants are almost certain to be attacked by some insect. If neglected for a short time this becomes serious, and the results are fatal to a satisfactory crop. But if attended to at once, Roses have as few pests as the majority of greenhouse plants. Mild measures taken early are effectual, and do no harm; but if the insects are allowed to thoroughly establish themselves, they do a permanent injury to the plants. Not only this, but the measures necessary to exterminate them are also injurious, and more than the plant can stand. Let syringing and fumigation be done mildly, even if it is necessary to do it more than once. This is far preferable to injuring the young growth, and so taking the gilt of the first and most profitable crop of bloom.

P. U.

4710.—Climbing Roses.—Seeing that the plants make good growth you cannot do anything to increase the size of the flowers. The aspect being north, there is no doubt these hardy Roses were selected on account of the coldness of the situation. If you are dissatisfied with them, you may remove them and put *Gloire de Dijon* and *Madame Plantier* in their place. No doubt you know the old *Glory*; the other is a fragrant white Rose that flowers in clusters. With regard

to enclosure B, not having seen the latter, I can only suggest that you secure the long shoots to the wall and allow them to remain until the end of the summer to see if they will flower, as I am afraid you are a was bit impatient. If I was sure they are snob rubbish as you seem to suppose, I should say root them out and plant snob Roses as *La Marque* (white), *L'Idéal* (yellow), *W. A. Richardson* (orange), *Reine Marie Henriette* (red), *Rève d'Or* (coppery yellow), and *Cheehuet Hybrid* (red). You must syringe the plants with soapy water to wash off the green-fly. *Ecolouis C* may be a shoot of *John Hopper* but it is very usefull for this Rose not to flower. You had better throw the pruning-knife or nipper—whichever you use—over the garden fence for a year, and give less stimulants, and wait for the effect. If this does not help you I shall be pleased to advise you again.—J. C. C.

— You cannot improve your Roses much in size, &c., as from your description I have little doubt they are *Noisettes* of the *Aimée Vibert* and *Miss Glegg* class. These are naturally very small, growing and blooming exactly as you describe. Your plants in enclosures B and C are probably some stock, from the fact of their growing so strongly and not producing a flower under the three distinct treatments you have accorded them. If you will send me a piece or two of growth, of fair size, I will reply direct whether it is so or not.—P. U.

4711.—Various Roses.—You are evidently in much the same difficulty here as in the previous query. It seems to me you have allowed suckers to grow apace, and must either have purchased badly-worked plants, or else the first killed the Rose, and so allowed suckers to prevail. By all means make up a small parcel of wood and send me no direct, when I will settle the matter as far as stock and suckers are concerned. I shall have much pleasure in replying, as I take a great interest in amateurs' difficulties with the queen of flowers.—P. U.

— I had not read this enquiry when I replied to the one above. Now I have done so I am more convinced than I was before that you either prune your Roses too much by cutting away the flowering wood or you use too much stimulants. The latter is most likely the case, as the information you send leaves no doubt on my mind but what yours is a strong soil, and do not require so much manure as a poor one. I do not think your plants are placed too deep in the ground, nor is it desirable to cut up the plants in the way you suggest. With regard to Roses from which you can cut and come again, you had better grow dwarf plants, and prepare a good-sized bed or border for them. Plant them at once and let them grow their own way for two years. I should prefer, however, to have separate beds for the strong growers, including such sorts as *Gloire de Dijon*, *Souvenir de la Reine Victoria*, *Homère*, *William A. Richardson*, *Rève d'Or*, and *Mme. Plantier*, and another bed or one end of a border for such hardy Tea Roses as *The Bride*, *Countess of Folkestone*, *Marie Van Houtte*, *Mme. Eugène Verdier*, *Mme. Lombard*, *Safran*, and *Mme. Berrard*. If you do not want Roses of high quality, the old-fashioned *Pink Moss* is very hardy, and so is the sweet-smelling *Cabbage Rose*. Then there are the Chinese Roses, such as *Cramoieille-Supérieure*. This variety is just now making a long, dry bank on a gentleman's place near where I write quite brilliant in colour by its innumerable clusters of light crimson flowers. The common white and pink varieties are invariably in flower from early summer until late in autumn. Little's Pet has small, double white flowers, and is a continuous bloomer.—J. C. C.

4699.—Rose culture.—I suppose that if twelve correspondents were to reply to your query, there would not be two of them give the same twelve varieties of Hybrid Perpetuals and Tea Roses as being the best in their opinion for culture as dwarfs. However, I will name those I should choose. H. P.'s: *Alfred Colomb*, *A. K. Williams*, *Baroness Rothschild*, *Comtesse d'Oxford*, *Duke of Edinburgh*, *Duquy Jamin*, *Eclair*, *Jeannie Dickson*, *Mrs. John Laing*, *Merveille de Lyon*, *Suzanne Marie Kodocauschi*, and *Gabrielle Luizet*. Twelve Teas: *Anna Ollivier*, *Amazone*, *Catharine Mormet*, *The Belle Souvenir d'un Ami*, *Souvenir de S. A. Prince Saneet*, *Perle des Jardins*, *Madame Hoste*, *Madame Faloot*, *Ernest Metz*, and *Dr.*

UNION PACIFIC CAMPAIGN

4600.—**Scale on Rose.**—Cut the Rose back as close as you can without injuring the plant in any way and rub off the scales; then dress the shoots with the following mixture: 1 lb. of soft-soap, the extract from $\frac{1}{2}$ lb. of Quassa-chips, dissolved in 10 gallons of water; or $\frac{1}{2}$ pint of paraffin-oil, $\frac{1}{2}$ lb. of soft-soap, thoroughly mixed in a little very warm water, and mixed with 6 gallons of water. Keep well stirred and do not allow the oil to float on the top of the mixture.—G. S. S.

4704.—**Roses for show.**—If you had stated the number of blooms you wished to show at one time I could have given you more definite advice. Supposing you wish to show twelve blooms of distinct varieties you ought to grow at least twenty-four, so as to have a choice, and of these you should have two or three plants of each, or you will not be sure of getting the desired number of flowers on a given date. The following will do you good service as exhibition varieties: A. K. Williams, Marguerite de St. Amand, Marie Beaumann, Mrs. J. Laing, Earl Dofferin, Duke of Edinburgh, Françoise Michélon, Dupuy Jamin, Gustave Pignone, Hypolyte Jamin, Madame Sophie Fropot, Mme. Marie Rady, Miss Jeanne Dickson, Mr. James Brownlow, Prince Camille de Rohan, Ulrich Brunner, Victor Hugo, Merveille de Lyons, Capitain Christy, Mme. Nachury, Senateur Vaiese, Madame Prosper Saugier, Jean Soupart, Jules Finger, and Duchesse of Edinburgh. Grow them as bushes.—J. C. C.

—“Hybrid” will find the bush plants far preferable to standards. They will produce double the number of blooms, be cheaper, take up rather less ground, and be considerably longer lived, so that he will easily see there is a great advantage in them over standard forms. Here are a dozen good exhibition varieties, and I would advise three or six of each being grown in preference to increasing the number of kinds. Alfred Colomb, Camille Bernardin, Charles Lefehvre, Comtesse d'Oxford, Dupuy Jamin, Mrs. John Laing, Gustave Pignone, Louis Van Houtte, Marie Beaumann, Suzanne M. Radocanashi, Victor Hugo, and Prince Arthur.—P. U.

FRUIT.

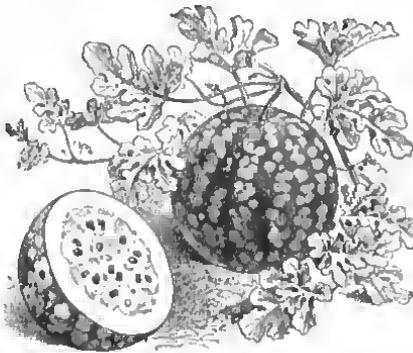
WATER MELONS.

IN reply to “R. B.,” “D. S.,” and others, we may say that were our climate sufficiently genial to admit of the culture of Melons in the open air, we should probably place a higher value on the Water Melon than we now do. In countries where the summer heat is intense this fruit is much esteemed, being considered wholesome as well as refreshing. In common with the Cantaloupe, it is a favourite summer fruit with the working classes in large towns in France, and at the large fairs annually held there during the late summer months the immense quantities of them are sold at very cheap rates. Being strong in growth, the Water Melon requires much space for development, a single plant covering, where conditions are favourable, many square feet of soil. One often sees it in gardens in South Germany rambling freely, just as Pumpkins and Vegetable Marrows do with us. In five years in the warmest parts of this country the Water Melon might succeed fairly well, and, considering its hardiness and vigour compared with our most esteemed kinds, we should perhaps do well to give it a place under glass, as it does not need much care, bears heavily, and, so far as I am aware, is not liable to canker. In any case, early planting in rich, free soil and copious waterings are indispensable. The German gardeners plant it out on a gentle bottom-heat about the beginning of May, sheltering the plants under cloches, and gradually inuring them to full exposure, so that by the time frosts are no more to be feared the plants have good hold of the soil, and are ready to respond to the influence of the season. B.

4702.—**Insects on Vines.**—The white woolly spots on the Vines are doubtless mealy-bug, and their presence means a good deal of trouble for the next six months or longer. There is no insect more difficult than this to stamp out, and there must be no half-way business about it, as one pair of insects will be enough to infest a long range of glass-houses if

the temperature be right. The first thing to do is as soon as the leaves are down prune the Vines, and gather up every leaf and cutting and burn them. Then wash the Vines twice over with a strong solution of Gishurst Compound, 6 oz. to the gallon, used warm, the mixture to be brushed in with a spoke-brush or one of those long, narrow affairs which can be deftly handled, so as to find out every crevice. When the Vines are thoroughly clean, wash all the paint inside the house. If possible a coat of paint should be given, and all wall surfaces washed over with strong lime-wash. When this has been done in a thorough manner, remove 3 inches of the top soil from the borders inside the house, replacing with fresh turfy loam, in which a little bone-meal or Petent Silicate Manure has been mixed. Even this will not clear out every insect. A close watch should be kept on the Vines every bright sunny morning through the early spring, and all insects seen moving about killed. The daily look round on fine days to spring is most important.—E. ff.

4651.—**Fruit in a cellar.**—A really dry cellar, from which light is excluded, is the best possible place for keeping fruit. Probably the fruit decays because it was not picked with sufficient care; a padded flat basket should be used, and one layer only allowed to be placed in it. The slightest bruise will cause the fruit to rot before ripening. Another common cause of Pears shrivelling is that they were not picked at the right time. It is not always understood that there are only two or three days for each fruit during which they should be gathered, to keep well for the winter. This time may be found out by going round the trees daily, and



Water Melon.

raising a Pear here and there in the hall of the hand, with a quick movement into the horizontal position. This must be done without the slightest pull on the fruit. And if this trial does not detach it, the fruit is not ready to leave the tree. If left long enough to fall on the ground, it is useless, except for stewing. Constant supervision by the owner is therefore necessary during the autumn months to secure good dessert fruit in winter.—I. L. R.

4698.—**Cherry-trees dropping their flowers.**—Cherry-trees drop blossoms or young fruit sometimes through a deficiency of lime in the soil; sometimes drought may cause them to drop, and if the trees have been growing strongly, unripe wood may have had something to do with it. In the latter case lime rubble worked into the soil would have an influence for good. I think it is unwise to manure the ground overmuch for Cherries, but a mulch when the trees are heavily laden will be beneficial, and I have seen much good follow watering in dry weather, both in spring and summer.—E. H.

4705.—**Fear-tree with cracked fruit.**—Any Pear-tree which has cracked fruit in a season like the past has been in hardly worth growing in that particular position. The principal cause of Pears cracking is deep rooting in a cold, damp soil; but I have known Pears—Glou. Moreau, for instance—where the fruits cracked badly on the espalier and on pyramids, yet did well on east and west walls. It was the warmth of the tree wanted. Lifting the roots out of the soil would be the best remedy.—E. H. Pears often crack in a wet season, but that has not been the case this year. Again, some sorts of Pears crack in some soils more

than others. It is to the latter I think you must look for the cause in your case. The best thing you can do is to regraft it in the spring with another sort. Louise Bonne of Jersey is not subject to cracking, and the sort makes a good pyramid or standard. If you make up your mind to regraft the tree, head down the branches early in February, and put on the colons in April.—J. C. C.

“AMERICAN BLIGHT” ON APPLE-TREES.

If timely precautions are taken to arrest the progress of this troublesome pest when it first appears, time will be saved in the end and the trees greatly benefited. I have no new practice to bring forward as to its destruction, but would draw attention to early removal of the pest. This is of great importance, as many young trees are ruined if left too long. “American blight” is certainly one of the worst enemies of the Apple-tree, and when once introduced into a garden it is only by persistent and repeated efforts that it is kept in check. This pest does not keep on the upper surface of the bark, but gets into the cracks and crevices of the tree, and though the injury caused is not seen at the moment, in time it produces canker, and the trees are ruined. The danger lies in young trees being attacked, as they are so soon injured and disfigured. When very old trees are attacked it is almost useless to try and save them, as the old wounds harbour the blight and prevent remedies being applied. If possible, old trees so affected should receive a winter dressing of clay and soluble petroleum, well mixed together to the thickness of paint. This will do much good, care being taken to thoroughly paint over two or three times the old wounds or cankered parts of the tree, removing all decayed portions before applying the paint. I do not think there is any better remedy for young trees than paraffin or petroleum, using a brush and touching all affected parts. I have also used soluble paraffin and clay at this season with equal success. When young trees are badly infested with the aphid the use of a quantity of paraffin in a raw etete is not a safe remedy. I would prefer using Gishurst Compound in a strong etete, mixing sufficient Gishurst with a little water and well rubbing all over the bark. Soluble paraffin is also a safer remedy than the raw material if a great quantity is used, and is very effective. The use of the raw material must not be condemned, as on older trees it is very efficacious when carefully used. Soft-soap and Tobacco-water applied in a liquid etete is a good remedy. Whatever insecticide is used it is necessary to thoroughly wet or paint the infested places, well rubbing the mixture in with the brush, and to do the work as early as possible. The aphid having a woolly covering, merely syringing or wetting the bark will not reach it; indeed, without hard rubbing it cannot be dislodged. All trees that are near the insect should be removed and burnt, old nails removed and reburnt or heated, and wire dressed with the raw petroleum. If such precautions are taken when first observed, much time and labour will be saved. B.

4669.—**American Blackberry.**—The plant purchased for Wilson Junior is not true to name; it ought not to produce double flowers; these when very double would not be likely to produce fruit. I bought half-a-dozen plants of this variety when it was sent out, and it has produced single flowers which give fruits, but I have been much disappointed with it, and with others of the American Blackberries. They may be very good and very useful in America, but they do not succeed in England. Our own Bramble is better than any of them.—J. D. E.

4695.—**Grafting.**—The best time to graft Apple and Pear-trees is in spring, just as the sap is rising, about the end of March, and the best method for young stocks is what is termed whip graft, cleft grafting being as good as any for regrafting old trees.—E. H.

Late Strawberries, etc.—It may interest some of your readers to know that a dish of Strawberries, Vicomtesse Hericart de Thury, was gathered here on Thursday, Oct. 6, and also on Sunday, 8th, and the White Field No. 1 is in bloom in the hedge.—EDITH CURRIE, Stocken Hall, Shropshire, Glastonbury.

Planting in the open ground.—The best time to plant Potatoes is in early to April. If planted now, and there is a late winter, the plants might die.—E. H.

RULES FOR CORRESPONDENTS.

Questions, queries and answers are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of GARDENING, 37 Southampton Street, Covent-garden, London. Letters on business should be sent to the Publisher. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always give the number and title placed against the query replied to, and our readers will greatly oblige us by adopting, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appear.

4723.—Romneya Coulteri.—When is the best time to plant Romneya Coulteri?—V. M.

4724.—Best Fuchsias.—Will someone give me the names of the two best Fuchsias for show, one light and one dark?—L.

4725.—Bracken on pasture-land.—Will anybody kindly tell me how to get rid of Bracken from pasture-land?—FRANKLIN.

4726.—Ornamental-leaved plants.—Will someone give me the names of the three best ornamental-leaved plants for exhibition?—L. L.

4727.—Gazania.—Can Gazania be left outside in the late of Wight where they would do well to winter, or must they be lifted?—H. M.

4728.—Compost for Vines.—Will someone kindly tell me what is the best compost to plant Vines in? Also how many parts of each?—ANKWARD.

4729.—"The Bride" Gladioli.—Will someone kindly tell me the time to put these, and what soil to use, and how to treat them?—BALDOCK.

4730.—Greenhouse plants.—Will someone kindly give me the names of the two best greenhouse plants in bloom for exhibition during August?—H.

4731.—Light-coloured Roses, &c.—The names of the 12 most fragrant light-coloured H. P. Roses and 12 most fragrant Teas would oblige?—MISNER.

4732.—Ornamental Grasses.—Would someone give me the names of several good ornamental Grasses, and say when they should be sown?—G. I. H. D.

4733.—Tree Carnations.—Intend growing some Tree Carnations, and should be glad if anyone would tell me the names of a few of the best sort?—A. R. S.

4734.—Messembryanthemum and Double Petunia cuttings.—Will these, struck in boxes, kept in a cold frame, or must they be kept in greenhouse?—H. H.

4735.—Cornflowers.—Should Blue Cornflowers be sown now in the late of Wight out-of-doors or in early spring for flowering in a bed with Roses at the same time?—H. M.

4736.—Striking evergreens.—If I put slips of evergreen bushes in the open ground, will they strike root and grow, and the proper time for doing so?—M. ANGELO.

4737.—Scale on Peach trees.—I have some Peach-trees badly infested with scale. How can I best get rid of them? Any information will be thankfully received.—FRANCHISE.

4738.—Cape Gooseberry.—I shall be much obliged by information as to treatment throughout the year in pots (oil, manure, pruning, winter temperature, ventilation, &c.)?—J. D. M.

4739.—Lining a garden.—Will someone kindly tell me how much quicklime would be required to give an acre of garden a good dressing; also how should it be applied?—WEST RIDING.

4740.—Manure from Pine-needles.—Will anyone kindly tell me if I can make manure out of Pine-needles, and how? Or if I must burn them will the ashes be good for manure?—FRANKHAM.

4741.—Perial Ranuncul.—Will you kindly inform me if Perial Ranuncul would grow and bloom well in a box in a cool greenhouse; and would they do so earlier than in the open ground?—F. E. S. M.

4742.—Destroying weeds.—I want to put a liquid on my paths to destroy weeds, but am afraid to buy the weed-killer because of the poison, as I keep poultry. Will someone please tell me of a simple and safe one?—M. ANGELO.

4743.—Mignonette, &c.—Would someone tell me if Mignonette and Salpiglossis seed were sown now under glass they would flower through the winter? And how can I get the Mignonette high? Any information will oblige.—G. J. D. D.

4744.—Pteris hastata.—Will anyone kindly tell me how to grow the above, also the kind of treatment it requires? I have tried to grow it in the greenhouse with other Ferns, but as soon as the fronds come up they die off brown.—H. ROBINSON.

4745.—Removing Asparagus.—I have a bed of Asparagus that I particularly wish to remove to another site this month. Will someone kindly inform me if this may be done with safety? The plants were two years old when planted in.—J. O. FUSSELL.

4746.—A White Chrysanthemum.—Will anyone kindly say if there is a white Vivand Morel Chrysanthe-

mum? I have one of my Vivands having two flowers, each over 12 inches across, pure-white, and I think an improvement on the true variety.—J. ROBINSON.

4747.—Thorn hedge.—In the centre of my garden there is a row of Thorn-trees about 6 feet high, running north and south. Would it be best to dig them up, or is the amount of timber they afford of greater value than the nutriment they extract from the soil?—L. L.

4748.—Strawberries not bearing.—Referring to article in GARDENING on Strawberries, page 424, September 30, can you tell me of any way to find out the Strawberry-plants are mellow? I have had some Hants-bells not doing well and bearing badly.—CHARTER.

4749.—Treatment of Gloxinias.—Will someone kindly give me a little advice on Gloxinias? I have some plants that have been rather neglected. If you will kindly give me a little advice on potting and soil I shall be glad. They have been standing in the same pots for two years.—WILLIAM GRAY.

4750.—Tomato growing for market.—I should be much obliged to anyone kindly informing me the title, price, and name of publishers of a small book on Tomatoes growing under glass for profit, as I am thinking of growing Tomatoes for the market when I go to England next spring?—TOMATO GROWER.

4751.—Goronilla and Cytisus.—I have some of these in fairly large pots which I sown last year, and have been outside since May. The pots seem quite filled with roots. Could I stake the old soil from them and plant in the same pots with fresh mould, and, if so, what sort should it be?—BALDOCK.

4752.—Blight on Apple-trees.—I have several large and productive Apple-trees encrusted on both trunk and small branches with a white blight, sometimes all round the branches, sometimes hanging in crystals. I have washed them with soap and sulphur without much effect. Is there a remedy?—POMONA.

4753.—Planting a Pear-tree.—I should be glad to know if a Pear-tree should be planted now or in spring? I wish to plant a Williams' Bon Chretien Pear, and train it umbrella-fashion. Any details for soil and cultivation will be gratefully received. The position is sunny and sheltered, and is the late of Wight.—H. M.

4754.—Young Vines.—Last spring I planted several young Vines, and have each made about 20 feet of growth, and this is ripening nicely. The rods are each about 1 1/2 inches circumference at the lowest wire in the vicinity. How much growth ought I to leave above the lowest wire at the next winter pruning?—J. W.

4755.—Scale on Ferns.—I have scale on nearly all my Ferns. I should be glad to see some advice how to destroy it? I have a lot of young Begonias just up from seed I saved this year. What treatment shall I give them during the winter? Shall I dry them off or keep them growing after they are potted off singly?—H. W. C.

4756.—Growing Roses.—I intend going in this year for Roses. Aspidiotus kills the young of the 12 best dark hybrid roses, also the name of a few of the best light and lighter-coloured ones.—INQUIRER, Cork, Ireland.

4757.—Cooking Custard Marrows.—Will someone kindly tell me how to cook Custard Marrows. Some were boiled more than 100 hours and remained as hard as bricks. They were with great difficulty cut open, and the inside was found to be cold and rattle, but the outside had to be thrown away. Is that their usual state?—L. J. L.

4758.—Treatment of a Banana.—I had presented me a nice plant of a fruiting Banana nine months ago, which has reached to the height of 4 feet, growing in a 12-inch pot. Would some grower of the above kindly tell me what size pot I should put it in to fruit, and then should I expect it to show fruit? Any cultural notes would oblige.—INQUIRER.

4759.—Sweet-scented Carnations.—Will someone kindly tell me which of the following Carnations are most sweet-scented?—Duchess of Fife, Countess of Paris, Geometrica, Her Majesty, Keston Rose, Mrs. Frank Wray, Mrs. Reynolds Hole, Nurse Still, Pride of Great Britain. I shall be glad to know the names of other scented ones with large flowers.—DIAMANT.

4760.—A draughty corner.—I have a very small plot of ground, 9 feet by 4 feet, contains a good soil, faces the north, and in a draughty corner lot, gets no sun. Now what could I put down there, please? I would any kind of fruit-trees or vegetables, or, failing these, could anything evergreen be put in? The district, near Manchester, is also rather cold too.—QUEEN'S ROAD.

4761.—Flower-farm in the Riviera.—Which part of the Italian Riviera between Ventimiglia and Leghorn is most suited for a flower-farm? Does it require a large sum of money to begin with, and about how much? Which would be the best market for the sale of the produce? Could a practical man to undertake the heavy work be obtained by advertising in GARDENING?—Q. M.

4762.—Lawn-tennis ground.—Advice wanted as to best winter treatment? The situation is somewhat low and damp. The Grass wants strengthening and enriching, and anything that assists drainage would be beneficial. The soil underneath is poor and sandy, and for some years the Grass was neglected. Our road-sweepers, I fear, contain no granite, and would not be of much use.—ARMISTY.

4763.—Grapes not colouring.—I have a large vine planted with Gros Colman Grape, which, although a good size, are not colouring very fast. I should be much obliged if anyone who has had experience would tell me if it would be best to keep the house open top and bottom a little at night to hasten the colouring, or whether they are best shut up tight at night? I am heating nightly with hot water.—ANXIOUS.

4764.—A sloping border.—I am forming a sloping border facing west in order to hide a path which is a right way of way. At the back of the border, and overhanging it are some Elms and Oaks. What shade could I plant in the border to make a screen that would be most like to give shade under the trees? Would Potted Rhododendrons be likely to answer in winter? The climate is cold, but the situation is open.—E. ST. ANTON.

4765.—A Laurel shrubbery.—I had a Laurel shrubbery planted 20 years ago, but now overhanging by Oak and Yew-trees, and shaded on the east side by the garden wall. The Laurels were kept cut to hedge height. They are now dying off at the top, and require cutting down, leaving only a few green sprouts from the roots and the bare soil. What can I do to this, and what shrubs could I put up under these trees?—MONA.

4766.—Building a small greenhouse.—I should be obliged if someone would give me advice as to building a small span greenhouse, about 12 feet by 10 feet? I am anxious to build it myself, and I am a good enough joiner to do such work. What I want is the measurements, kind of wood, &c. Is there any magazine which has published any drawings of such a house as I want? I should be thankful for any tips on the subject.—WRS.

4767.—Dwarf blue-flowering plants.—Will someone kindly suggest a dwarf blue-flowering plant to serve for outside bordering? I have two long beds, 4 feet wide, with Carnations down the centre, and purpose having, when the time arrives, Scarlet Geraniums on each side, and to complete the beds require an outside edging of blue. I do not care for Lobelia, but should prefer some other plant growing from 8 inches to 6 inches in height.—T. W. C.

4768.—Craspers on West-end houses.—I should like to see a great favour if someone would be so good as to state in next week's number the names of that will creep outside on many houses in Grosvenor street, Grosvenor place, and, in fact, hanging from most houses in the West-end? The root is not in pots, but generally on the outside area, growing up the walls and hanging therefrom. It looks like a kind of Virginian Creeper, but that is not what I am told.—BOLESLAW.

4769.—Tropaeolum speciosum, &c.—Would someone kindly give me information as to the name of the following plants: Tropaeolum speciosum (Flame Nasturtium), Spiraea alba, Myrtle odorata, Hesperaloe parviflora, Trollius dahuricus (Globe-flower), Galium (Callifloria), Dahlia, Funkia grandiflora, Romneya and Perennial Sunflowers, which are raised from seed and which from plants, and when they should be planted? Any information will be very welcome.—G. I. H. D.

4770.—Asparagus and wireworm.—I have a field of about four acres planted with Asparagus, and I find the wireworm very destructive between October and March, the time the Asparagus is in a dormant state. Will anyone tell me if soil, sown now, would destroy the wireworm and not injure the Asparagus? I propose sowing salt or nitrate of soda next March, which will benefit the Asparagus and destroy wireworm, but in the meantime should like to know what will destroy the wireworm and not injure the Asparagus?—W. E. H.

4771.—Grapes for a cold-house.—I observe in GARDENING, 4623, in answer to an enquiry respecting best Grapes for cold-houses, a correspondent names Black All-Garden as being not at all the best. As I have understood from several amateurs that this Grape frequently refuses to do much under cold treatment, I shall be glad to have another opinion. Perhaps some amateur will give his experience during the season? Is Trentham Black considered a good variety for a cold house? Does it set and ripen as easily as Black Hamburg?—TREVOR.

4772.—Treatment of Ferns.—Will someone who understands Ferns please to tell me why Ferns go speckled with white spots, and why they hug? They are in the Ferns are covered with white spots, and in the meantime I have caused would spoil the Vines. I have had a mortar hung between them and the Vines during the hottest parts of the summer. I should like to know if spraying the Ferns would injure the Vines, the Grapes of which are always shrivelled to some extent?—ASTORIK.

4773.—Apples, &c. for a small garden.—Would someone tell me if the following would be good varieties for two rows of bushes in a small walled garden? Apples—two of Cox's Orange Pippin, two of Ecklinville, and one each of (which does well in a wall in this country) Golden Pippin, Lane's Prince Albert and Worcester Pearmain. Cherries—May Duke and White Heart. Plums—Early Prolific and Drap d'Or, and two Victorias; also, for north wall, Belle d'Or and Cherry, and for south wall Green Gage and Golden Drop Plum. Soil, peaty on gravel; county, Cornwall. I have Morello Cherries and several varieties of Apples, but no Plums.—A. H. M.

4774.—Freaks of Nature.—"One of the most wonderful freaks of Nature ever known in this country may be seen at Biston, in Lincolnshire, where a tree which has been for many years produced Apples this season. The tree bears reamonnias to both kinds of fruit."—Christian Herald, September 21st, 1883. Can this be possible? I have some Plum-trees that do not bear any fruit at all. I should not mind if they did bear Apples, or even Pears, so long as they produced something. I have also some Pear and Apple on the pyramid and bush that bears nothing. I should be glad if anyone could tell me how to make them bear? They are annually pruned—that is, the younger growth out off. Would it be better to cut off the lower branches, thin out upper branches, and let the tops longer go up so as to get more sun and county taken from a tree that did not appear to have had a kulle put into it for 20 years, and numbers more close to it that were the same, but had more fruit on them.—H. B. Hants-road, Finsbury-park, London, N.

4775.—Cabbages clubbing.—Can you tell me why I am so unfortunate with my Cabbages, Brussels Sprouts, &c., clubbing? I have been an amateur gardener now for about ten years, and have been very successful with all my vegetables until during the last three years have been troubled with this disease. I have a good piece of ground, and manured it well for four years. I have only put a little during the last three or four years. I buy my seed from one of the best seedsmen in London, and the plants thrive until they are transplanted, when about three-fourths of them are affected by clubbing, and are consequently quite useless. Thinking this was caused possibly by wireworms, some of which I have some across in turning my ground over, I covered the garden with gas-lime, but

strange to say, this neither killed the wireworm or stopped the grubbing. I think the lime must have lost its power before I had it. I used the lime through seeing it recommended in your paper. Kindly assist me if you can.—OLD CHARLTON.

4776.—**Marechal Niel Roses.**—I have two splendid roses in a cold-house, which I planted in the border six years ago. They grew so good that the first three years, and during the last three years I must have had 500 or 600 roses from them. From what I have read in your paper from time to time I have been afraid to touch them very much with the knife, merely taking a few weekly shoots out here and there. They have now, however, covered the whole roof of my greenhouse, and I should like to know whether I might cut any part of it away, and when this should be done? There are a great many useless little branches, which I do not think are ever likely to bloom, and it would give more light and air if I could, without injuring the trees, cut them all away. I cannot grow much else in the house, as everything seems to be drawn into a weakly condition through the roses excluding the light. I have one shoot which has sprung up during the last few weeks, so thick so one's finger, and is now about 12 feet long, and is not yet done growing.—OLD CHARLTON.

4777.—**Management of H.P. Roses, &c.**—I have a border, 35 yards long by 24 inches wide, containing two rows of Pink ordinals, planted at distances of 4 inches apart along the border and 3 inches between the rows. Behind these are Carnations, planted at equal distances of 30 inches apart, and behind these are the roses. The border being rather narrow, I wish to take into it about 1 foot out of the kitchen garden, thus making the border 1 yard wide, and to do this of course it will be necessary to remove all the roses. I must now explain that most of the roses are from 6 to 8 years old, and from indifferent pruning had grown into unsightly bushes. In the spring of this year (to remedy this defect) I cut them down to 4 inches of the stocks, which are Manetti, for the purpose of making entirely new wood. I gave them an abundance of manure, which has caused them to throw up new stuff vigorously, and I suppose it is a natural consequence that I have had but very little bloom. Now, what I want to know particularly is, if I take them all up and replant them at once in the desired position, will it interfere with their blooming freely next year, and how should I treat them to get the best result? A few of them I had cut rather thick, which is perhaps owing to their being tired of the soil they are planted in, although the garden generally produces good crops of almost anything that is planted in it, the soil being considered rich and good, but rather light. I am told that an addition of old turf and a little marl would greatly improve matters, but these are very inconvenient to get etc. I have about two good cartloads of weeds and fibrous roots of Grass that have been taken from an adjoining garden, which has been lying idle and unutilized for some years. These have been lying in a heap since last March; would this, with an addition of horse-manure, be a good thing to put to each rose when transplanting? If not, kindly put me in the way of treating them properly, and very much obliged. I shall be glad if you will inform me what you think would look best planted in the line of roses between such; also what would look best between the Carnations? Would Fanny's do, of which I have a stock of good ones? I should be glad to hear from Calceolarias and "Garanims." Brompton Stocks between the roses has been suggested to me, but probably you will know of something better.—Norvic.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

4778.—**Aspidistra** (1892).—I have found after many years of growing these plants that the best method of producing variegation is to treat them to plenty of heat—in fact, as genuine stove-plants.—J. J.

4779.—**Insects on Cabbages** (Lieut.-Col. Strong).—From "Col. Strong's" description I imagine the insect he finds on his Cabbages are the Snowy-fly (Alysiodes proteola). Spraying with soft-soap and water might be useful, but cutting off the infested leaves and destroying them is the best plan.—O. S.

4780.—**Lorans** (J. B.).—are showy annuals with very pretty flowers. I have generally avoided them, because, because the stems and leaves have a thick coating of stinging hairs, and they are dangerous plants for a lady to have anything to do with. The hairs, being poisonous, leave a bad sensation for some time; but if these can be avoided they are decidedly worth growing. Seeds may be sown in the open border about the end of April or beginning of May.—J. J.

4781.—**Dendrobium formosum giganteum** (J. Edmonstone).—Your flower of this species represents a very superior form, and from what you say of the plant it is a very strong growing variety. You will find I said something about the treatment of this species some little time back, but if you cannot find it I will repeat it, or something like it, if you wish? Do not cut the plant up solely for the sake of increasing the number of plants. Keep it intact.—M. B.

4782.—**Oncidium Leopoldianum** (J. Lefroul).—I am asked two questions by this correspondent, one of which I cannot answer. He says, "Can you tell me what this plant is like?" but I cannot, as I have never seen it; but as it was introduced by M. Linden, of Brussels, and named after the King of the Belgians at M. Linden's request, I suppose it should be a fine thing, and M. Linden or any one else would give good advice by sending me a flower to the office. The second question, "Is it worth growing?" I cannot answer, but I should think, from what I have heard of it, that it must be a very fine species, but I do not know it at all.—M. B.

4783.—**Maxillaria Sandoriana** (G. Radford).—Your flower case quite safely, and it is quite true. I do not doubt the very handsome specimen you have sent me is a Maxillaria. It was introduced so recently—about ten years ago by Mr. Sander, of St. Albans, so that there yet appears a chance of more fine species turning up, for one can hardly suppose that this is the last new and the fine

that is to delight our eyes. The plant I have found to thrive best in the best of the Cutleys-house. Its flowers resemble those of Stanhopea, signs very much, save in having a different shaped lip, and being destitute of the somewhat perfume so powerful in that plant.—M. B.

4784.—**Dahlias in India.**—H. Jones talks of the beautiful wild Dahlias to be found in the neighbourhood of Darjeeling. Now he is not the first person who has talked such utter rubbish to me. The facts, the Dahlie is a native of Mexico, and if they are to be found growing in a wild state in India, they must be garden escapes from some place that has had some of these plants imported to the country. Neither can I think, with "Mr. Jones," that they are far more double than we see them, because the flowers has only recently gone out of fashion all over the world. And, again, the double flowers are all the work of the florist. No one ever saw a double flower in nature, so that this argument also against "Mr. Jones." I have little doubt but there are many other western plants to be found growing wild in the neighbourhood of Darjeeling besides Dahlias.—J. J.

4785.—**Oypripedium niveum.**—My old friend "B. M." is still following me up with this genus and its wants. He says he cannot get it to grow, after trying it in peat and Sphagnum, in peat and loam, and even in common garden soil. Well, *O. niveum* is most beautiful little species, and I am not surprised if it is likely to be trifling over his failure. The plant, I should be remembered, is a native of many small islands in the Indian Archipelago, which are all of limestone formation, and it is found growing in rocks of this material. Why not, then, set about growing it in it at home? And I therefore advise "B. M." to get some limestone, and break it up rather small, and mixing with it some loam, and use, too, this limestone as drainage. This is the best advice I can give "B. M." in his difficulty. The plants may be transferred at once, in order that they may become established before the dry and hot spring months.—M. B.

4786.—**Tuberous Begonias in winter** (A. Egger).—I am glad you have taken these in hand, for by my thinking these are the most showy and the most enduring flowers for an amateur to take up with; but you must select the kinds with short flower-stalks or peduncles, which bring the flowers up facing you, in the way of looking now. I have a little house between two kitchens, facing west; it is without any heat. I potted the bulbs in the early part of April. They grew, and began to flower in May, and were very striking in the last of October, they are not so gay and fresh as ever, but they are very gay. It is true the flower stalks are longer on some of them, and the bottom leaves begin to go off, but they look fresh and well enough to last the month out, certainly. But what is to become of the bulbs in the month of November? I suppose I shall have to ripen them indoors before storing away for the winter, but I hope to let you know what effect this long season of flowering has had upon the bulbs.—J. J.

NAMES OF PLANTS AND FRUITS.

* Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C.

Names of plants.—Constant Reader, Holmfirth.—Impossible to name from single leaves only, and you have not numbered them. Send shoots numbered.—J. L. Naylor.—*Passiflora roseacea*.—H. Brown.—1, *Begonia insignis*; 2, *Begonia Weltonensis*; 3, *Begonia maculata*; 4, *Enallagma japonica variegata*.—J. M. B.—1, *Lycaster formosa*; 2 and 4, *Conifers*, send again when bearing cones; 3, *Spiraea* apparently, but we cannot name accurately.—H. H.—1, *Aster Notia-Anglia*; 2, *Aster asvia*; 3, *Saxifraga Wallackii*.—A. Water.—1, *Vallis purpurea*; 2, *Eupatorium riparium*; 3, *Lobelia floribunda*; 4, *Celastrus crotela*; 5, *Elanogon variegatum*.—J. P. S., Northumberland.—1, *Mexagone cordifolia*; 2, *Stachys lanata*; 3, *Achillea millefolium var. roseum*; 4, *Pulmonaria officinalis*; 5, *Lamium* species.—D. M.—We cannot name. Consider accurately unless with cones.—Gron.—Apparently *Pyrus japonica*, but please send again when in flower.—J. W. Mead.—*Arum maculatum*.—J. Wood.—*Orthogalum* species.—Norvic.—*Mesembryanthemum*, but cannot name accurately without flowers.—I. M.—Probably *Methaphyllum asperagoides*.—Rose, Boughton Leigh.—1, *Rettinea plumbea*; 2, *Send in flower*; 3, *Cypripes Lawsoniana viridis*; 4, *Mesembryanthemum*; 5, not recognised; 6, *Orthogalum Jaburum variegatum*; 7 and 8, not recognised.—J. S.—1, *Lycaster formosa*; 2, not recognised; 3, apparently a *Tyda*; send in flower; 4, *Polygonum himalaicum*; 5, *Orthogalum Jaburum variegatum*; 6, *Davallia canariense*; 7, *Mosswort*; 8, not recognised; 9, *Fuchsia japonica*.—C. P.—*Aster amellus besselobus*; 2, *Bedum Stebbeldi*.—C. M. M.—*Thorn Apple* (*Datura Stramonium*).—Miss E.—*Oncidium varicosum*.—S. C. O.—*Phytolacca decandra*.

Names of fruit.—M.H.—Apple: 1, Warner's King; 2, not recognised; 3, Honey Mering; 4, *W. B. Wheeler*;—Apple: 1, Cox's Pomona; 2, Cox's Orange Pippin; 3, Lemon Pippin; 4 and 5, local sorts not known; 6, Wellington probably; 7, Hollandbury; 8, Besspool;—Kinaforth.—Apple: 1 and 2, not recognised; 3, Norfolk Beauty; 4, Pig's Nose; 5, not recognised; 6, Schillville; 7, King of the Pippins.—Spencer Riv.—Apple: 1, Ribston Pippin; 2, Cellini; 3, not recognised; 4, Tyler's Kernel; 5, Yorkshire Beauty; 6, Wallington; 7, Emperor Alexander; 8, Warner's King; 9, Norfolk Beauty; 10, King of the Pippins; 11, not recognised; 12, Warner's King; 13, Yellow Ingestre; 14, Binham Orange; 15, Warner's King; 16, Cat's-head; in future please do not send so many kinds.—Jas. H. Steiman.—Apple: 1, Rymer; 2, Emperor Alexander; Pears: 4, Marie Louise; 7, Autumn Crassane; 9, Louise Bonne of Jersey; 10, Beurré Diel; others not recognised.—F. J. Colman.—Apples in too bad a condition to name.—Jas. Hutchinson.—Do not recognise the Apple sent, so send something else of the value.—Apple: 1, Norfolk Beauty; 2, Lemon Pippin; 3, Ribston Pippin; 4, Ribston Pippin; 5, cannot name; 6, King of the Pippins.—Bretchlands House, Dornet.—Apple Warner's King.—Lady Bridge.—Pears: 1, Catillac; 2, Glon Morcaux; Box of Grapes (no name or address).—White kind; *Blanc de France*; Blank, apparently very poor Blank Hambroë.—

J. C. V.—Pear: Marie Louise d'Ucole; Apples: 2, Emperor Alexander; 3, Yorkshire Beauty; 7, Hobbinville;—Worms.—Apples: 1, Warner's King; 2, Five-crowned Pippin. Pears: 3, specimen rotten, cannot name; 4, apparently a Bergamotte, but had specimen.—Zouch.—Pears: 1 and 2, apparently Beurré Diel; 3, Calabrese.—Richard Hutchinson.—Pears: 1, Marie Louise; 2, Autumn Crassane; 3, Beurré de Caplaumont; 4, Doyenné Bouchou; 5, Pitamont Dutchesse; 6, Apple Mère de Ménéage.—Midvale.—Apples: 1, Catillac Coddin; 2, Cox's Orange Pippin; 3, Rymer; Pears: 1, Winter Crassane; 2, Winter Nain; 3, Napoleon.—A. Derrant.—Pears: 1, Glon Morcaux; 2, Crassane; 3, Pâre Colmer.—Leigh House.—Pears: 1, Duchesse d'Angoulême; 2, Louise Bonne of Jersey;—J. Wood.—Apple Binham Orange.—J. Curtis, Hulbeck.—1, Warner's King; 2, Seek no Further; 3, specimen rotten; 4, not recognised; 5, Rosemary Russet; 6, not recognised; 7, Yorkshire Beauty; 8, Bedfordshire Pudding; 9 and 10, not recognised; 11, 12, 13, not recognised; 14, Northern Greening; 15, Unspiced 15 and 16, not recognised; 17, Hollandbury; 18, Cox's Pomona. Pears: 1, Beurré Bosc; 2, not recognised; 3, Marie Louise; 4, Louise Bonne of Jersey; 5, Autumn Crassane; 6, Violette; 7, Napoleon; 8, Eyewood; please do not send an unreasonable number again.—Hayford.—Apples: 5, Mère de Ménéage; 6, Honey Mering; 7, Wellington; 8, Cockle's Pippin; 10, King of the Pippins. Pears: 1 and 2, identical, Marie Louise; 3, Beurré Bosc; 4, Brown Beurré; 5, Beurré Diel.—Mrs. Greenhouse.—Apples: 1, Lemon Pippin; 2, bad specimen; 4, Cox's Orange Pippin; 5, Mère de Ménéage; 6, Royal Russet; 8, King of the Pippins; 10, Yorkshire Beauty; 18 and 19, Five-crowned Pippin; 20, Seek and Segar; 22, not known; 23, Northern Greening. Pears: 13, Vicar of Winkfield; 17, Williams' Bon Chrétien; 25, Louise Bonne of Jersey; 26, Forelle; 27, Brown Beurré; 28, Plum, Oon's Golden Drop; other specimens too poor to name; we think this a most unreasonable lot to send at one time.—W. F. J.—Apples: 6, Binham Orange; 7, Norfolk Beauty; 8, Warner's King; 9, King of the Pippin. Pears: 1, F. W. Dale's St. Germain; 2, Verulam; 3, not recognised; 4, Violette; 5, Glon Morcaux; 6, Catillac.—The Hospital, Broadborough-pool, near Birkenhead.—Apples: 1, Five-crowned Pippin; 2, Binham Orange, gathered too soon.—A. A. Reubell.—Pear Beurré d'Anno.—P. M. York.—Apples: 1, Norfolk Beauty; 2, Yorkshire Beauty; 3, Cat's-head; 4, King of the Pippin.—Strat.—Apples: 1, Yorkshire Beauty; 2, Seek-no-Further; 3, King of the Pippin; 4, Pear, cannot name.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

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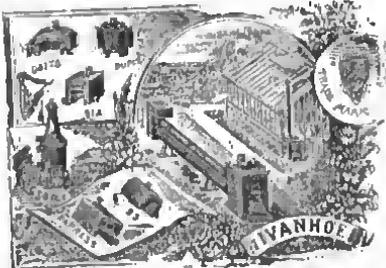


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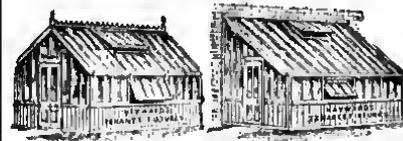
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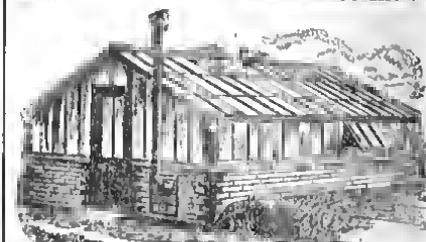
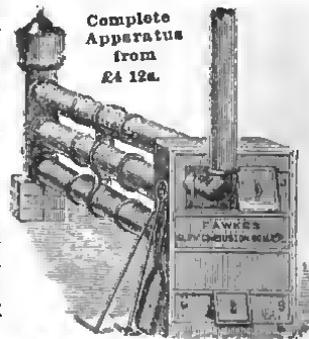
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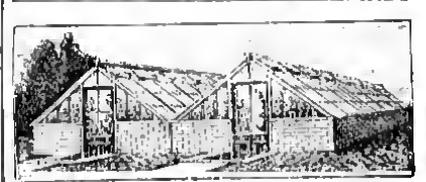
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URBANA-CHAMPAIGN

GARDENING ILLUSTRATED.

No. 764.—VOL. XV.

Founded by W. Robinson, Author of "The English Flower Garden."

OCTOBER 28, 1893.

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VIOLETS (SINGLE AND DOUBLE).

THIS has been an exceptionally trying year for Violets, and very much more than ordinary care must have been given if they are now in fine, healthy condition, as they are essentially moisture-loving plants, and from the date when the runners were potted until recently it has been unusually dry, and with an amount of direct sunshine unequalled for many years. Under these conditions it is no wonder that we hear of failures on all sides, for when Violets are grown by the acre artificial wintering is a very costly affair, and unless it was done this year there was no chance of success, as the spring was even more intensely trying to the fresh-planted young plants than the heat of summer was to such as survived the ordeal. The single Russian Violets of the Czar type are very largely grown for market, and the usual plan is to make fresh beds every year, digging up the old plants, and replanting the best of the young rooted runners on deeply cultivated and well-enriched soil, and this year those who prepared the beds well have cause to rejoice, for plenty of menure and a deep root-run is better than any kind of artificial watering. Keeping the runners out close off is of the greatest importance, so as to concentrate the strength of the plant in the crown. Such plants will now be ready to burst into bloom, and produce fine flowers on long foot-stalks, and it does not take many blooms to make a bunch. Backed up by its own foliage, the flowers look lovely, and sell freely. Double Violets are seldom satisfactory if left entirely in the open air, but bloom with great freedom if lifted and placed in frames at this time of year. The routine of culture is very similar to that adopted with the single kinds, only that being of a tenderer nature they require more care in all stages of their growth. The most useful varieties are the old Neapolitan and its near ally, Marie Louise, which in many respects is superior to the older variety, and Comte Brezka (white). During such summers as the pasta partially-shaded position for the beds is a great gain, as it reduces the necessity for such continuous waterings; but great care must be taken to keep red-spider from getting a hold on them, for it soon destroys all the foliage. All runners must be cut close off, and by the end of September the plants will be ready for lifting with good balls of earth, and replanting in frames set in the best position for catching every ray of sunshine. Frames that have been in use for Cucumbers during summer answer well for the winter quarters of double Violets; they require plenty of air at all times when there is no frost. I find a good layer of Coconut-fibre spread between the plants of great service, both in keeping the roots from drying, and it also makes a clean surface for the blooms to rest on. I may add that the blooms should not be picked until they are fully grown.

J. Groom, Gosport.

Classes of florists' Tulips.—The differences between the various sections of Tulips are puzzling to amateurs, and in this is the Ameri-

can purchaser bulbs I may point them out. The first stage of a seedling Tulip is always, without exception, a self-coloured form, which is called a breeder—either rose breeder, hybrid breeder, or hizarre breeder, according to the colour of the flowers. The offsets are always subject to break into a flamed or feathered flower. The three sections are easily distinguished, not by the colour of the base, but by the colours of the flowers as follows. **Roses:** All rose-coloured flowers have a white ground when broken, or rose-coloured with a white base in the breeder stage. Hybriders include purple of all shades on a white ground when broken, or purple with white base in breeder stage. Bizarres include all those with yellow grounds, or yellow bases in breeder stage.—V.

NOTES ON THE TREE-PEONY.

THE Tree-Peony is one of the most beautiful of early summer flowers, and this note is prompted for the reason that the planting season is at hand. We owe much to the Japanese and Chinese for the present perfection of the plant, as very few of the varieties that now obtain with their colour or form are of European origin. It is somewhat difficult to account for their comparative scarceness. They are grown in pots, but not so often in the open, where, in suitable positions, they form bold, graceful, and beautiful groups, very distinct from the herbaceous varieties in expression. One great difficulty is that when the winters are mild, the plants commence to grow, and then comes a cold wintry spring, to the severe injury of the new leaves. The remedy is to shelter them from keen easterly winds and early sun, but, of course, this protection against the early sun, that promotes too rapid a growth, must cease when all danger from frost is over. In many places, however, in warm situations, it will not be necessary to give even slight protection, and where Tree-Peonies succeed well there are few plants when in full bloom that are more beautiful either in leaf or flower. A single plant on the lawn is delightful, spreading about in its own way, and we get not only the beauty of the flaming flowers, but many colours on the young leaves as they show in spring. Much the same kind of soil that suits the Herbaceous Peonies will also do for the tree varieties; but it must not be too heavy, although plenty of manure is necessary. We have seen very beautiful clumps in almost sand, but a happy medium is best—that is, a mixture of loam and well-decayed manure, made lighter if too heavy, by the addition of sharp sand. Tree-Peonies are usually propagated by grafting on the roots of the herbaceous kinds, and bury the graft in planting a little under the soil, so that the plant may become in time on its own roots. If the specimens are not very large at the commencement, about three years will elapse before they will bloom respectively, but after that period a profusion of flowers may be looked for, the beauty of the shrub increasing with age. If pot plants are put out the best time for this operation is spring, when all danger from frost is over, but the usual months for planting are September or October, the former for prefer-

ence, so that they may become fairly well established before cold weather occurs. There are many varieties, and the finer ones may be reserved for pots. The best are Bijou de Chrusan, the flowers double, very freely produced, but the plant is, unfortunately, not quick in growth. Beauty of Canton (menue-purple), Blanche de Noisette (flush), Colonel Malcolm (purple-magenta), Comtesse de Tador (salmon, double), Impératrice Josephine (rose or violet, very double, bold and handsome), Laoten (white, single), Madame Laffay (rich pink, the colour deeper in the centre of the flower), and Reine Elizabeth (salmon-pink, an excellent variety for indoor culture). V. C.

4703.—Enlarging a garden.—It is too late for this year to sow anything that will do to dig into the ground. Next season you may sow Turnip-seed as the summer crops come off, and in the autumn dig in the crop of green stuff. If the Turnip-seed is sown fairly thick there will not be any large bulbs to the plants. If you are afraid that there are wireworms in the new soil you had better substitute Mustard for Turnip. A friend of mine has certainly proved that when green Mustard is dug into the ground that the wireworms do not increase if it does not destroy them. But the Mustard must be dug in before the frost is severe enough to injure it. If the new ground is covered with green sward you had better have the turf shredded, which would destroy a good many insects.—J. C. C.

—To wait for a green crop to grow for the purpose of digging it in loses valuable time. Good dressing of stable or farm-yard manure and trench it up, leaving the surface open and rough for the weather to act upon it. If the ground is light leave the manuring till next February, but trench it roughly now.—E. H.

4656.—Spring bulbs.—The pots in which spring bulbs, such as Hyacinths, Daffodils, Tulips, &c., are potted should be buried in a bed of fine coal-ashes—i. e., the ashes after they are riddled from an ordinary wire cinder-sifter, in the open air. These ashes are very useful in gardening, as they are the best preventive of worms getting into the pots, and are usually free from insects, while slugs and snails object to travel over the rough surface, and so the plants are safe which stand on a bed of ashes. This should be arranged in the corner of a back-yard or garden in a sheltered, sunny position for early bulbs, which are best covered up with the ashes to the depth of 2 inches or 3 inches until they have made their roots, for their well-being largely depends upon this process taking place before they are excited to leaf-action by thin light. In three weeks or a month from the time they are buried they may be taken up, the pots washed, and the upper ashes cleared away, when they will grow well in a greenhouse or a window without much fire-heat.—I. L. R.

4731.—Miscembyanthemum and Double Petunias.—Neither of these can be relied upon in a cold frame. The Petunias will certainly perish with damp, even if the frost is kept out.—E. H.

—Generally speaking, it is necessary to have artificial heat in order to winter plants successfully under ordinary conditions. In a very warm situation in the extreme south or south-west, near the sea, some of the plants might survive an average winter; but, as a rule, heat is requisite, damp, as well as cold, being very troublesome without it.—E. H.

GARDEN WORK.*

Conservatory.

For two or three weeks at any rate other things must be subservient to the Obryonanthema, and this means open ventilators at any favourable opportunity, with just enough fire-heat to keep the atmosphere buoyant and free from damp. What a terrible plague the arriags have been this season! Night and day we have been on their track, and still some harm has been done. Where the right sorts have been grown there will be a grand display through the autumn and winter months, and if snob varieties as Ethel and Mrs. Deane have been grown in quantity there will be plenty of blossoms to outlast Christmas and later. Discontinue the use of fumigants when the flowers are expanding. Mildew will probably be present on a number of the sorts. The Queen race are very subject to this pest, and if not taken in time a good deal of damage will be done. Now that damp weather has set in mildew may appear in some of the soft-wooded Hesthas, and on the young wood of Marechal Niel and other delicate-growing Tea Roses. This should be promptly met with black sulphur. With Roses planted out in the greenhouse the young shoots are the worst attacked, and these may be cut out without injuring the plants as late sheets will not flower. Soarles' Paragonium F. V. Raspall in good-sized plants will be very effective now, and these must be kept in a light warm-house near the glass, or the flowers soon damp. Onwardias are now very bright and effective in a light position and temperature which works at night from 50 degs. to 55 degs. This is a very good temperature for flowering stuff generally. It will be better to discard the syringe till the days get to lengthen again, and damp is so fatal to flowers. If insects appear on any plants of moderate size, such as Cinerarias, Paragoniums, &c., it will be more economical to dip them in a liquid insecticide than to fumigate with Tobacco. We are using Sunlight Soap, dissolved in warm water at the rate of 4 ounces of soap to the gallon, adding a wineglassful of paraffin-oil to each gallon of water. The disturbance of the mixture in a lifting plants in and out will keep the oil fairly mixed. A tub or an old tin bath do very well for dipping purposes. One dipping is not sufficient, but if followed up the insects will soon be got rid of. The earliest potted bulbs will now be coming into flower in the forcing-houses. Roman and Italian Hyacinths are very sweet and useful for cutting.

Stove.

There will be no scarcity of blossoms here now. Among the early-grown plants suitable for a small or moderate-sized house are Plumbeus Rosea (small lanternum). It has lavender-blue flowers, resembling an enlarged Argemone with a lignous habit. The plant forms a neat little specimen, and the flowers are lasting; may be moved to the conservatory when in bloom. There are also the Bilbergias, Aphelandras, Franciscoas, Bogotias, and Juncos, the cultivation of which presents no difficulty. Now that brick fires have to be kept going regularly, losses will have to be reckoned with, and it must not be forgotten that prudence in dealing with the heat saves both labour and expense. Among the winter-flowering Begonias which are now found so useful will be included the following: Isidria, mantata, nitida alba, sordida, comperiferosa gigantea, carminea, and lucidissima. These are best obtained from early spring cuttings, or if large plants are required strike the cuttings in autumn and grow on through the winter, keeping the leaders well pinched. Very large bushes of most of the above may be obtained from autumn-struck plants by the next autumn.

Forcing House.

This department will be found very valuable now. The early-potted bulbs may be brought in to get them on, and Lily of the Valley may be soon started to get them in bloom by Christmas. It is as well to give Vines in pots all the rest possible, and then bury them in a hot bed after the start has begun. The forcing of early Grapes does not receive the same attention now as was given to them before the introduction of Green Columns and other late-keeping sorts, but there is no comparison between early plants like Ambergris and late Columns as regards flavour, although the latter, when well ripened, are not so bad. I like them better than Alicante.

Unheated Greenhouse.

We are approaching the time when frost sufficiently sharp to penetrate the unheated house will soon be here, but if the Tuberosas, Fuchsias, and other rather tender plants which have been grown for their summer beauty have been potted away, either in the cooler or plunged in Cooco-nut-fibre in a corner of the house, where paper or some other kind of covers can be used to shelter as required. Good bushy specimens of the Gold and Silver Eucalyptus will be very effective. These are very pretty when trained up walls, and for this purpose may be planted in the border, but when grown in pots they are used to mean decorative with considerable effect. The Obryonanthema are at the present moment the leading feature, but a severe frost will injure them, and therefore when kept in a cold house a cover of some kind will be very desirable, but it should only be used when absolutely necessary, as a damp close atmosphere will be almost as injurious as frost.

Cucumber House.

Sixty-five degs. will be high enough at night, with as much rise as can be had from sun heat during the day; but be careful about the fire, not so much on account of the dearth of fuel as for the injury which strong fires very often do. It is the custom nowadays for large consumers of fuel to make contracts only in advance of the probable requirements. All through this coal strike we have had cheaper fuel than last year, simply because arrangements for the winter's supply were made long before the strike took place.

Cold Frames.

Give all the air possible to frames which contain Cauliflowers, Lettuces, Endives, Violets, and other hardy plants, but keep out cold rains. At the same time the roots

must have sufficient moisture. Frames containing cuttings of Calceolarias, Variegated Eucalyptus, Santolins incoas, and others edging an unprotected plants may still require a little shade on bright days, and the soil must be kept moist. Hyacinths and other bulbs for forcing will require about six weeks in the plunging-bed to make roots.

Window Gardening.

Good judgment is necessary now in watering all indoor plants. Tap each pot before watering, and be guided by the sound. If in doubt after this lift the plant and test its weight. Use only soft water. More plants are killed by over-watering than by forgetfulness at this season. At the same time letlage plants, such as Palms and Ferns, must not be allowed to get too dry for healthy root action. Aralias are more often injured by having too much water than too little.

Outdoor Garden.

In looking round among the hardy flowers the thought arises, why not plant more Aster n Starwerts, and let them grow into huge bushes? The flowers are bright and peaty for filling small vases, where heavy flowers would be out of place. They will grow anywhere, and are especially useful for filling up bare places among the shrubs in arid places. The custom of placing white flowers termed nurseries is well enough in itself, but it adds seriously to the expense of laying out new lawns, and further, it thins out the permanent things are often seriously injured. This is why I do not recommend this nursery system of planting. Plant those things that will look best to the future, and fill in with good hardy subjects or annuals in good-sized masses. I suppose everybody has done planting the early flowering bulb in November is the best time to plant Tulips. The 20th, or Lord Mayor's day, was the favourite time of the mid-fashioned florist, but it is not necessary to draw hard and leafless. Plant when the beds are in good condition, and let it be as near the 9th of November as possible. Loss no time now in getting to the Roses, and those who do their own propagating should plant standard and dwarf Briars, and set out cuttings of Blue and Manetti, and gather seeds from the Wild Briars on the hedges when ripe.

Fruit Garden.

Many are now busy planting fruit-trees, or preparing for that operation. There is more than one way of doing this. Many trees are seriously injured by being planted too deep, especially in heavy soil. If the collar of the tree is buried in a mass of heavy cold soil the tree will not thrive. Better by far make the surface soil the tree really desires a good bloom. The second week in November is the best time to plant Tulips. The 20th, or Lord Mayor's day, was the favourite time of the mid-fashioned florist, but it is not necessary to draw hard and leafless. Plant when the beds are in good condition, and let it be as near the 9th of November as possible. Loss no time now in getting to the Roses, and those who do their own propagating should plant standard and dwarf Briars, and set out cuttings of Blue and Manetti, and gather seeds from the Wild Briars on the hedges when ripe.

Vegetable Garden.

The falling of the leaves from the trees will place in the hands of the morning gardener a very useful course of heat that is loose and reliable for bringing on Beans, Peas, and Asparagus. Asparagus will force now on a hot-bed anywhere that the first bed takes a little more warmth to come into action than will be necessary later on. Young 4-year-old roots which have not been out from make the best stuff for forcing early, and will not require so much heat to start it into work. In forcing Rhubarb, start with an early variety, and leave the Victoria, which is a fine Rhubarb, for later use till Christmas or later. It is a great help to the gardener when he has some means for forcing early vegetables, and makes his intercourses for forcing the kitchen much easier. French Beans may be started in pots as often as is necessary to meet requirements. French Beans cannot be obtained in winter without plenty of heat, and they must be grown in a light house. It is time all root crops were secured and stored away in some place where frost cannot injure them. All roots retain their flavour and condition better, when in contact, or nearly so, with moderately dry earth. It is well known that Potatoes keep better when covered with soil in rather than in open air. Carrots, Beet, Turnips, &c., but all root stores should be looked for occasionally, and everything in the nature of decay removed. Trench over weedy ground. Do not manure light land till January or February. Cover the manure with soil to absorb its gases.

E. HORDAT.

Work in the Town Garden.

Tomatoes are still doing well, especially where they can have the assistance of a little fire-heat at night, and on dull or wet days. Even in the open the plants have not yet been injured by frost, but the temperature is now too low, and the sun not sufficiently powerful, to enable the fruit to ripen to any extent. Plants that have been grown in pots or boxes of moderate size stood or plunged outside, in stages of development, and it they can be brought into a light and well-heated house the fruits will ripen perfectly. This system has much to recommend it, for plants in pots or boxes can often be accommodated where it would be impossible to plant them out, and on the other hand, where there is nothing but the rich soil of an ordinary garden border available, covering the roots in pots or boxes is also, say 7 in. to 10 in. deep, will keep them well at home, and prevents undue luxuriance of growth. The

pot are, of course, to be plunged in the soil rather deep than the rims. Tomatoes planted out under glass now require very little water, unless a good deal of artificial heat is employed, and even then much less than during the tropical weather experienced on long days. But in pots, however, need rather liberal supplies, or at least according to the temperature. The plants will seldom fall to swell and ripen satisfactorily with the aid of a sufficient degree of warmth; but after that time considerable difficulty is often experienced in getting the flowers to set, especially during inclement weather or in a smoky atmosphere. Young plants from either seed or cuttings, for early fruiting next season, must be wintered on a high shelf, near the glass, in a light and well-ventilated structure. In a moderately pure atmosphere little trouble will usually be experienced in wintering them, but when there is much smoke or fog about they are very uncertain subjects. Onumbers, as a rule, do very little good to town gardens during the winter season; in warm summer weather they grow and fruit freely, but for winter work pure air and free light and sun are absolute necessities. Large-flowering Pelargoniums are to be accommodated in a very light and airy structure now and throughout the winter, with a temperature of not less than 45 degs. to 50 degs. at night. These plants do best on open sites where a current of air constantly passes through them; and they must also be very carefully and sparingly watered, none being given until actually required. The Zonal and Ivy-leaved geraniums will do in a temperature of 5 degs. to 10 degs. less, but even these like enough warmth to keep the air in motion and prevent damping.

THE COMING WEEK'S WORK.

Extracts from a garden diary from October 28th to November 4th.

Commenced to prune Pear-trees on walls. Having a good deal of pruning to do, it is necessary to begin early, and the trees are taken in rotation as the leaves fall, the Pear on walls generally coming first. The Peach and Apple, and Plums, and the Apricot and Peach being left till the last. In pruning hardy fruit against walls there is no risk in leaving the spurs long; overcrowding the foliage is quite as injurious a disease from the wall as when close to it; and there is the disadvantage, when the spurs are permitted to extend, that the shelter of the wall is to a certain extent lost. Whenever a spur appears to be getting too far from the wall I cut it out, and let a young spur take its place. Four-trees on a wall in a fertile country are as paying a crop as can be grown. To have the trees well lighted in a fertile condition it is necessary to keep both roots and branches well under control. Pruned Peaches in early houses. I have not been troubled with scale for years, and never paint the trees with anything. For many years past I have used Gishurst Compound, strong enough to kill the eggs of insects and the spores of mildew should any be present, and beyond that paint and washes are not required. The house will be closed for forcing about the end of December; the branches of the trees will probably be left loose till bearing the time has started, although if a spell of bad weather sets in the wood may be tied in earlier. I try as far as possible to get on with the outside work so long as the weather keeps open, and carry on the inside work when bad weather comes. The forcing Strawberries have all been plunged, but not all in coal-ashes, as there was not enough; and fled when the pots are packed in dry leaves, and covered with paper of a long fibre as an injurious effect upon the plants. In fact, plants in pots, unless plunged, are in a worse position than are those growing in the open ground. All Strawberries intended for forcing will be kept as much as possible in the open air, merely sheltering from heavy rains. Just received a bundle of Tea and other Roses, and as the beds were ready they were planted in arks. It is a mistake, I think, to send hundreds of miles away for Roses, as our good Rose nurseries in many districts, and it is always best to buy Roses where they can be seen growing. Cheap Roses and cheap fruit-trees very often disappoint. Above all things, if really good plants are required, order early. Immediately after planting state the standards. Some among us may object to standards; we may say they are short-lived, they are expensive, and at the best they are sawn and discoloured-looking to those who are not in the trade. All this may be true, but there is a place in every garden for a few standard Roses. Potted up a number of roots of Mint and Tarragon to come on steadily under glass. Made up a couple of Mushroom-beds in house. I make it a rule to keep all root-crops in beds filled up. The next bed that comes out will make an opening for Beakle and Rhubarb, which is forced with less trouble in a dark shed than anywhere else. Having plenty of leaves now to mix with the stable-manure, a bed has been made up for Asparagus.

4727.—Gazania.—I should say Gazanias might be left out in the open air in the Isle of Wight, but might get killed in the event of a very severe winter. It would be better, however, not to trust them, as they are not very hardy. The best way is to strike the cuttings in the summer and help the plants over the winter in pots. That is better than striking either early in the spring, or letting them remain in the ground through the winter. It is a pity that the bold and showy Gazania is not used more freely in gardens as an edging plant.—C. T.

Yes, I should say that these plants might be safely left out during the winter in the Isle of Wight, the soil being fairly light and well drained. They are nearly hardy, and they are generally so successfully wintered in a cold frame.—B. G. R.

I have known Gazania stand out all the winter in the West of England on a dry and sheltered border; but for the last two winters they have been killed past recovery. You had better take up some of the old plants and keep them in the greenhouse during the winter.—J. COLLINGS AT

* In cold or northern districts the operations referred to under "Garden Work" may be done from 10 days to a fortnight later than is here indicated, with equally good results.

OUTDOOR PLANTS.

MICHAELMAS DAISIES.

This year the Perennial Asters, or Michaelmas Daisies, as we like to call them, are flowering much earlier than usual, and already (September 5th) several of the more important of the earlier blooming section are in beauty. One of the best of all is unquestionably *A. acris*, which is very dwarf, quite a compact little bush, smothered with soft purple-lilac flowers. This kind is not expensive now, and it is as well adapted for the small garden or the large park, where a bed of it has a delightful aspect in the cool autumn time. It is so profuse that scarcely a leaf is to be seen when the flowers are in full perfection. Then another splendid kind is *A. amellus*, especially the variety named *bessaralices*, which, however, signifies the type. There is no practical difference between them, although it is wise when sowing for *A. amellus* to add also the word *bessaralices*, as under this name it is usually sold. This is a distinct form from *A. acris*. It is very free, strong in growth, and the flowers are large, five times the size almost of those of *A. acris*, very charming when cut, and of rich colour, deep purple-lilac, set off with orange-coloured centre. *A. alpinus* is also

is a long list of varieties, but my greatest favourite is *Apollo*, which attains a height of about 5 feet. It has broad deep-green leaves and rich-lilac flowers, measuring individually about 1½ inches across. Some little trouble probably will be experienced in getting it, although the species is common enough, but the varieties are scarce. *A. Novi Belgii* has also given rise to a host of kinds. It is a superb type, and many of the varieties are of extreme beauty. They are worth striving to get, and I wish they were more common. The following are the finest: *Archer*, *Hind*, which is bushy in growth, with broad leaves and rose-lilac flowers, about 1½ inches across. A splendid variety is *Harpur-Crewe*, which grows between 4 feet and 5 feet high, the flowers large and white, but tinged with rose before they have lost their beauty. The finest of this section to me is *Robert Parker*. It is rather tall, quite 5½ feet in height, but one may cut down the shoots in early summer to dwarf the habit; but this is objectionable. Let every plant show its characteristic features, and this kind is spoiled when interfered with. The growth is very even, the leaves narrow, and the flowers, which are 1½ inches across, are of a lilac-purple colour. I saw a few years ago a complete collection of Michaelmas Daisies, and this variety was the

up from the border very well. It evidently loves a moist soil, but will grow fairly well in ordinary garden mould. It is not so free a bloomer as could be wished—at least, in this latitude I have never had more than a few flowers fully developed on each stem; but whether that is owing to deficient moisture or heat, or both, is uncertain, but probably of warmth. It must be propagated by seeds or cuttings. It does not divide, so far as my experience has gone. The *Romeya* is certainly a true perennial, but I do not think it can be successfully treated as a perfectly hardy perennial. But perhaps you are situated in "favoured localities in the south."—C. T.

3782.—**Lawn tennis-ground.**—You may give a light top-dressing of old decayed manure or leaf-mould, with a little lime now, but the best plan is such a case would be, I think, to pare off all the turf, dig over and manure the soil beneath, level it, then put down 2 inches of fine coal-ashes, and, finally, relay the turf. Roll it well, and there will soon be a nice sward and springy sward again. This may be done now or in the early spring.—B. C. R.

4742.—**Destroying weeds.**—The simplest weed-killer is common salt, and if the walks are dressed during a dry time the spring the weeds will give no further trouble that season. It is of very little use applying weed-killers now. The rains will wash the strength away before it has any time to do good, and the chances are the edgings or hedges grow ever the walks will suffer more than the weeds.—E. H.

— The best way of all is to hand-weed the walk, and in wet or moist weather the work is not difficult. This is better than applying mixtures that if your poultry are allowed a free run might result in mischief to them. Salt is a good remedy, but take care not to let it go near to the edge of the Grass.—C. T.

— By far the most innocent liquid to use for a weed-killer on paths is boiling water. When I had paths in which weeds could grow, I found it very effective, but my paths are all of cement concrete, which has the double advantage of being weed-proof and killing most of the slugs which try to cross from one bed to another.—A. G. BUTLER.

4739.—**Liming a garden.**—To secure the full benefit of an application of lime to the soil it should only be applied in fine weather and when the soil is fairly dry. If it is laid on when the ground is wet and it is moved about, the lime forms a paste and redressed comparatively useless. From 2 tons to 3 tons per acre is a suitable quantity for a heavy soil, and half that quantity for a lighter medium. The ground should be well dug up first, and then the lime spread on and forked in when the surface is quite dry. Lime is especially beneficial to old gardens, as it renders all organic matter more soluble.—J. C. C.

— The character of the soil in a garden ought to be taken into consideration in applying lime. That which is heavy in texture will require nearly double the quantity that sandy land will. For soil of a heavy, retentive nature 2 tons of lime to the acre is a good dressing, and for light land three parts of that quantity will be sufficient. The best manner of applying lime to any soil is the following: Directly a plot is relieved of the crop trench it over 2 feet deep, laying the soil up as rough as is possible for the winter frosts to pulverise it thoroughly. If the weather is dry in February, spread on the lime fresh from the kiln, that which has not been previously slaked should only be used; exposure to the air for a day or two will make any pieces crumble. If it is slaked by rain much of its strength is lost. Spread it evenly over the land, forking it in at once, but not too deep, as it is sure to work its way deeper in the soil. Lime ought not to be hurried more than 6 inches under the surface. If it is nicely crumbled when used it will mix freely with the soil as the digging proceeds.—S. P.

4760.—**A draughty corner.**—Fruit and vegetables would certainly not succeed in such a position, but you might have evergreen shrubs, Laurels, Cotoneasters, Berberis, Rhododendrons in peaty or good loamy soil, and anything you note does well in the district. It is not at all easy to advise you in such a garden, as many things that would thrive in other places would die in such a cold spot in Manchester. You might grow such shade-loving things as Solomon's Seal, Lily of the Valley, hardy Ferns, which may be all planted now, but even these will not be quite happy if the place is absolutely winless and cold.—C. T.



Flowers of a Michaelmas Daisy (*Aster amellus*).

early-flowering and called the Blue Mountain Daisy, which is dwarf, not one foot in height, and has lilac-coloured flowers quite 2 inches across, whilst those of the white variety are white. The two former, *A. acris* and *A. amellus*, are of greater usefulness, and in the garden at this season have a bright aspect, a foil to the early Chrysanthemums, White Anemones, and various kinds of perennial Sunflowers that make beds and borders beautiful at this season of the year. Beginners will select, then, *A. acris* and *A. amellus*, but for the information of those who have already got them, wishing also to add to them, I may mention that of *A. acris* there is a very dwarf variety indeed, rising a few inches above the soil, and more adapted for the rockery than any other position; it is called *nana*. Of *A. alpinus*, beside the white kind, is *roseus*, and of *A. amellus*, the dark lilac-purple variety, *amelloides*, which is about 2 feet in height, the flowers measuring 2½ inches across. Other useful early-flowering kinds that may be mentioned are the following: A beautiful variety is *A. linearifolius*, which reminds one of *A. acris*, but it is taller, and the flowers have a half-pendent character that rather enhances their beauty than otherwise. The soft purplish colour is very pleasing. *A. stricoides* var. *Glo* grows about 2½ feet in height, is bushy in growth, and produces a profusion of pale-pink flowers. *A. Lewisii* is one of the most beautiful of all the Michaelmas Daisies. There

most conspicuous and lasted in perfection several weeks. *A. Shortii*, the graceful lavender-coloured, *A. tumellus*, and *A. Nova-Angliae* deserve mention. The varieties of the last mentioned are not so numerous as in the case of *A. Novi-Belgii*, comprising flowers of various shades of rose and purple. There are many more perennial Asters, but one might stock the garden with nothing else, as it is a remarkably numerous family, will thrive in good garden soil, and if the garden is beautified with beds of Rhododendrons, plant perennial Asters amongst them. Over the shrubs they throw their graceful flower-laden shoots, and fill the garden with soft colouring in the cool, grey autumn.

C. T.

4723.—**Romeya Coulteri**—The time to plant this is in the spring, as it is not very hardy, and in hardy winters gets killed. I wish you had stated where you resided, as then one could have given better advice. The flowers are pure-white, but they appear late, and are often cut off by frost. Such a summer as the present has suited it well. In the "English Flower Garden" occurs a valuable note upon it by Mr. Thompson, of Ipswich, which may be of use to you. He says: "My experience of it leads to the conclusion that, except in favoured localities in the south, it is but half-hardy in England. It may, however, be easily wintered in a frame, and it pots

ORNAMENTAL GRASSES.

ORNAMENTAL GRASSES, both perennial and annual kinds, are worthy of more prominence in the garden, and probably others besides "G. J. H. D." would like to know which are the really good sorts. During late summer and autumn the noble Pampas Grass is assuredly one of the finest things for any garden; but even this is rarely seen otherwise than as an isolated tuft. All the nobler perennial kinds are admirably adapted for garden planting in a bold way, so that they may create an effect in the garden landscape, whilst others of dwarfier habit, together with those of annual duration only, should not be neglected. They make admirable feils to masses of bright colour, apart from their own exceeding grace and beauty.

THE PAMPAS GRASS (*Gynerium argenteum*) is without doubt the queen of garden Grasses, and all who can should find a place for it. It will grow in almost any soil, but in that which is rich, deep, and inclined to be moist, it attains its fullest grace and stature, sometimes sending up its plumes 12 feet high. It varies in height according to soil and aspect, but whether dwarf or tall is always stately and handsome. There are many forms of it, both good and bad. The finest are those that have a silky-white appearance as these when dried expand, and are so durable that I have known them to be kept several years—washed when dirty and dried again—looking fresh and new. It may not be generally known to the readers of GARDENING how the plumes—such as one seen for sale in shops—are made to appear so white and fluffy. Anyone can do it who has a good form. The plume, after being cut, must be gently shaken in front of a fire till thoroughly dried. There are several forms of the Pampas that have distinctive names, as for example Bertini, which is said to be the finest of all, and carmineum, which has rosy-tinted plumes. *G. jubatum* is a distinct species with silvery plumes, but of a much dwarfier habit. Although quite hardy, shelter from wind is desirable for the Pampas Grass, as its plumes are injured and broken down by strong winds, which are often prevalent at the time they are at their best.

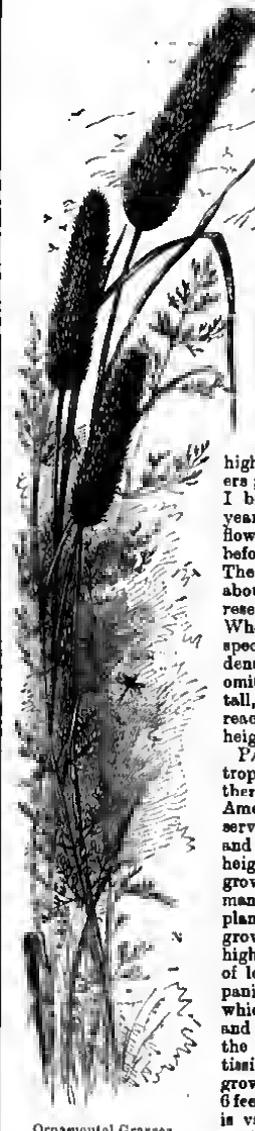
EULALIA JAPONICA is a Japanese Grass, and one of the very hardiest kinds in cultivation. If killed to the ground the crowns live, and in some parts of America where the Pampas Grass cannot stand the winter this species lives and endures through temperatures of 30 degs. below zero. Its flowers are in feathery panicles, and are of a brownish colour, but in England it rarely flowers well out-of-doors. Still, it is ornamental in the highest degree, for it sends up shoots 8 feet in height, clothed with long, graceful leaves. There are two very distinct variegated forms of it that can be recommended—one *japonica variegata*, having longitudinal white stripes down the leaf, and the other form, named *zebrina*, has transverse markings of a straw-yellow colour.

THE NEW ZEALAND REED (*Arundo donax*) should be found in every garden, being second to the Pampas in showy grace and beauty and even exceeding it in height, for in some favoured southern garden I have seen it send up its plumes to a height of 14 feet. They appear, too, much earlier than those of the Pampas Grass, often in July. Its stalks are more slender, and when well grown it is very stately and graceful. A deep, fairly moist soil is necessary to bring it to its best proportions. The Giant Reed of our marshes (*Arenaria phragmites*) is the noblest British Grass, and should be grown in districts where not naturally wild. It must be near water, however, and cannot be grouped or isolated on sunny lawns like all the other preceding kinds.

SACCHARUM AEGYPTIACUM is a striking and very uncommon Grass. It is a native of Africa, and requires a deep, warm soil. It does not flower in this country—at least, not outside—but it has tall, slender, Reed-like stems, clothed in graceful leafage, and attaining from 8 feet to 10 feet in height.

ELYMUS ARENARIUS, otherwise known as the Sea Lyme Grass, is a British plant, found abundantly on some of our sandy shores. Although not wild inland, it is very bumpy in any garden, and apparently does not mind whether it is planted in clay or sand. It is entirely of a rich, glaucous green, very beautiful

in colour, and rampant in growth. It spreads freely, and should therefore not be planted in beds or borders of choice things. I once had a bank of loose, light soil that was always giving way and rolling down on the path. It was



Ornamental Grasses.

APERA ARUNDINACEA is a slender-growing but most elegant Grass, quite one of the choicest. It is sometimes called the Pheasant-tail Grass, owing to the length and gracefulness of its plumes, which are of a brownish tint distinct and showy. It has hash-like leaves. Beautiful as it is in the garden, there are few more useful Grasses for cutting, its plumes lasting for a very long time. Last, but far from least, comes the

FEATHER GRASS (*Stipe pennata*). It is a perennial worth growing in association with flowering plants, close and tufted in habit, barely exceeding 1 foot in height, but constant and profuse in bloom; the flower-spikes long, narrow, foother-like, and most graceful. There are other perennial kinds, such as Sorghum, the Adreopogon, &c., but these mostly want light, warm soil. The selection of perennials here given comprises the best. The annual kinds are very numerous, and some of them are delightful things for cutting, whilst all are of easy growth, if sown in rich, friable soil out-of-doors. One rarely sees them associated with flowers in the flower garden, but they may be used prettily in this way, whilst for cutting they are very valuable. In summer the lovely panicles arrange well with flowers, and in winter, along with Everlastings, they are most useful for permanently

filling vases when flowers are scarce. With these Grasses in the garden, Maiden-hair and other Ferns are not quite so essential. It is too much the rule to think there is nothing like Ferns for arranging with flowers. As there are noorly fifty kinds alone among annual Grasses, it is necessary to make a selection for so many are not generally wanted.

AGROSTIS NEBULOSA is a charming Grass, light as the air, and elegant beyond description. Words cannot describe its effect when in flower, and nothing could be nicer for cutting or drying. *A. pulchella*, of dwarfier habit, is also desirable. *Briza maxima* and *B. gracilis* are two distinct kinds, resembling our native Quaking Grass, but one larger, and the other smaller, both free and of easy growth. *Bromus briziformis* is by far the best in the large genus to which it belongs. It is tall and graceful, with large branched, drooping panicles, and is first-rate for drying. It should be treated as a biennial, by far the best results coming from autumn sowing. If treated as an annual it should be raised early in pots, and planted out as soon as ready. *Eragrostis* or Love Grass is soft and graceful. There are several species, but elegans and aegyptiaca are the most distinct, especially the last named, which has silvery-white plumes. *Hordeum jubatum* and *Lagurus ovatus* are entirely of different character, having close heads. The first is known as the Squirrel-tail and the last as the Horse-tail Grass. Both are pretty and desirable.

LEPTOCHLOA GRACILIS is a free, easy-growing kind, profuse blooming, with a slender branched dark-brown panicle. *Pennisetum longistylum* is very attractive, the flowers having long hair-like styles projecting from a twisted downy head of a dark-purplish colour. It is easily grown as an annual, but is quite a perennial on some soils. It grows about 18 inches high.

PIPTATHERUM THOMASI is a tall, graceful Grass that I noted last season in Mr. Barr's nursery at Long Ditton. It has enormous long panicles of bloom, the branches being in whorls of eight or nine, and separate from each other, making the panicle long, open, and strikingly pretty. *Tricholena rosea* is also very pretty, tall and slender, its panicles, as implied by the name, being tinted with rose. These are the best annual kinds that have come under my notice. It would be easy to add to the list, but the most useful and most distinct are named above. A. H.

4735.—Cornflowers.—Autumn sowing produces the strongest plants, but the plants in spring will flower the same time as the Roses. It is too late to sow now anyway.—E. H.

—It is rather late to sow now, but if the early part of the winter proves mild, seedlings started now would probably survive, and each would flower both earlier and better than others not sown until the spring, especially if the soil is very light and warm. I should certainly choose a moderate sowing now, and get some more seed in in February or March.—E. C. R.

4725.—Braeken on pasture-land.—This may be got rid of by constantly cutting it down. It will take time, doubtless, so will any other method. No plant can live long, which is not permitted to make top growth.—E. H.

—If you persevere in cutting the tender tops off directly they appear above ground, in the course of a year or two the roots will die away, and give no more trouble. This is the only way, for to dig out the roots would be an endless job.—E. C. R.

4767.—Dwarf blue-flowering plants. —I can quite sympathise with you in regard to Lobelia. It is very pretty when you are close to it, but makes no show at a comparatively short distance. *Violas Freedom* or *Blue Bell* would have a far more striking effect. Most flowering plants, such as *Campanulas*, bloom only for a limited time, otherwise they might answer your purpose. Next to the *Viola* the most effective and continuous blue-flowering plant I know is *Convolvulus minor*, but it becomes straggling and untidy towards the end of the summer. If purple would satisfy you I should recommend *Verbena peggadown*; nothing could be neater or prettier.—A. G. BUTLER.

—One of the very best plants for the purpose would be the *Bine Daley* (*Agathoa cuculotia*). It is of dwarf compact habit, most profuse, and constant in bloom, and decidedly a pretty thing. It could be purchased cheaply next season about the usual time, and afterwards stock can easily be kept by taking cuttings, which root easily in September in a cold frame kept close, and the plants will winter well in any frost-proof structure.—A. H.

CHRYSANTHEMUMS.

**SEASONABLE NOTES ON CHRYSAN-
THEMUMS.**

THE continuous damp weather of the last week will tend to crasto the early decay of the first-opened blooms if they are at all neglected in the matter of supplying them with air in sufficient quantity, accompanied with a slight warmth in the hot-water pipes to cause a buoyancy in the air. It generally happens that the amateur's greenhouse or vinery is stuffed full of plants along with the Chrysanthemums that he cannot dispense with. These require water as well as the Chrysanthemums, the whole tending to make the inside of the house heavy and moisture-laden, if all favourable opportunities are not seized to throw open the ventilators wide during the day, when the sun shines brightly, and there is not much wind blowing. I am not, however, in favour of admitting direct draughts of cold air to reach the plants when the flowers are developing, especially should the wind be blowing from the east. When the wind is in the south or the west the air is generally warm at this season; fire-heat is not at all necessary then during the day, provided the buoyancy is kept up by the aid of the sun. It is, however, wise to have the assistance of warmth in the hot-water pipes during the day in dull weather. The air is very often laden with moisture, so that a little artificial warmth dissipates condensed moisture, to the benefit of not only the opening Chrysanthemum blooms, but to all other occupants of the greenhouse or vinery. Any watering required ought to be done in the morning so that the floors and paths are quite dry before nightfall. The constant removal of dead and decaying leaves helps to maintain the air in a sweetened condition. After a few days of continued dull weather the blooms are very subject to damping or rotting upon the first burst of sunshine. The latter, perhaps, is the correct name to apply to blooms that are spoilt in one day, as is very often the case when the plants receive no shade whatever after a few days of dulness in the weather. Some tiffany stretched over the glass outside will generally provide sufficient shade and prevent the blooms being injured through that cause. When the blooms are three parts expanded feeding may cease; it is useless to expect that the continuance of stimulants will benefit the plants after that stage. When the blooms are fully developed they will keep fresh longer if the soil is kept rather on the dry side than otherwise. During dull weather, if the soil is constantly wet, the plants do not absorb it in the same ratio as when growth was at its height, or even when the blooms were expanding. Consequently the sluggish roots create what is known as "spot" in the petals. At first it is represented by a tiny dust-like speck on the surface, but it gradually increases until it is nearly the size of a small pin's-head, and, of course, disfigures the blooms beyond recovery. When blooms are attacked in this manner it is not simply one or two petals, but the whole bloom is similarly affected, so much so as to render it quite useless. Greater attention to the state of the roots and the maintenance of a buoyant atmosphere will do much to prevent the spread of this malady.

E. M.

474d.—A white Chrysanthemum—This is evidently a white "sport" from the typical variety, and if it proves to be constant or "fixed," it will be a most valuable novelty. You may either raise a stock of it yourself first (taking the cuttings only from the shoot or shoots bearing the white flowers) or else dispose of the plant as it stands. I have no doubt you will easily obtain a good price for it either way from any of the large and well-known Chrysanthemum growers.—B. C. R.

—There is a white sport of Viviani Morel—at least, so called, but I really doubt it. You may get the flowers of Viviani Morel white on the early crown-bud, the flowers coming quite pure. I was interested recently in seeing a very fine collection of this Chrysanthemum in full bloom, and the diversity of colouring was most conspicuous. The true colour is a deep-lilac and flowers of this tone are produced on late buds, but those on the early crown-buds were

absolutely colourless. The question you ask has given rise to much discussion. Some aver that there is a white sport, some not, so one is a little perplexed to know who is correct.—C. T.

—No Chrysanthemum that I know is so variable in the colour of its blooms as Viviani Morel, caused simply by the different stages and times that the buds were formed. Those taken in July invariably produce white flowers, the next pale-pink, and those that are taken from the middle to the end of August give the colour that is the most pleasing, and which renders this variety so valuable as an exhibition flower. So numerous are white blooms from this Chrysanthemum this year that it will be necessary to further test the plants another season before finally deciding the matter. If cuttings taken next December from the plant that produced the white blooms this season, grown on the large-bloom system and as bushes also, give white flowers, then you may reckon upon having produced a real White Viviani Morel. A second season is necessary in all cases to test any supposed new variety the result of a sport before being certain that it is distinct.—E. M.

LATE CHRYSANTHEMUMS.

THESE very useful plants are now filling up their flower-buds, and require a liberal supply of liquid-manure to enable them to develop a full crop of blossoms. Unlike the exhibition varieties, there is no need to produce monster flowers, but rather to obtain a good supply of those of fair medium size, and to do this large bushy plants are required to produce one good bloom at the end of each side branch, so that only moderate disbudding is needed, and some kinds do not require this done at all. The season has thus far been favourable to their development, where artificial watering has been carefully attended to. I grow a good many plants in large pots, and they are now covered with large plump buds, and in addition I grow a large quantity planted out. They are struck from cuttings in March, and planted out in rows on good soil, like Cabbages, about 2 feet apart, and pinched back once in May and then allowed to grow unchecked, each plant being loosely tied to a stake as they progress to growth. About



A Golden Maiden-hair Fern (*Adiantum sulphureum*).

the end of October they are lifted with good balls of earth and transferred to the floor of a vinery when the fruit has been cut, planting them in the soil, and giving copious supplies of water until the blooms begin to expand, when they are kept as dry as possible, with plenty of air, and by this means I get as good a supply of Chrysanthemums at Christmas and New Year as in any part of November, and they are in much greater demand.

J. GROOM, Gosport.

Plants for next year's bloom-
ing. You have left it too late to sow seed of plants mentioned now. This should have been

done in April, May, or at the latest in June, in order to obtain strong plants that will bloom well next summer. They should be fit to plant out now, and if a display next year is an object the best course will be to purchase plants. Raising the plants is a simple matter enough. The best way—at least, in the case of all those with fine seeds—is to sow in shallow boxes in a cold frame, pricking the seedlings off into well prepared nursery beds when strong enough, and finally planting them out permanently in October. Pentstemon seed may be sown in heat in February, and with liberal culture most of the plants will flower towards the autumn.—B. C. R.

FERNS.

GOLDEN MAIDEN-HAIR FERNS.

THIS popular genus of Ferns includes a few species which are ornamented with a farinose powder similar to that family of Ferns so well known as Gold and Silver Ferns (*Gymnogramma*). The two kinds named here are exceedingly beautiful, but very distinct, and are well deserving the attention of everyone possessed of a fernery or Wardian-case. There is nothing exceptional in the treatment of these two species; those who have the common Maiden-hair Fern (*A. cuneatum*) doing well may hope to be equally fortunate with these.

A. sulphureum.—This is a charming small-growing epiphyte, which was originally introduced from Chili by the Macrae Backbones, of York. It is usually considered a difficult plant to manage, but this arises, I imagine, from its being kept too warm; our illustration was taken from a plant which grew in the open air during the summer, but the plant suddenly disappeared, so that the opportunity of testing its hardiness was lost. The fronds vary in length from 4 inches to 1 foot, they are three times divided (tripinnate); the pinnules when infertile are roundish, but when fertile they are obovate, uniform, furnished with copious sori, and clothed on the underside with a dense, shining golden-yellow, farinose powder.

A. WILLIAMSII is a more robust-growing plant than the preceding; it has been introduced from the mountains of Peru by Mr. Williams, of Upper Holloway. It is said to have been found growing at an elevation of some 12,000 feet; consequently it thrives admirably in a cool fernery; indeed, the golden farina with which the atoms and underside of the fronds are powdered appears to remain longer upon the plant under cool treatment than when grown in stronger heat. It appears to be as free in growth as *A. cuneatum*; the fronds are from 12 inches to 18 inches long, light and graceful, and admirably adapted for cutting. G.

**THE HOLLY FERN (POLYSTICHUM
LONCHITIS)**

"J. KINNARD" sends some fronds of this species which he has collected in Switzerland, asking its name, and saying that he has never seen it in England? The vernacular name as well as the scientific one is here given, and I am glad to inform my friend that it is a British plant, and that it is found in many parts of Britain—for instance, near Ingleborough in Yorkshire. It is also found in the North-west of Ireland in several localities, also on the mountains in the Highlands of Scotland, and on the mountains in North Wales, so that it may claim to be a genuine British Fern. It is found more plentifully in various parts of Europe, and my friend "J. K." says he had found it to grow plentifully in the mountains of Switzerland, and my friend will find this is only to be found at considerable elevations, and I do think it is a plant that will not thrive well except when the soil is well intermixed with limestone, and when planted in this I have only been able to keep it grown in a pot, and under cover in a cool-house. I have never had this Fern grow well in the open ferneries for more than two years. Some friends, however, assured me that they had the same plant for a great many years growing upon their fernery, but upon my calling to see them one day and asking to see the Holly Fern, I was coolly shown a plant of *P. aculeatum*, which I was told had been developed from a plant of *P. Lonchitis*; but as I was quite aware of how this development comes about, I had to

undecieve my friends, and I at last succeeded in doing so. The fact is, that in the young state the species *P. conlactum* assumes somewhat the guise of *P. Lonchitis*, and may be mistaken for it, and I would like to caution my readers against purchasing plants of the so-called Holly Fern from any of the plant-bawkers in the neighbourhood of London, at any rate. The right plant is a beautiful evergreen species, making fronds from 5 inches to 20 inches high. These are but once divided (simply pinnate), the pinnae undivided, epiny at the edges, and deep-green on the upper side, paler beneath; the rachis is densely scaly. It is not a species that appears to vary much, but there are two or three named and tolerably well-developed varieties known, such as *P. Lonchitis* var. *oristatum*, *P. Lonchitis multifidum*, *P. Lonchitis proliferum*, and some others. J. J.

4755.—**Scale on Ferns.**—The best way to get rid of this pest is to sponge the affected parts rather heavily with warm water in which some soft-soap and a very little paraffin has been dissolved, and afterwards with pure water. If you "dry off" seedling *Begonias* just up you will never see them again. Keep them growing on quietly in a warm-house or pit near the glass until as late as possible, when each will have formed a tiny bulblet. These must be kept moderately warm, and neither wet nor dry through the winter, be started in growth early in heat, and when in growth be first pricked off and then potted singly.—B. C. R.

Young Ferns are wonderfully cheap now, and wherever the plants are infested with scale gather them together carefully, and burn them. This is the most economical course to take. Afterwards clean the house with soap and water, and get a fresh stock of young plants. The *Begonias* will have scarcely formed tubers yet, and therefore must be kept moving slowly all the winter, as there is nothing to dry off.—E. H.

ORCHIDS

MILTONIA VEXILLARIA RUBELLA.

This is a variety of the species and is remarkable for its great variability in colour and in size; and in the flower sent by "T. II.," I see the bloom much reduced in average size. The colour is rich and bright, and this form was, I think, first introduced to notice in English gardens by Mr. Wm. Bull, of Chelsea, but I do not remember at what date. However, it is just twenty years ago that the first specimen of the typical plant flowered in the nurseries of the Messrs. Veitch and Sons, of Chelsea. It is an Orchid which appears to have a somewhat wide distribution in New Grenada and on the mountains in Ecuador, but not occurring at such an elevation as do *Odontoglossum Penicillatum*, or the Princess of Wales' Orchid, named by Bateman O. Alexandre, but which more recent authorities have generally agreed is the same plant to which Lindley had previously given the name of *O. crispum*, and, consequently, it does not thrive in so low a temperature as does that popular species; but of the precise locality whence this variety was originally collected no records are kept or known, saving by the actual collectors; but still I do think that the variety *rubella* must grow at a greater elevation than the usual run of the plants, which are said not to occur at a greater altitude than about 6,500 feet, and not lower than about 4,000 feet above the sea. It is an Orchid that varies much in size and in the depth of its colour, but all are beautiful. But I think the variety here spoken of is about the smallest form that I have seen; but they are of a good deep rosy-pink colour. This colour, however, becomes much paler towards the edges. Since I received these flowers I have had a run out and visited two or three collections of Orchids; in one of these I saw one or two examples of the variety called *apertha*, which has a large triangular blotch upon the lip of deep blood colour, just coming into bloom for the second time this season, and this, I used to think, was amongst the smallest-flowered kinds; but now I must alter my opinion. In speaking of the variability of the colour some time ago with Mr. Dearden, of St. Albans, who saying that his were very rich in colour and large in size, be remarked, "Yes; these plants

come from a new locality, which appears to yield much finer and richer-coloured varieties than the old and better-known spots where it has hitherto been collected." But he did not say if the plants came from Columbia or from Ecuador. I do not like this plant to be in a lower temperature than 60 degs. during the day, but this may fall to 55 degs. during the night or in the morning, and the thermometer may rise to nearly 80 degs. in the summer-time with sun-heat, without causing any ill effects; but during this time the plants themselves will require a great deal of water to their roots, as well as a very liberal amount of moisture in the atmosphere, and a due amount of ventilation, for it should be borne in mind that if this is not well attended to the plants will become infested with black-thrips, which is their very worst pest; so let the pots be well drained, and the plants be potted in a mixture of good brown fibrous peat and chopped Sphagnum Moss. This should be pressed down firmly, and be surfaced with some of the most lively pieces, so that it will grow and make a nice pleasant appearance, and this makes a nice soft and cool bed for the roots of the plants, and at all seasons of the year the air should be kept moist, for in what is called the dry season in their native country rain enough falls to maintain a constant humidity in the atmosphere. MATT. BRAMBLE.

TREATMENT OF ODONTOGLOSSUMS.

"ARTHUR EASTON" asks how he is to manage some half-dozen species which he names, and which he says are kept at from 45 degs. to 50 degs. in the night-time from about the beginning of December till the end of February? This is quite hot enough for them at this time, and although I do not advise you to keep them dry at such times by any means, less water must be given them, because they do not require any resting season, and the *Odontoglossum macranthum* may be treated in an exactly similar condition, and all these plants like a shady situation; but the *Coelogyne cristata* does like more sun, and a little more heat during the growing season, and after its tubers are made up. As regards the ventilation of your houses, these should be fitted up so as always to have some air running through the place; but less should be left on in very cold weather. If expense is no object, however, you may keep a good round amount on the house or houses nearly at all times, simply making up any deficiency in the temperature by extra fire-heat. This system, however, is fraught with more bad results in the cool-house than with other houses in the matter of watering. Although I frequently make use of the expression plenty of water, I do not mean that the plants are to be treated as aquatics, but the soil is always to be kept nicely moist, and without a shade of dryness. I hope you will succeed. MATT. BRAMBLE.

ONCIDIUM INCURVUM.

This is the name of the spray of flowers sent by "James Mookings." This plant sometimes goes by the name of *O. albo-violaceum*, but the name given above is the correct one. It bloomed in Birmingham for the first time some fifty-three years ago. It is quite of an unusual colour amongst *Oncidiums*, for in this family yellow of some shade is the prevalent colour. The plant has flowers each about an inch across; the sepals and petals are white or pink, spotted and tipped with white; the lip is white; the crest in some varieties is clear yellow, but in the one before me it is of a pale lemon colour. This is the typical form of the plant, but some few years since we were all astonished and surprised to find a pure white-flowered kind crop up. The first time I saw the plant was some few years ago when travelling in France. It is about the normal size, having pure white flowers and a yellow crest, which saved the plant from being passed over without notice, for I have a great dislike to a pure-white Orchid flower without the least bit of colour to relieve it; but, thank goodness, there are very few that are wanting in this respect. As to the management of this plant, it is a native of Mexico, at some 4,000 feet or 5,000 feet elevation, and therefore it requires cool treatment; indeed, it will thrive in the warmest end of the *Odontoglossum*-house at the season; but I like to keep it some 5 degs.

warmer than this during the winter months. The plant succeeds best potted in good brown peat-fibre, mixed with Sphagnum Moss, and a few pieces of sandstone in the soil is no hindrance to the plant's well-being, as it keeps the soil more open and drains the soil, which this plant likes, for although it requires plenty of water and a cool, moist atmosphere, all stagnant and sour water or soil should be carefully excluded from about it. MATT. BRAMBLE.

LENTEN ROSES (HELLEBORES).

MANY only grow the varieties of the true Christmas Rose, forgetting or not knowing that there is quite as beautiful a race that blooms in the spring months onwards towards summer. These are commonly known as Eastern Hellebores, or Lenton Roses, and from their wealth of foliage and charmingly coloured flowers give interest to the garden. Few seem to think of the foliage of the Hellebores, which is bold and luxuriant in such species as the native *H. fetidus*. A fine effect is made in winter or early spring by large clumps of common *H. fetidus*, the leafage very leathery, much divided, and of a profound green colour, in rich contrast to the greenish-yellow flowers. It grows well in ordinary garden soil, and is best planted in groups in the border, or higher parts of the ruckery, or in front of shrubberies, where it is in keeping with the surroundings.

THE EASTERN HELLEBORE (*H. orientale*), a native of Greece and Syria, is a very beautiful species with fine foliage and whitish flowers that are produced on slightly bent stems, very graceful in effect. But much has been done by hybridising it with the forms of the Christmas Rose and other types, so that we get a delightful series of varieties, the flowers bold and variously coloured, some quite white and very pleasing against the green foliage. Some of these forms are named and catalogued as *H. orientale strabus*, and *H. o. lividescens*. Good ones should also be made in groups of *H. olympicus*, so named from its native home, Mount Olympus, in Greece; the flowers of a whitish colour, but varying in shade. Very beautifully spotted are the flowers of *H. guttatus*, the inner face of the segments dotted with purple; and from this type many excellent crosses have been made with other kinds, resulting in a delightful series of spotted forms, the colour distributed both in dots and suffused over the flower. Many of them have been given distinctive names, but there is danger in this practice, unless they are amply distinct, as considerable resemblance exists among them. A handsome species is *H. colcholum*, the flowers crimson, but varying in shade, and between this and other types many beautiful hybrids have been raised. The species is of strong, bold growth, the leaves divided, toothed, and of a very deep-green colour, almost purplish in their early stages. A well grown plant is an object of much beauty, broad, very deep in colour, and vigorous, whilst in March or earlier, if the weather is favourable, the flowers appear. *H. abchasicus*, which grows about the Black Sea, is a pleasing species, the flowers very dark purple, especially to the bud, but changing with age to a duller tene. *H. atro-rubens* has also purplish flowers, but some of the hybrids from this and other kinds are the more beautiful. Some of the crosses with *H. guttatus* are unique in colouring, the flowers much spotted, and finely suffused. When referring to

H. fetidus, the best positions for these species and hybrids were indicated—viz., in colonies or groups by the margins of shrubberies, or in the border, and with deep-green leafage as a relief the crimson-flowered kinds are very distinct and handsome. Although good garden soil will suffice, it must be thoroughly well drained, as one of the great evils to contend against is stagnant ground. Some amount of shade is desirable, but often a very poor result occurs through planting in borders near hedges or large shrubs and trees which have sent their roots into the soil and extracted most of the goodness from it. One cannot expect a vigorous growth, a full display of flowers, and broad ample leafage, which is one of their chief glories, under such conditions. By having a well-prepared soil to commence with, well dug up and manured, it will not be necessary to disturb the plants for many years. F. P.

THE KITCHEN GARDEN.

KITCHEN GARDEN NOTES.

THE shortening of the hours of sunlight remind us that preparation must be made for winter before it is actually upon us, and this year there is especial need for making the most of the few weeks that intervene between summer and winter, as the drought was so protracted as to render a good many operations almost impossible while it lasted, but now that copious rains have at length fallen, no time should be lost in pushing on all kinds of ground work. Amongst the most pressing work needing immediate attention, I will direct attention to the work of

CABBAGE PLANTING FOR SPRING.—Presuming that a good supply of plants is available, the soil intended for the beds should be liberally manured and deeply cultivated, then set out in rows 2 feet apart and put the plants in about the same distance apart, pressing them very firmly into the soil, and after a fortnight's interval run the hoe between the rows, and a few days later draw a little soil up to the stems of the plants, so it supports them against wind-waving and keeps the frost from affecting the stems. Cauliflowers of the Autumn Giant kind are now coming fit for use, and should be frequently looked over, breaking the leaves down to protect the white heads from getting discoloured by exposure to sun or wind or the action of frost. Young plants of Early London, and other kinds for first crop next season, should now be pricked out in hand-lights or cold frames, keeping them well ventilated in mild weather so as not to excite growth too much.

CELERY.—Late crops will now need attention in the matter of earthing up, the early crops being now fit for use. As a rule, Celery is not a good crop this year, except where extra care has been given to watering, as being a very moisture-loving crop the dry summer and autumn acted very adversely on its growth.

LETTUCES should now be planted out on a sheltered sloping borders where they can be kept free from stagnant moisture during winter, and a good supply of young plants should be placed in cold frames in case of a severe winter cutting off the open-air stock.

POTATOES should be all lifted by this time, as nothing is gained by leaving even very late sorts in the open ground after the heavy rains have saturated the soil about them. All those that were lifted early will need careful looking over, for if at all thickly together they will be liable to start prematurely into growth, and thereby spoil the quality either for culinary purposes or for seed.

TRENCHING up all vacant soil should be done at this time of year, so as to get it as much exposed to the winter frosts as possible, and also to avoid a **pram** of work in spring. All

FRUIT TREES should be pruned as soon after the fall of the leaf as possible, and those on walls should be nailed to the wall, and espaliers should have the stakes made good and neatly tied. This is the best time to wash the trees with insect destroyers.

WINTER CUCUMBERS.—These will require much attention now, and especial care should be taken not to overcrop at first, so that the plants may have strength to go through the winter well and bring a full crop of fruit when needed. Of course, a well-constructed house is required with ample means of heating. A fine winter crop of Cucumbers is shown in the annexed illustration. Two of the best kinds to grow for winter work are the old true Telegraph and Lookie's Perfection. J. G., *Hants.*

you as much as anything. It is possible that the gas-lime may have lost some of its power before you need it, but you must understand that it cannot be applied in sufficient quantity to destroy such insects as wireworms without injury to the crops. If those who are daily witnesses of the formation of gas-lime, and who ought to know something of its destructive quality, if any, are to be relied upon, it appears that it is of no use whatever to place upon the land, although the vendors of it will not tell purchasers so, as they want to get rid of it. Anyway, I know that a sort of covert smile passes over their countenances when they see the useless stuff leaving the premises.—J. C. C.

MAKING A KITCHEN GARDEN.

IN the formation of a garden of this kind mistakes are often made, and if care is not taken the soil may remain comparatively sterile for two or three years. It appears a very easy matter to form a good kitchen garden out of such a site as a Grass field, all that appears

with those on well-drained ground. It therefore behoves those who may have the formation of a kitchen garden to first see to the drainage. The carrying out of such work need not be referred to in this article, as the formation of the ground decides such work. Drainage, however, must be well done, so that the water can have a free course. The work should commence now, so that the turf can decay before cropping takes place in the spring. Not that general cropping is the best for the first season at any rate. A crop of Potatoes is the best the first year, this getting the soil into good order for the following season's cropping. At any rate, early Potatoes might be planted, and these could be got off in time to allow of the planting of winter vegetables. All these things have to be taken into consideration, as very often people with limited experience are under the impression that the soil can be quickly got into condition for the reception of quite small seeds. Whether manure or other correctives should be added at the time of trenching will, of course, depend upon circumstances. It is plain that anything which would tend to improve the working of the soil, and also its fertility, will have its due effect upon the crops which will follow. If the soil be clay, anything which could be added to ensure its free working will certainly be of great benefit, as very often such soils are often incapable of producing the crops they should account of being too heavy. As we all know, a free use of manure is of great advantage; so also are burned or charred soil, garden refuse, and last, but not least, road scrapings. This last is a special corrective where good material can be had, as besides containing a fair percentage of horse-droppings, it is also composed of a fair percentage of gritty matter, which tends to keep the soil open. How it should be used will, of course, depend upon the quantity at disposal. When there is plenty of any of the materials mentioned, one and all may be worked into the soil as the work proceeds, leaving a fair dressing of the best, such as

DECAYED MANURE AND REFUSE, for forking into the surface in the spring. If by chance there should be very little, and manure in particular, it had much better be reserved for working into the surface in the spring, as to add to the surface fertility for the immediate benefit of the crops which may follow. By commencing the work now the decay of the turf will commence, and the surface be opened up to the winter frosts and snow, so that all will be in readiness for spring cropping. What has to be considered at the present time is the keeping of the most fertile soil at the top and the burying of the turf sufficiently deep to cause decay, but not yet too far from the surface, although deep enough to keep it from growing through. What is known as bastard trenching is the best to adopt, although it will differ slightly on account of the growing turf. In the ordinary course of bastard trenching the top soil in its entirety is kept on the surface, the bottom being forked over, at the same time adding manure. Any attempt at deep trenching, such as the old system of three spits, turning it upside down, would only result in failure, and very likely, as previously hinted, would make the surface soil sterile for some time to come. In commencing the work take out a trench 3 feet wide, as there is nothing like having ample room for working, cramped trenches preventing the work from being carried out expeditiously. The turf should be taken off first to the depth of 2 inches, not more, and, of course, it will be the same with each succeeding trench. Now take out a good spit of the top soil, and take this and also the turf from the first trench to where the work will finish. The bottom soil should now be forked over, adding the correctives and also the top turf of the next trench, and on to this place the next spit of soil, which, from being immediately under the turf, will be in a fertile state. The



OUR READERS' ILLUSTRATIONS: A good crop of Cucumbers. Engraved for GARDENING ILLUSTRATED from a photograph sent by Mr. Isaac Bteley, Mount Pleasant, Hazel Grove, near Stockport.

necessary being to trench it over, placing the top spit at the bottom of the trench and the bottom at the top. Now this is where the mistake is made, for unless the ground should be naturally good to a fair depth, this turning of the soil upside down to the depth of 18 inches or 2 feet may end in failure. What is wanted is a fair depth of fertile soil. Decaylug turf, as all gardeners know, is a storehouse of food for growing crops, although in this respect it is not always a universal blessing, for often it is the home of root-eating insects, particularly wireworm, which is often to be found in new gardens formed from Grass-land. In the first place, it must be seen whether the land requires draining, as it is better that this should be done before the soil is disturbed.

DRAINAGE plays an important part in the well-doing of crops. Land that is ill-drained will never produce satisfactory crops, as besides keeping the soil in a cold state through its water-logged condition, it prevents that aeration so necessary for the well-doing of the different subjects that it will be called upon to produce. It is surprising how backward the crops are on these cold, undrained soils when compared

4775—**Cabbages clubbing.**—There is no known cure for the injury done to your plants by the insects which cause the clubbing of which you complain. The withholding of manure will not help you. Dressing the ground with soot when it is fairly dry is as likely to help

work should be carried on in this way until the whole is finished. By the following spring this top soil will be well broken down, and into this should be lightly forked the manure and burned refuse. If it could be so managed to crop it with Potatoes, it would be all the better for the succeeding crops.

POTATOES CLEAN THE SOIL, and the planting, hoeing, mounding-up, and so forth get the soil

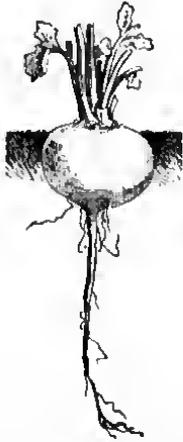


Fig. 1.—Early Turnip "Snowball."

into good working order. If the whole could be turned over again in twelve months' time, there would be a good depth of pulverised soil. If any constituents, such as lime, should be lacking, these could also be added. As regards the preparation of the soil for the orchard, it will depend entirely upon the class of trees it is intended to plant. For instance, if the orchard is to be on Grass and the trees which it is intended to plant are standards, then only stations need be formed at the distance apart decided for the trees. On the other hand, if the orchard is to be mixed and to include small fruits as well, then the whole should be treated as I have advised for the kitchen garden. Stations for standards are generally formed about 6 feet over, and to the depth of 18 inches or 2 feet. The whole of the soil should be taken out, taking care when it is returned that the good soil is kept on the surface, the turf being placed just beneath the roots. The turf as it decays will feed the roots, as if placed too far down and the subsoil should be of an indifferent description, it is apt to attract the roots downwards. If any correctives are needed, they should be added at the filling in. Y.

TURNIPS (EARLY AND LATE).

It is surprising to note in different parts of the country the varieties of Turnips grown and the qualities of them. Yellow-fleshed Turnips are popular in the north, and I have often seen there splendid examples of good culture. I have heard it stated by our leading seedsmen that in private gardens there is but little demand for the yellow-fleshed varieties of Turnips. As is well known, the old Orange Jelly or Golden Ball is one of our best kinds for standing late. I always sow a few rows of Golden Ball and Chirk Castle for winter use, as, should the weather be severe, if not sown before the middle or third week in August, they do not get too large, and a small Turnip is better and resists frosts and gives a lot of greens in the spring months better than a late one. I think one of the best Turnips ever sent out is Veitch's Red Globe. This is not one of the earliest, but it is the best for general crop, as it remains good longer than others of handsome shape, and it is also very hardy. It will also be found useful as a garden variety when required for early work. Those who have a difficulty to get Turnips on account of their running to seed should, at the time of sowing the early kinds—such as Early Milan or Snowball (Fig. 1), an excellent kind for frame culture, as is also the "Jersey Navot," or Forcing Turnip (Fig. 2)—take the precaution to sow a few rows of Red Globe, and there, though a few days later, will often succeed when the earlier ones fail, as it

frequently occurs that the first sowing on some soils is anything but profitable. I have adopted this plan for years. As a late Turnip for storing for winter use it is one of the best, and an excellent keeper if nice sized bulbs are stored. For forcing in frames, the Early Milan is excellent, of quick growth, and good flavour, but as many cannot afford room for these, a late sowing of Red Globe, if stored in soil, sand, or ashes in a cold place, keeps well into the spring. With a small sowing of the late kinds no difficulty will be found in keeping up a supply all the year round. G. WYKES.

LATE TOMATOES.

THIS has been a splendid season for Tomatoes, as they delight in plenty of sunlight and a dry atmosphere, and seldom have we had such fine ripe crops out-of-doors, not only on walls, but right out in the open—in fact, those against walls, unless well supplied with water at the roots, did not, with me, produce such heavy crops as those in the open, from the fact of the soil close up to the base of sunny walls getting too dry even for Tomatoes, unless water was supplied artificially; and not only have Tomatoes produced such fine crops, but they kept so free from disease that they have continued to grow on and produce successive crops that they look as if they would continue bearing up to Christmas, if the dreaded frosts would keep off; but as we cannot expect these late fruits to come to maturity out-of-doors it is advisable to cut off all the fruit that are coloured and place them under glass to finish off their ripening until required for use. This will throw the strength of the plants into the latest fruits, and if they can be left on the plants until they get fully grown, even though they are not coloured, they will be very useful for culinary purposes, if the stalks of the plants are cut with the fruit hanging on them, and after cutting off all the foliage, hang them up in any glass-house to ripen. J. G., Gosport.

4750.—Sweet-scented Carnations.—Countess of Paris is sweetly scented, but I am afraid none of the others mentioned are in any degree. Your question is most interesting, as fragrance is too much left slight of in the Carnations, as in the newer Roses, in many cases, whereas the fragrance should be one of the chief features. A Carnation without scent is worth little. I do not care for such flowers, although they may be beautiful in form and colour. A Rose, for instance, without fragrance is bereft of its sweetest charm.—C. T.

4769.—*Tropaeolum speciosum*, &c.—*Tropaeolum speciosum*, plants or root-cuttings, cool, moist position; *Spiraea astilboidea*, plants, moist, lightly shaded spot; *Harpallium rigidum*, division, sun or shade; *Trollius dahuricus*, division or seed; *Gaillardia*, cuttings or seed, sunny position, and light soil; *Cactus Dahlias*, cuttings, rich soil; *Funkias*, division, ordinary culture; *Romneya*, ditto; *Lobelia fulgens*, division, rich, moist soil; *Perennial Sunflowers*, same as *Harpallium*. Nearly all these are best planted in the spring, about April.—B. C. R.

The *Tropaeolum* mentioned requires a moist, cool soil and position. It will not succeed in hot or dry spots, and the best place for it is against a hedge, through which it sends its shoots laden with vermillion-coloured flowers. It is a quite hardy plant, though little seen in English gardens. I saw it last summer in the position mentioned, where it made a very fine effect, but it may be also planted on the rockery, or in a place where its shoots can fall over, or run through neighbouring things, as shrubs. Plant in the spring, and let the soil be rich, giving water also through the spring months until the roots get established. You had better get roots. Plant the remainder, except *Gaillardia* and *Cactus Dahlias*, any time from now until spring, but the sooner they are in the ground the better. I should not risk the *Romneya* in the open unless you are in the extreme south of England, in a peculiarly favourable climate. The *Dahlias* are, of course, better. They are struck from cuttings in the spring, got from old roots put in heat. *Lobelia fulgens* it is also not well to risk in the open. The plants should be divided in *Gaillardia*, unless in a warm soil, are not hardy.—C. T.

ROSES.

A RIVAL TO MARECHAL NIEL ROSE.

THIS is, however, what the new Rose catalogues say, and although many people may be disposed to doubt such an assertion, I am not prepared to say that the catalogues are wrong, as from what I have seen of this new Rose—the name of which is Climbing Perle des Jardins—growing in large and small pots, I am satisfied that, if it does not prove a rival, it will run the *Marechal* very close for the honour of the first place as a yellow climbing variety for cultivating under glass. The name is, of course, familiar to many readers of GARDENING, as the dwarf form has long been known as one of the best Tea-scented Roses in its line of colour. The variety to which I allude is a counterpart of the other, except in growth, which is of a vigorous climbing habit, so vigorous, in fact, that I have seen plants in 9 inch pots that had made shoots 20 feet long during the past summer. In the matter of growth it is undoubtedly a serious rival to *Marechal Niel*, but as I have seen the flowers under a strong summer sun, I do not think the colour is deep enough to displace our old favourite, but there are many people who will value the new Rose for its continuous flowering quality, as even the strongest of the shoots of the current season produces many blooms. This is what the *Marechal* never does. It will flower from old spurs, but not on the long young shoots. Should it be that the colour of the new rival is deeper when forced into flower in the month of March I hardly know what the effort will be on the future position of our old favourite. It will not surprise me if it has to take a back seat, and that very quickly, as the ankering propensity of the *Marechal* is as disappointing that many hitherto disappointed cultivators will hail with delight a variety that is likely to be free from so serious a defect, and that it is serious my own experience again proves this season, for I put out six plants in the month of March under glass, one of which died, three have just kept alive, the remaining two have made shoots about 4 feet long, and the strongest of these has already got a wart forming on the stem, close to the soil. This so-called wart is only another name for canker, which will be sure to end in the death of the plant, so that if I should allow the newcomer to displace the other I cannot be accused of doing so without a sufficient reason. J. C. C.

Pegged-down Roses.—I am surprised that "A. H." (see GARDENING, Oct. 14th, p. 419) should think I am undecided about the

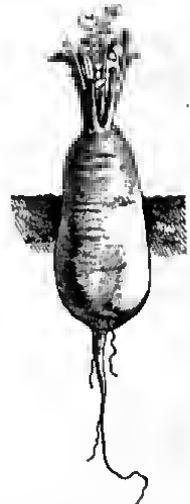


Fig. 2.—Early Turnip "Jersey Navot."

value of pegged-down Roses, as the past volumes of this paper will show that I have advocated this form of Rose growing long before "A. H." had adopted it, and have had nothing but praise to write in its favour. I asked the question of a correspondent as to the behaviour of *Gloire Lyonnaise*, because I had not grown this

particular variety in that way, and, it being a beautiful Rose, I was anxious to know how it behaved. I may mention that I commenced propagating H. P. Roses from cuttings in the year 1868. The next year the plants were set out in beds on Grass, and for twenty years they gave me more pleasure in Rose growing than I have got from any other form. This being so, I can only hope that "A. H." will go on advocating pegged-down Roses, and that he will make many converts, as I am sure they will not be disappointed.—J. C. C.

4776.—Marechal Niel Roses.—It is very desirable that you should thin out at once some of the weakest shoots. Those left would then get better ripened, and produce larger flowers than they will if left as they are unless you so wish it. It seems a pity to allow the Roses to occupy the whole of the roof. In my own practice I cut all the shoots down as soon as the first lot of flowers are over, and then get a crop of Tomatoes in the same house, cutting away the growth of the latter as the young Rose-shoots require the space. Even if you continue on the same lines, you certainly allow too many shoots to remain. You should cut away some of the oldest and weakest and train out these left to 9 inches apart. Mr. Look, an amateur gardener of Staplegrove, near Taunton, grew last year the finest Niel Roses I ever saw. He trained the shoots a long way apart on the back wall end near to the top of his greenhouse, where the growth got all the sun and plenty of air; the blooms were extraordinary, both for their remarkable size and substance. I never saw better evidence of the value of securing well ripened wood of this Rose.—J. C. C.

I can quite understand your reluctance to cut away the wood of two such grand plants as you evidently possess. Still, a great deal of comparatively useless wood may be removed, and there could be no better time than the present. I would remove all of the side growths of indifferent strength first, afterwards cutting away the oldest wood that could be removed without sacrificing more than possible of the ripened growth made during the past summer. You will obtain more blooms from a smaller quantity of good wood than from a lot of medium growth. The strong shoot still growing freely may be left intact. Next spring, after flowering is over, again trim out as much of the wood as possible, thus allowing more space and light for a few strong maiden shoots to develop themselves.—P. U.

4777.—Management of H. P. Roses—There is no great objection to moving your old Rose if you do so at once; but I am afraid the sickly-looking ones will be found not to have many roots. If they have not you had better discard them. About the third week in March cut back all the strong long shoots to within 18 inches of the ground, and the weak ones to half that distance; but for such a border as yours I should suggest that you have all Roses in the back row, and nothing between them. If the heap of stuff to which you allude is free from live roots of weeds, it will do admirably to mix with the old soil, and I should advise you to take out a trench 18 inches deep, and put 6 inches or more of the material in the bottom, and set the Roses on the top of it. Then mix some manure with another portion, and fill up the trench with that and half of the old soil. You want something with an upright growth between the Carnations. Striped Margolds are popular flowers just now. Double or single Zinnias would do very well, but I should prefer the singularly formed and quaint-colored flowers of the Salpiglossia. These will flower quite late in the summer, after the Carnations are over.—J. C. C.

It will not interfere very much with the blooming of your Roses if lifted and transplanted at once. Being on the spot, you can avoid the least delay in placing them into their new quarters, and this is a great point. Of course, it will somewhat reduce the quality and quantity of bloom, and your plants will naturally have somewhat coarse roots after being in one place so long. You are right in allowing them more room, for at present your border must be rather cramped. The decayed weeds and horse-manne you speak of will be quite as good to plant into as anything so difficult to obtain without much expense. The chief thing is to plant early and

without any delay in the operation. What would look best between the Roses and Carnations is purely a matter of personal taste; but I would advise less crowding.—P. U.

4758.—Growing Roses.—"Inquirer" has got a splendid aspect and position for his new venture, and I wish him every success. As a start I would choose the following twelve dark H. P.'s: General Jacqueminet, A. K. Williams, Charles Lefebvre, Countess of Oxford, Earl of Dufferin, Empereur de Maroc, Duke of Connaught, Jean Souper, Victor Hugo, Prince C. de Rohan, Marquis Bernardin, and Prince Arthur. When he asks for light-colored Roses I am tempted to recommend all Teas being planted, except Gabrielle Luizet and Mrs. John Laing among the H. P. Perpetuals, and Viscountess Folkestone, Augustine Guinoissean, Caroline Testet, and Captain Christy from among the Hybrid Teas. The quantity of good, light-colored Teas are so numerous that I must refrain from naming them. Why not write to



Clove-scented Pink.

some grower for a descriptive catalogue? Tea Roses grow remarkably well in Ireland.—P. U.

The best growers amongst the sweet smelling Roses are to be found in those bearing light or rose-colored flowers. You will, however, find the following twelve fairly good: A. K. Williams, E. Y. Teas, Prince Camille de Rohan, Annie Weed, Emily Laxton, Empress of India, Holair, Raoul Guillard, Jean Souper, Madame Hoair Perreire, Souvenir de Charles Montalet, and Paul Verdier. Amongst the light-colored Roses bearing fragrant flowers I regard Madame Gabrielle Luizet as the best; Augustine Guinoissean (or White La France) is also very good; others possessing various degrees of sweetness may be found in Caroline d'Auden, Marchioness of Looze, Duchesse of Albany, Mr. J. Brownlew, Mrs. J. Laing, Marie L. Peznett, La France, Francois Courting, Marie Verdier, and Felix Gray. If you are interested in sweet scented flowers, do not grow the old Cabbage Rose, the Casha varieties and Reine Blanche!—J. C. C.

"Inquirer" should succeed well with Roses in such a position. The best twelve dark-colored Hybrid Perpetuals are Abel Carriere, A. K. Williams, Charles Lefebvre, Countess Pignaneu, Loies Van Hoette, Reynolds Hele, Ulrich Brunner, Xavier Olibo, Horace Vernet, Sultan of Zanzibar, Paul Neyron, General Jacqueminet, Duke of Wellington, and Depey Jamain. Amongst the white or light-colored kinds may be mentioned the following: Augustine Guinoissean, sometimes classed as a Hybrid Tea, but in reality a H. P. The flowers are white, tinted with pink in the centre, very fragrant, are borne profusely. They are borne with great freedom on sturdy plants both in the summer and autumn. It is also called the White La France; Margaret Dickson, one of the new varieties shown by Messrs. Dickson, of Newtownards, at the Crystal Palace, this year, would suit you, and they are light-colored Roses, although a trifle expensive at present. They are very suitable for Ireland, and it would not be a bad plan to write to this firm for advice in the matter, as Roses that succeed here are not always satisfactory across the Channel. Mr. John Laing is a light-colored Rose, and has done well this year. It is good everywhere. Then there are Abel Grand, Alphonse Souper, Beroness Rothschild, Boule de Neige (white), the new Caroline Testout, (rose, very fragrant), Centifolia rosea, La France, Mme. Eugenie Verdier, Mme. Victor Verdier, Marquise de Castellane, and Violetta Bouyer.—C. T.

4731.—Light-colored Tea Roses, &c.—I think the following are twelve of the sweetest-scented Hybrid Perpetuals of the above colour: Abel Grand, Francois Michelon, Heinrich Seheltheis, Jules Margottin, Mme. C. Joigneaux, Marchioness of Lorne, Marguerite de St. Amand, Baronne Prevost, Miss Hassard, Princess Mary of Cambridge, Silver Queen, and Violetta Bouyer. A similar number of Teas may be found in Adam, Devonensis, The Bride, Souvenir de S. A. Prince, Elio Fugier, Goubalt, Edith Gifford, Mme. Cusin, Sappho, Rubens, Sonv. d'un Ami, and Innocente Pirela.—P. U.

PINKS AND CARNATIONS.

THESE plants suffer if left too long in one place without transplanting, for they get long, straggling stems, which suffer greatly in severe weather, while short, stocky plants pass safely through the most trying ordeal. Pink roots so freely when divided and replanted at this time of year, that except for very choice sorts it is the easiest and best plan. The old larger white and pink varieties and the larger-blooming varieties that are now so extensively grown for supplying cut flowers may be increased to any extent by this means, diggling out small trenches and planting them right up to the leaves; every piece will make a plant. Carnations that have been layered will now be rooted sufficiently to be taken off from the old stools, and after the beds are prepared, planting them firmly in lines where they are to flower. Old plants that can be divided will be greatly benefited by digging up and replanting in the same manner as Pinks. I have many times, when dividing and replanting at this time of year, had quantities of shoots broken off without any roots. These have been made into cuttings, and inserted in sandy soil under cloches or hand-glasses, or even in boxes of soil, placing them in cold frames, and a very large percentage of them have rooted by the spring and made good plants; in fact, it is advisable to have a reserve supply of this sort, for in severe winters they seem to suffer less than those that are fully rooted, and in vigorous growth. The illustration represents a good specimen of the favourite Clove-scented Pink.—J. G., Gosport.

The Autumn Crocus.—This is a very beautiful hardy herb, and yet very little grown in gardens, although it is not fastidious. It is more worth growing than many of the Dutch Crocuses that one gets really tired of in the spring months. Crocus speciosus—such is the botanical name of the Autumn Crocus—has deep-purple flowers, a lovely colour, the veins still deeper in shade, and set off by a brilliant orange stigma, which is very rich contrast; when the flowers are fully expanded in the sun they are a brilliant purple. The bulbs increase readily, and thrive in moderately light soil.—C.

FRUIT.

4728.—**Compost for Vines.**—The best compost for Vines is the top 4 inches of an old pasture with a limestone base. If the limestone base is not there add one or two portions in bulk of old plaster. To this should be added some manurial stimulant of which there are plenty of artificials in the market. Thomson's Manure has an established reputation. The Patent Silicate Manure is excellent for Vines and Peaches, and crushed bones or bone-meal are excellent for mixing into Vines borders. I think the simpler the compost the better. Good loam and bones—one part in twenty of bones to loam—with annual applications of stimulating artificial will grow good Grapes. But Grapes are annually falling in price, and the cheaper they can be produced the more profit—however, the time is near when there will be no profit at all on Grape-growing, unless they are produced cheaper.—E. H.

—The best compost for Vines is turf cut from a pasture, the older the better, as it will have all the more fibre, and it is the fibre that renders the turf valuable. Failing this material, the best soil that can be had must be used, mixing with it suitable additions in greater proportions than would be necessary were turf obtained. To every cartload of turf freshly cut, 3 inches thick, and chopped into pieces 4 inches and 6 inches square, add one sixth part of lime-rubbish, wood-ashes, broken bricks, and charcoal, limiting the quantity of the first and last in proportion to the kind of loam to be used. For instance, if this be of a heavy, close, retentive nature more of the ingredients named will be required to maintain the porosity of the soil; but where the loam is inclined to be of a sandy nature less of them will be needed. To each load of the mixture, whether it be heavy or light, add $\frac{1}{2}$ cwt. of $\frac{1}{2}$ -inch ground bones. These ingredients may be added in making up the border, which is preferable to mixing the whole together previously, because by constant turnings over of the compost to as thoroughly incorporate as is thought necessary, the loam or soil becomes broken up so finely as to lose much of its porous nature when put together, and consequently is more liable to become inert and too close to admit of a rapid discharge of the water, which of necessity must be applied copiously from time to time for the support of the immense quantity of foliage which healthy Vines carry. It is a mistake to add farmyard manure to the soil. This only induces the Vines to make grass growth devoid of maturity. Under no consideration should the border be made too deep. Shanking of the Grapes is more often traceable to the roots being in soil too cold than anything else. A depth of 2 feet of soil is ample for any Vine border. Drainage should be provided amply. One foot of broken bricks, stencs, or clinkers is not too much to carry off surplus water quickly. In making a new border it is not wise to complete it at once; rather make it piecemeal by adding a couple of feet in width every year until the limit is reached. The Vines will thus obtain more support by their roots being able to run into new soil.—S. P.

4771.—**Grapee for a cold-house.**—I should not advise anyone to plant Alicante Grape in a cool-house, for at best it is only third-rate in flavour. The fact that Alicante will thrive and the berries take on a good colour if grown on the back wall of a vinery or greenhouse makes it a favourite with some amateurs; but if I had to eat the fruit I am sure I should strike for a change. For a cool-house Trentham Black is more suitable than Alicante; but why not grow Black Hamburg or Foster's Seedling (white)? You will never get better sorts. If you do not want large bunches and berries the Dutch Sweet-water is far and away superior to Alicante in flavour.—J. C. C.

—The Grape that the most confidence can be placed in to ripen in a cool-house is Black Hamburg; none equals this old favourite. Independent of its adaptability for a cool structure, the quality of its fruit cannot be surpassed. Alicante is a bumpy Grape, but in point of individual quality it is sadly lacking as compared with Black Hamburg. Trentham Black is not good for a cool-house; it fails to get well sometimes even in a heated structure.—E. H.

4752.—**Blight on Apple trees.**—I expect the soap-water was not strong enough. Sulphur is not of much use to kill these insects. Linseed-oil smeared over them will kill them, so will paraffin; but I have seen trees injured by the use of paraffin, and do not recommend it, except it can be mixed with soap and afterwards tined down with water. A strong solution of Sunlight Soap, 6 ounces to the gallon, will kill all kinds of aphid. This will, I think, prove a cheap and useful insecticide.—E. H.

—“Pomona's” trees are infested with “American Blight,” commonly known as the woolly aphid, a most difficult pest to get rid of. If the trees are not too badly overrun with the insect as to cause excrescences all over the branches, pare many of the worst parts down to the level of the bark of the branch, and well scrub every part of the tree with methylated spirits, using a hard brush. If the washing is carefully done twice during the winter the bulk of it will have been got rid of. Even if that is so, some is sure to show during the summer. These should be touched with more of the spirit, and with persistence the trees may be rendered tolerably clean.—S. P.

—Your trees appear to be affected with the “American Blight.” Petroleum or paraffin-oil is a certain remedy for the pest. I have cleared a great many trees with it these last few years. Last spring I used it about some trees that were very badly affected. It completely freed the trees from the pest for the season. It will probably appear again next spring when the trees must have another touch up with the oil. I apply the remedy with a small paint-brush, and use it undiluted with water. It needs no rubbing in as petroleum-oil has strong penetrative powers. I have never seen any ill effects from its use.—L. C. K.

4738.—**Cape Gooseberry.**—For pot culture it is best to treat this plant as an annual, and then it is of very easy culture. Sow the seed in March, and afterwards grow on in single pots. Those 7 inches in diameter will furnish quite a large plant. I have a plant at the present time in a 6 inch pot that is furnished with lots of fruit, but which has had only ordinary soil and plenty of water. If planted out in good soil early in the summer it will cover quite a large space in two or three months, and insects do not trouble it. The flowers are insignificant, but the fruit is of an ornamental character.—J. C. C.

—This is a native of South America and is closely allied to the Potato and Tomato, and will do very well under the same cultural conditions as the latter. I have fruited the plants out-of-doors in the summer planted against a south wall; and they will do still better if they receive the same treatment given to Tomatoes under glass. May be raised from seeds or propagated by cuttings, the latter being I think preferable, when good cuttings can be had. If planted out under glass in a span-roofed house they will commence bearing early and continue all the summer. They are accommodating in the matter of temperature; they will bear a warm-house, or if kept on the side of dryness at the roots they will pass through the winter in a greenhouse where the frost is kept out. I once grew a lot in a cool orchard-house, but a severe frost killed nearly all the plants. If the most is done with them they should not have a lower temperature than 50 degs. to 55 degs. at night. They will grow in any good soil. The plants bear on the young wood and a supply of this should be encouraged.—E. H.

4754.—**Young Vines.**—Many young Vines are ruined by leaving too much length of rod the first year, and many persons aim at covering the trellis too quickly; the result is after a few years of indifferent crops of fruit the rods require renewing. Well-managed Vines ought to last thirty years in good condition, and give as good bunches from the lowest spurs as from the opposite end of the Vine. A greater length of rod should not be allowed to remain at the first pruning than will provide one pair of side shoots and a leader; which means that the cane should be cut back within three buds of the first wire.—S. P.

—If you value the future more than the present, leave about 4 feet of wood to fruit above the bottom wire, and take about 8 bunches of Grapes. Such Vines will fruit for a longer rod, and many growers nowadays would make them do it.—E. H.

4773.—**Apples, &c., for a small garden.**—Instead of having two trees of Eohlinville, why not have one of Lord Suffield or Lord Grosvenor, and one tree of Irish Peach, which ripens its fruit in August, instead of two of Cox's Orange Pippin, good Apple though it may be? The season would be made much longer, and more variety would be enjoyed. Governor Wood is a better Cherry than White Heart, ripens earlier, and the fruit is of superior quality. In the place of one Victoria Plum why not plant a tree of Jefferson? This is a prodigious bearer, while the quality leaves nothing to be desired.—S. P.

4763.—**Grapee not colouring.**—Over-cropping the Vines is a common cause of the non-colouring of the berries of this Grape. During that stage the hot-water pipes should be kept warm to maintain a buoyant atmosphere both night and day. The ventilators at the top of the house should always be open a little way to enable impure air to escape and admit fresh, causing a free circulation, opening the ventilators a little at the front on favourable occasions also. If the night temperature does not fall below 50 degs. the Grapes will colour all the faster. Examine the borders to make sure that the roots do not suffer for want of water. If the soil is too dry the roots cannot feed the Vines to enable the berries to colour properly.—S. P.

4753.—**Planting a Pear-tree.**—Directly the leaves fall is the best time of the whole year to plant fruit-trees of any kind. Fresh roots are then made before the drying winds of March set in; the trees consequently succeed much better the first year than though planting is postponed until the spring. If the soil is heavy and retentive of moisture, it should be trenched 2 feet deep at once, keeping the surface-soil in the same position as it was before. By moving the soil to the depth named surplus water from heavy rains so much more quickly passes away during the autumn and winter months, the wood ripens so much better, and canker is less likely to take place, than where there is a want of maturity of the current year's growth. Do not add manure to the soil, except it is very poor in quality, then a small quantity of half-decayed horse-manure will be an advantage. This, however, ought not to be buried deeply. In the case of heavy soil the tree should be planted on the surface, mounding the soil around it sufficient to cover the roots with 3 inches deep. Choose a dry day for planting, then the soil can be trodden firm about the roots. After planting place a stake alongside of the tree to prevent the wind moving the roots from their position. Mulch the surface for 2 feet around the tree with a 3-inch thickness of partly-decayed manure.—S. P.

—Plant the Pear now—the sooner the better. Break up the soil well, and place some good loam round the roots in planting. Do not plant too deep. Mulch with manure, and stake as soon as the planting is done.—E. H.

4737.—**Scale on Peach-trees.**—Wash the trees as soon as the leaves are down with Gleanst Compound, 4 oz. to the gallon. Give another dressing in February after pruning, and these will be no more trouble with scale.—E. H.

—When the leaves have fallen carefully scrub the infested parts with a strong solution of Tobacco-water and soft-soap, using a fairly hard brush. If the branches are handled carefully and the work intelligently done, no harm need happen to the buds on the trees. A second washing will remove any missed the first time.—S. P.

4774.—**Freake of Nature.**—A graft of Plum has been placed upon the Apple branch, no doubt. It is not a freak, but done purposely. You have evidently pruned your trees to death. If you leave them alone you might get some fruit, but not if you deliberately cut off all the young growth.—C. T.

The St. Bruno's Lily.—The beautiful St. Bernard's Lily and St. Bruno's Lily, named respectively A. liliago and A. liliastrum, are two very attractive garden flowers, and useful to cut from for the house. Everyone who has a garden likes to see flowers from the border in the house. If only one kind can be grown, choice should be made of the St. Bruno's Lily, which in a light yet deep soil throws up its spikes of pure-white flowers like miniature Lilies. The best times to plant are the autumn or spring, and beware of small marauders in the shape of slugs that seem to find the tender leafage delicate fare. The flowers of the Anthericum are so pure-white and graceful that they may be used in the choicest arrangements. I seldom see it in small gardens, but I have had it very beautiful this year in quite a small place.—T.

TREES & SHRUBS.

OLEMATIS DAVIDIANA.

This useful Clematis is not cultivated as much as it deserves to be. Its large, deep-green, Vine-like leaves and clusters of pale-blue flowers, of a very rare and delicate quality of colour, entitle it to a place in the choicest collections. Probably it is only hardy in our southern counties, and even there likes a warm sheltered place and a little dry Fern for winter protection; but its distinct character and refined beauty will repay a little care and trouble. It forms a bushy plant about 2 ft. high and flowers in July. B.

4768.—**Creepers on West end houses.**—The creeper which looks like a Virginian Creeper on many of the houses about Grosvenor-place is a Virginian Creeper, but not the close-clinging kind. Its proper name is Ampelopsis hederacea. It is a fast grower and very ornamental, but its non-clinging tendency is rather against it for those who want a creeper that requires no training. There is a variety of this called muralis, which does cling closely, and I think is the best Virginian Creeper I ever saw, combining the close-clinging character of A. Veitchii with the free, graceful leafage of A. hederacea. It should be well and widely known. Some plants that I had planted in April of this year are now quite 12 feet high, and they have not been watered nor had the slightest attention since planting. They cling to the wall most tenaciously.—A. H.

— I presume the creeper you mean is the Veitch's Virginian Creeper (Ampelopsis Veitchii), which clings close to the wall, and is much used in London gardens. It is a free-growing and most useful climber, and does not need nails to support the growth, while the leafage turns to brilliant colours in the autumn.—C. T.

4736.—**Striking evergreens.**—The best time to put in cuttings of evergreens is during September and October, if planted in the open ground; but Conifers and such things as are rooted under glass should be put in earlier. Cuttings in a dry time must be well watered, and where only a few plants are required it will save trouble if the cuttings are planted in a shady position on the north side of a wall or fence.—E. H.

— It is considerably too late in the season for this to be successful. September is quite late enough. Such evergreens as Laurels, Sweet Bay, Laurustinus, Privet, Eonymus, Aucubas, Griselinias, &c., would root freely on a sheltered border, if put in during the early part of September. During the present week I have been engaged in putting in some evergreen cuttings of choice varieties; but these are kept close and under glass. In the open it is really too late, the wood being rather too matured to callus freely.—P. U.

— Many kinds of evergreens will root readily from cuttings, but very few in the open ground. Laurels, Box, Aucubas, and Ivies of sorts will grow fairly well, but the choicer kinds need the protection and assistance of a cold frame for at least nine months. No time should be lost in inserting the cuttings out of doors of those kinds previously named. Choose cuttings about 9 inches long of the current year's growth, retaining with each a piece of the old wood, commonly called a heel, as from this roots are more readily formed than from the softer part of the shoot made during the current year. Instead of cutting off the shoots with a knife they should be slipped off by holding the branch in one hand and with the other give the cutting a sharp downward tug. Trim off any loose bark at the base. Insert the cuttings 4 inches deep in rows 10 inches apart and 4 inches from each other. If the soil is heavy seek for a small quantity of sand at the bottom of the trench, on which the base of the cuttings rest. Roots are more quickly formed in sand than soil. Press the soil firmly about the base of the cuttings, as upon this much of the success or otherwise depends. If the base of the cuttings is loose how can roots form in the soil? On the surface between the rows lay a mulching of decayed leaves, Cooco-nut-fibre refuse, or even coals, ashes an inch thick to prevent the frost up-heaving the soil, and consequently loosening the soil at the base of the cuttings.—S. P.

4765.—**A Laurel shrubbery.**—The principal cause of the Laurels dying is the constant clipping to which they have been subjected.

Laurels will not stand such treatment unless the roots are kept nourished by an annual top-dressing of soil or manure, especially when they are growing under trees. You had better root out the old plants and take away a good quantity of the old soil, and after putting fresh earth in its place put in some more Laurel-plants, and instead of clipping them with shears, use a knife to cut away unruly branches. It is not likely, however, that the plants will trouble you with too much growth. Nor must you expect them to remain in a vigorous condition unless you help the roots in the direction I have indicated.—J. C. C.

HOUSE & WINDOW GARDENING.

4707.—**Campanulas in pots.**—These plants will do better in a window than in a frame during the winter, as they are apt to mildew, and slugs, too, are so fond of them that it is difficult to save them from being eaten up unless indoors. They are excellent window plants, and will do well in any room without severe frost, being given all the sunshine and mild air available. The proper time to divide them is in the autumn, and cuttings put in during the spring do not often flower at once. Campanulas, however, do not often need re-potting; the beautiful plants hung up in cottage windows, covered with a mass of bloom in summer, are often left in the same pot year



Clematis Davidiana. Engraved from a photograph.

alter year, and still go on blooming. It is best to let them become quite pot-bound before they are interfered with, when they can be divided in August, just after flowering, and they will then make handsome plants again the next season. Cuttings are much longer in attaining the needful size and strong, hardened growth on which the blossoms are so abundantly borne.—L. L. R.

4766.—**"Geraniums" in winter.**—These plants should be potted up at once and placed in a window for the winter, if possible in a room where there is a constant fire, but they will do in a spare bedroom or bathroom with a sunny aspect, if special measures are taken to keep them safe during a frosty time. They should have been cut back rather sharply in September, so as to relieve them of some of their tops, if at all large and old, but young plants do not require much pruning, and are better without it unless it be done early enough for the wounds made to thoroughly heal and harden out of doors, as they are apt to become mildewed and kill the plant if they are made at the time of potting up. Take them up with as much of the soil adhering to them as practicable, and place them in pots which will just hold them comfortably (and no more), filling the sides with sandy soil and leaf-mould—no manure. Make the plants very firm in the pots, with good drainage, covering the crocks with a little Moss, sprinkled with soot; and if the weather be mild and not too wet, let the plants stand on a bed of ash or of

slates or glass, for a few weeks to harden thoroughly before taking them indoors. They must, however, be sheltered before sharp frost sets in, but will do well under a verandah or any sort of protection in a sunny spot for some weeks, unless we have an early winter. "Geraniums" are nearly hardy—in fact, they live outside year after year in South Devon, so that all they require is to be kept safe from severe frost when in pots. But mildew is more likely to kill them than frost indoors, and this enemy must be guarded against by gathering every falling leaf as it lodes and burning it, never allowing any sort of rubbish or rotting stems to be about the plants, as mildew seeds itself rapidly, and will destroy a whole set of plants, if allowed to do so. The remedies are dryness, especially of the air, and a slight sprinkling with flowers of sulphur on the infected parts. "Geraniums" should be kept as dry as possible during the winter, only being watered occasionally, when enough must be given to run through the pot, so as to water all the roots thoroughly, the saucers, if used, being emptied half-an-hour afterwards, as they must "never" stand in stagnant water, except when in full flower. A kitchen window is an excellent place for "Geraniums" in winter, and they may be wintered in a dry frost-proof cellar, if kept out of doors as much as possible to harden, and brought up as early in the spring as practicable, sheltering them again in the same place during a sharp time of frost. Or they can be put into a corner of a room away from the glass during frost, and covered with several layers of newspaper which will protect them enough if they are dry at the roots. After the cold is over place them out of doors in mild rain, which will do them much good, taking them in at night in case of frost recurring. In the window of any sitting-room with a daily fire they will do very well, especially if a newspaper be put between them and the glass in slight frost, and they are moved into a sheltered corner, as above, when the weather is very severe. In March they may receive a shift into a pot one size larger, with good rich soil; they will be covered with buds and ready to put out again early in May.—L. R.

— In answer to "F. F. Richmond" as to keeping "Geraniums" in winter, I kept mine successfully last winter in a cellar, the pots resting on old boxes. The window opened toward the south, and it was opened for an hour or two on all dry, sunny days, unless it was actually freezing, watering very seldom, and taking all decayed leaves off. About the end of February or beginning of March I bought some potting-soil from a nurseryman, and taking every plant from the pots, I scrubbed the pots both inside and out, and repotted the plants in the new soil, taking shippings vary liberally. I kept them in the same cellar for another week or so, giving air freely, and then moved them into a tiny lean-to greenhouse without any artificial heat. I was truly ashamed of them, and the nurseryman laughed at them, but the result has been most satisfactory—far beyond my expectation. I have had nice, healthy, fine plants, and very fine bloom both in the tiny house and the few I had to bed out. I should think if you have a sunny room where you burn a lamp instead of gas it would take the place of my tiny house, but such plants must have fresh air, but avoid a draught.—C. R. F.

— You may keep the plants in a window or spare room, and I have hung mine up by the roots in a cool cellar, and they have lived well through the winter. In the early spring they are taken down, cut back, potted in light well-drained soil, and they start away well. Then you can get cuttings from them, if you have a little heat to start them. The great thing is not to give much water when the plants are in pots—indeed, scarcely any—and remove decaying leaves. Damp kills wholesale, and the cellar in which the plants are hung up must be cool, and, of course, away from the influence of frost.—C. T.

— This is rather late in the day for potting up "Geraniums," unless there is artificial heat available. They may be kept in the windows of a room where fires are occasionally burnt, giving only just enough water to keep the

INDOOR PLANTS.

4749.—**Treatment of Gloxinias.**—I should recommend you to leave them as they are until the spring. When the foliage drops away, do not continue to water, but let them dry off; stand the pots on a shelf out of the way. About March or April, the new growth will begin to break; then take up and repot in a mixture of about two parts good fibrous loam to one each of leaf-mould, peat, and silver sand; water them in and keep moist and warm; there is no difficulty about growing and flowering; but they should be watered with a spout below the foliage, not overhead; water dropping on either flowers or leaves rapidly decays them.—A. G. BUTLER.

—Better leave the Gloxinia halves in the pots till the growth begins in spring; then shake out and repot in loam, peat, and leaf-mould, about equal parts, rendered porous by using sharp sand freely. These plants used to be grown chiefly in peat and sand years ago, but it is now found that greater development can be obtained from a stronger, richer soil.—E. H.

—The best compost for these charming plants is a mixture of loam, peat, leaf-mould, and sand, about two parts of the first to one each of peat and leaf-mould, and half a part of sharp or coarse sand. Drain the pots well, and pot firmly. The halves should be started in a gentle hot-bed in the spring, using small pots and light, sandy soil; shift them on as they grow, and keep them moderately warm and shaded, with a humid and rather close atmosphere, at any rate during the early stages. Water freely, and give a little weak liquid manure as the flower buds rise. When the bloom is over, dry the plants off gradually and store away in a rather warm and dry place for the winter.—B. C. R.

4743.—**Mignonette, &c.**—To have Mignonette to flower in the winter the seeds should be sown not later than August in the best loam which can be obtained, and made quite firm before sowing. My plants, which are in bloom now, were sown in July. Another batch was sown in August, but these plants are not showing flowers yet, as they have been kept in a cold pit, freely ventilated, the flowers not being required before Christmas.—E. H.

4728.—**Ornamental leaved plants.**—This is a very difficult question to reply to satisfactorily, partly because fashions change, and new plants are introduced from time to time, which take the lead for a time, at any rate. I remember when the very handsome large-leaved plant, *Cyanophyllum mesgiffianum*, was first introduced it was for a time found in every first-prize collection. *Sanchezia nobilis variegata* when first introduced was run upon for some time; but neither of these plants are much seen now. The truth is, exhibitors who make a business of showing grow plants which can bear carting about the country without injury, and wisely go in for such things as Palms, Cycads, Crotons, *Draenas*, *Anthuriums*, *Pandanus Veitchii*, or something that will make a good specimen, and that can bear exposure. It is of no use to grow a delicate thing that exposure injures or perhaps kills. Again, a good deal depends upon the skill brought to bear. Foliage-plants for the most part are not difficult to grow, but it requires some degree of cultural skill to bring them out in the best possible condition. If I was picking out three foliage-plants for carting about to show I should select something that would stand wear and tear, and grow them into es fine specimens as possible, trusting that size and freshness of condition would carry the necessary weight to win—a good Palm or Cycad, a good Croton, and a good *Pandanus Veitchii*. *Phryma* will, I think, make a very useful exhibition foliage-plant. It is a very distinct thing, and is not difficult to grow. *Anthurium crystallinum* well done is a striking thing. *Alocasia metallica* well grown is also useful. Some of the *Marantas* are pretty, but most are too small of stature for this work. But it is necessary to do foliage-plants well that there should be a good well-heated stove.—E. H.

4766.—**Building a small greenhouse.**—Do you intend to make the house with a span-roof or a lean-to? This makes some difference. A suitable height for a span-house of the size

named would be 7 feet to the ridge-plank, with a roof-pitch of about 25 degs., which would give the height to the eaves something less than 5 feet. The side beds or stages (and the walls also) might then be 3 feet in height, leaving 2 feet on each side for glass. If to be constructed without side-lights, take the side walls up a foot higher than the beds, or say about 3½ feet, and make the roof so much steeper, laying the wall-plates directly on these, and the rafters springing from them straight to the ridge-plank. The plates may be of 5-inch by 3-inch stuff, the end rafters 3 inches by 2 inches, and the rest (rebated for the glass, of course) 3 inches by 1½ inches. The ridge should be 7 inches by 1½ inches, and the door posts 3 inches by 3 inches. The roof ventilators, two on each side, may be 2½ feet by 1½ feet each, hinged to the ridge-plank.—B. C. R.

4724.—**Best Fuchsias.**—You may select any of the following. It is a little difficult to name only one, but I give the names of a few to each section. Of the dark coloured kinds select *Abundance*, the sepals of a bright reddish colour, the corolla deep purple; *President*, the tube vermilion, corolla violet, a variety of excellent habit; *Try-me-O*, a splendid kind, fine in colour, robust, and free; *Lye's Rival*, tube red, sepals purple-violet. The following three are good: *Lye's Excelior*, tube and sepals rose-magenta, corolla of a carmine tone; *White Souvenir de Chiswick*; and *England's Glory*, a very good exhibition Fuchsia.—O. T.

4751.—**Coronilla and Oytisus.**—Do not repot the plants now; the right time to do this is in the early summer, when the flowers are over, and before the fresh growth begins. After the treatment they have had they ought, with the aid of some weak liquid manure, to bloom profusely next spring, and should then be pruned, re-potted, and grown on again.—B. C. R.

—Judging from my own experience of these things, I should say—Don't. If well nourished many plants will put up with small pots, but in the case of hard-wooded things this is often overdue. I should recommend a shift into pots a size larger, running in all round them a compost of loam and well-rotted manure.—A. G. BUTLER.

4730.—**Greenhouse plants.**—A well-grown *Plumbago capensis* always useful in August, and it is an easy matter to have a specimen fresh in bloom in August. Among the triolors, *Hatfield major* will be in good condition then.—E. H.

4610.—**Keeping Fuchsias through winter.**—The Fuchsias will keep in the cellar with *Begonias* and *Dahlias*; but it would be as well not to cut them down until it is time to start them into growth early in the spring. The soil should be very dry, for if it is moist and the cellar rather on the warm side they would start to grow, which would be disastrous.—J. D. E.

4697.—**Plants for a cold greenhouse.**—You cannot grow very many things in a greenhouse not heated in the winter, but in the summer you could have several plants. I should rely largely for the late autumn and winter upon *Chrysanthemums*, which thrive readily in such a place, if carefully cultivated, and you will find in recent numbers of *GARDENING* much information upon this flower. Of course halves may be grown, but you would do well to heat the structure with a small oil-stove or similar appliances, then you can have such things as *Zonal Pelargoniums*, *Fuchsias*, and plants of that character. Try good *Ferus*—forms of *Lady Ferus* end others.—C. T.

4642.—**Flowers for Christmasehurch decoration.**—The best white flowers for Christmas decoration are *Arums* (*Calla aethiopica*), which can be brought on in pots, with very gentle heat, to flower at Christmas, if procured at once; but the plants must be strong and well grown, having spent the summer in a rich border in the open air and been potted up in rich compost during September. *Arum Lilies* are very hungry and thirsty plants, needing plenty of luke-warm water, while forcing, with cancers, and rich top-dressing when the soil is lowered an inch or 2 inches by their strong and rapid growth. The plants should now be in a cool greenhouse, heat being only put on when the temperature goes below 45 degs. To open at Christmas the heat must be increased to 55 degs., with a higher temperature on sunny days. Paper-white *Narcissus* and Double *Rosa* *Narcissus* may possibly bloom in time if potted at once, but it is now late for them. *Roman Hyacinths*, however, are still available, as they grow very quickly. All the above-named bulbs bear slight forcing, without which they would not now be in time. *Narcissus Tazetta*, which flowers in seven or eight weeks from the time of potting, can be had in time.—LUNNERSHIP

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in *GARDENING* free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of *GARDENING*, 37 Southampton-street, Covent-garden, London. Letters on business should be sent to the Postoffice. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as *GARDENING* has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the locality in which their experience is gained. Correspondents who refer to articles inserted in *GARDENING* should mention the number in which they appeared.

4757.—**Growing Larch from seed.**—When cones are collected, how is seed separated and prepared for planting?—L. A.

4738.—**Pears on a clay soil.**—Will some kindly tell me whether staff loam would grow Pears fit for market purposes?—READER.

4750.—**Herbaceous plants and rabbits.**—I shall be glad if a list of herbaceous plants least likely to be destroyed by rabbits?—R. V. O. B.

4730.—**Lobelia erinus.**—Information asked as to the best way of preserving a good strain of *Lobelia erinus* through the winter?—LUCAN, Dublin.

4791.—**Plant for a vinery and greenhouse.**—Will someone kindly inform me what are suitable inexpensive plants for keeping in above?—F. N.

4792.—**Fruit-trees for a north-east wall.**—I shall be glad if anyone will give a list of Pears, Plums, and Cherries most likely to succeed on a wall with east aspect?—R. V. O. B.

4793.—**A leaky roof.**—Is there any way of doing up the roof of a large glass-house, and prevent drip, except taking off the glass and reputtying it, so that is such an expense?—D.

4791.—**Myrica Crista-galli.**—I saw this plant in good form at Kew a few weeks since, and shall be glad to have particulars as to cultivation, and also to know where it can be obtained?—T. A. F.

4795.—**Superphosphate and Potatoes.**—Will anyone kindly tell me if there is any danger of superphosphate causing Potatoes to scab? Not having used any myself, I should like to make sure before I tried any.—D. Z.

4796.—**Green Tomatoes.**—I have a lot of green Tomatoes on the stem. What is the best thing to do to ripen them? They appear to be still growing in the cold greenhouse, but I want the room for other things.—NORMAN.

4797.—**Black Currants.**—My Black Currant bushes have set such large buds on their new growth this year, they are as large as Peas, and appear just on the point of bursting. Shall I have fruit next year?—A. BORTONLEY, Deunbury.

4798.—**Seed Potatoes.**—Would someone kindly give me the particulars regarding the steeping of Seed Potatoes in a solution of sulphate of ammoniac and nitrate of potash, given in the *Standard* some time last year?—A. SUBSCRIBER.

4799.—**Best kinds of Rhubarb.**—Will someone kindly tell me which are the best kinds of Rhubarb? I should like some for forcing—some early outdoors, and a main crop. Also state the best time to procure roots for planting?—VINEX.

4803.—**Fence behind a border.**—I propose putting a fence about 6 feet high, with the back of a herbaceous border, on which to grow *Roses*, *Clematis*, &c. Would wire rabbit netting attached to wooden posts be suitable for the purpose?—E. C. M.

4801.—**Celery.**—This year my Celery (red and white) looks most healthy, and of very full size, but when dug, cleaned, and cut the heart is soft, brown, and a pulpy rotten mass. I cannot discover any cause. What would be the probable reason?—L. F. B.

4802.—**Clematis flammula.**—Will "J. C. O." or someone else kindly tell me why this *Clematis*, planted 8½ years ago, and full of bloom during the past two months, has not the sweet scent that it usually has? It is growing over an old Plum-tree.—T. G.

4803.—**Climbing Roses.**—Will someone kindly give me the names of half-dozen good hardy climbing *Roses* suitable for a wall facing north-west, and half-dozen for a wall facing south-east? Also a dozen good hardy bush *Roses* suitable for middle beds between these two walls?—UNLANS.

4874.—**Seedling Anemones.**—I have a lot of seedling St. Bridg's Anemones, some showing bloom-buds. They are in a span-roof cold frame. Which is proper treatment? 1. Take them up and store away? 2. Take up and transplant into bed? 3. Take up in spring and transplant?—W. B.

4806.—**An unheated greenhouse.**—I have an unheated span-roofed house, divided by lathes-work down the centre. On this I have *Roses* (*M. Niel* and *Niphetos*); they have now covered the lathes and reached the roof. I find the height of the house will only allow them to be trained about 3 inches from the glass. Will the frost damage the plants when so close to the roof? Can I grow *Roses* in pots on the stages underneath?—S. H. F. R., Bham.

4806.—*Convolvulus minor*.—Are these good bloomers, or did I get the better plant, *Tropaeolum*? This summer I planted Dwarf *Nasturtium*, but they did not bloom, yet the tall kinds bloomed splendidly in the same soil. Please give the names of a few *Tropaeolums*, because I think they will stand snails well?—H.

4807.—Using manure.—I have been collecting a good quantity of horse and cow-manure. Shall I lay it on the ground now seed level for the winter, or leave it to rot during the winter, and dig it in in the spring? My ground is pretty full of perennial. Any advice would be gratefully received.—ENQUIRER.

4808.—Treatment of a Fig tree.—I have a Brown Turkey Fig-tree planted against a wall facing due south. It makes abundance of foliage and wood, but the fruit, when reaching maturity, turn yellow and all fall off. Will someone who understands give an suggestion as to cause, and how to remedy same?—HARRIS.

4809.—*Roya carnea*.—What time of the year is the best to procure this, and what sort of plant lets, and what colour are the blooms, and at what season do they bloom? Any information as to treatment, its habit, &c., will be thankfully received by me, as I thought of buying some if they can be grown in a window facing south-west.—H.

4810.—Planting Briars.—I am just going to put in some Briars. Should they be planted rather deep, and should the shoots on which they are budded next year be allowed to grow wild until the following spring? If not, when should they be cut back, and how long ought they to be before moving Briars after budding, please?—NOMAD.

4811.—Hardy Fuchsias.—What kinds would be hardy in Middlesex, planted outside under a wall 10 feet high, facing south-east? It is well sheltered from east, north-east, and north winds, and they could be covered up with straw in winter. If any sorts would do, when would be the best time to plant? It is a snaky district.—H.

4812.—A garden at Leyton.—I have just moved here, quite close to the Leyton Station, G.E.R. Would some gentlemen kindly give me an idea of what the soil is about here? Is there any chance of growing a Rose? The soil seems poor, but fear I must try. Should like an idea of what does best in ordinary garden perennials (no greenhouse)? Have trod out my Lilies, &c., in sink or swim.—A. A. M.

4813.—Growing for market.—I would like to know what would be most profitable to grow for the market in a cool house, 60 degs. at night, 20 feet length, 12 feet width, and 9 feet height? Tomatoes and Cucumbers have done well during the summer, but the heat is not strong enough for a succession of them. Would French Beans do for one thing? Shall be glad of any suggestion.—IN DUBFAIR.

4814.—Treatment of Vines.—I have a vineyard with four old Vines in it, but they have been neglected, and this year I only had 9 bunches of Grapes on them, and that was an one Vine. I had animal's blood put on the roots, but it does not seem to have done much good. Will anyone else kindly inform me what is the best measure to use, when they ought to be pruned, and where I could find a competent man to do the pruning? Would any other information will be thankfully received.—VINNER.

4815.—Basilic flag.—Will anyone kindly give me some information about flag ("Basilic flag," I think it is called) as a dressing for Grass-land, or for kitchen or flower garden? I heard of it some time since, and was told that it was very good and much cheaper than ordinary artificial manures; and I afterwards heard that it suited some lands only, and was very prejudicial to others. I should like to know what descriptive of soil or plants it is suitable for, how it should be applied, and where it can be obtained?—C. W. C.

4816.—Fixing hot-water pipes.—I should be glad if someone could kindly give me instructions for fixing my hot-water pipes. My system has been found to be a great pressure in the pipes, and they leaked so badly I could not use the apparatus. The pipes are closer together at the far end than at the boiler end, owing to the bend being short; supply cistern is fixed to the return pipe, near the boiler; also how much rise should the pipes have? Would a 2-inch pipe between boiler (which was made for 2 in.) and the 3-inch pipe used, hinder the circulation? I cannot get the 3-inch pipes tight on the 3-inch boiler neck.—G. B. I.

4817.—A hot-water boiler.—Will "B. C. R." kindly advise me in the following: Having purchased a hot-water boiler (Star pattern), with an arch-way out of one end, 9 inches wide and 4 inches deep, length of boiler 30 inches, and 17 inches external width, I should be glad to know the most efficient way of setting same in brick-work? Also what quantity of piping it is capable of working steadily? I may say that I am out quite a novice, having constructed a coil furnace after "B. C. R.'s" instructions, which has worked perfectly. The chief part of my present difficulty is the plan of the flues, and whether to use the said arch for the furnace door or for flue.—J. W.

4818.—Ferns for a heated conservatory.—Will someone kindly tell me what Ferns and Mosses will suit a conservatory, moderately heated by hot-water pipes in the daytime up to 60 degs. or even 65 degs.? It is on the south side of the house. Three sides are glass, with windows above and at the sides to open, size 20 feet by 7 feet. I live in Baywater, London, and wish to grow some large hardy Ferns high up, and some smaller and fairly delicate Ferns low down among the tufts and osmunda, which forms a rocky overhanging pool. I want to hide the rock-work well, there is plenty of osmunda. Will *Smilax* trail up the wall in this conservatory, or does it require more moisture? Perhaps "C." who gave an illustration of "a rock pool fernery," in GARDENING, October 21st, can advise me!—PASH.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

4819.—*Camphora officinarum* (Siamensis). This is the name of the plant you send, the Chinese

Camphor-plant, and distinct from the Bornean and Sumatra *Camphora*, which is the produce of quite a different plant, called *Dryobalanop camphora*.—J. J.

4820.—*Dianella species* (Benj. Mann).—The berries you enclose appear to belong to this family. They are very pretty and showy. The plants are for the most part natives of Australia and New Zealand, and they will thrive well potted in well-drained pots in some what stiff, loamy soil. Sow the seeds at once.—J. J.

4821.—*Cyrtopodium Harrisianum* (J. Austin).—The flowers seem resembles this, the first garden hybrid *Cyrtopodium* raised by my poor friend Dombay at the Messrs. Vetch's nursery, Chelsea. But it is a very poor form of the plant, which I advise you to destroy. Some very fine forms of it have been raised, but I cannot name yours amongst them. I would certainly consign it to oblivion.—M. B.

4822.—*Cyrtopodium Schroeders*.—J. Austin sends me four flowers of *Cyrtopodium*, and asks what I think of them? All I can say is that *Cyrtopodium*. It was introduced some few years ago by M. Linden, of Brussels, and though it approaches Linden's old *lobata* closely, I do think that there is sufficient distinctness to warrant the name given by M. Linden; but it appears to me that the old original form *lobata* by Lindley was an exceptionally good variety, and perhaps it is a good thing that at the present time there are not many that know the genuine old form named by Lindley, which does allow many of the old forms to retain to merit the name of superb, but which in comparison are only in a second place.—M. B.

4823.—*Cattleya labiata Waroocooana*.—J. B. sends me four flowers of *Cattleya*, and asks what I think of them? All I can say is that *Cattleya*. It was introduced some few years ago by M. Linden, of Brussels, and though it approaches Linden's old *lobata* closely, I do think that there is sufficient distinctness to warrant the name given by M. Linden; but it appears to me that the old original form *lobata* by Lindley was an exceptionally good variety, and perhaps it is a good thing that at the present time there are not many that know the genuine old form named by Lindley, which does allow many of the old forms to retain to merit the name of superb, but which in comparison are only in a second place.—M. B.

4824.—*Pleione lagnaria* (T. T.).—The flowers of this plant are exceedingly beautiful, but to me they appear duller than usual, as, say, in the latter end of next month (November); they are very beautiful, however, whenever seen. The best plan is to stop with this and the other species which flower very freely is to pot them up in rather broad, shallow pans, with an empty small pot in the centre, and then in the autumn, when the *Pleiones* have lost their own leaves, and the flower buds begin to appear, a Fern which has been grown for the purpose should be inserted in the centre of the pan, to compete with the *Pleione*. Thus foliage could be added to them during the time of flowering. All the kinds go by the name of Indian Crocus when in flower.—M. B.

4825.—Hardy Ferns for a cool-house.—G. Moore, in writing to me about these things, is loud in his complaints about a certain dealer, who he says has quite taken him in. The A. Filix-femina and its varieties were very handsome and pleased him well during the summer; but he had asked for evergreens, and, not knowing Ferns, he kept them, when sent, with *Aspidreas* and others, so going off. What he is to do, the best thing to do is to go to some respectable dealer, who will perhaps charge you a little more and treat you honestly. You will need to go in for some forms of the evergreen Shield Ferns (*Polytaichium*), some Hart's-tongue and varieties (*Asplenium*), *Polytaichium*, *Lomaria* splanct, *Asplenium* *Talichmanis*, and A. *Adiantum-nigrum*. With these you should have a few foreign kinds, such as *Oryzium* *oryzoides*, C. *falcatum*, G. *Fortunei*, *Diloyogremma japonica*, *Oxyphium japonicum*, and such like plants. You have done like a great many others and first and ask advice afterwards. If you do not receive these you would not have been in the middle you are; but when you get some evergreen species do not cut your *Filix-femina* on one side; they will come up in the spring and be beautiful again.—J. J.

4826.—Names of plants and fruits. *Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C.

Names of plants.—G. T. Moore, 1, *Cyrtopodium venustum*; 2, *Odonoglossum Schlieperianum*; 3, *Odonoglossum Cervantesii*; 4, *Oncidium myrtilloides*.—N. B. Moorehill, 1, *Catantopus luridus* apparently; *Epipedium hookerianum*; *Dendrobium draconis*, not Low; this has a yellow flower, with a red-crested lip.—M. Hatch, 1, *Davallia alpina*; 2, *Rhipidopteria petata*; 3, *Oleandra Wallichii*.

POULTRY & RABBITS.

4827.—Keeping Pigeons.—As I am thinking of keeping Pigeons, and not having had any previous experience with them, would someone kindly answer me a few questions? I wish to keep them solely for table purpose; therefore, would like them to be good breeders, and also good-sliced birds, as I would kill them while young. Which breed would answer the purpose best? Also what would be the best food to give them in order to fatten them off quickly? To what ages would they breed probably? I should have to restrict the other sex with a batch of young ones as one would fowls? Also how often should they be fed—only as often as fowls are fed, or often, and how many times could I expect in a year from each pair? As time is rather an object with me, an early answer to the above will greatly oblige.—BVA ROCK.

4828.—Keeping cock, etc.—I should feel grateful if "Doubting" will advise me about my poultry. I have a very fine cock—cross between Game and Houdan. He is two and a half years old. Could I keep him with good results a year longer in the yard, or would it be best to get rid of him? I have had a young cock given me—cross between Plymouth Rock and Houdan. Is this considered a good standard? I would also like to know if "Doubting" when he has been successful with his poultry. With the old birds and 6099 pullets from January 1 to September 1, I had 1000 and 699 eggs. They are kept in pairs, but well cared for.—IVY BANK.

4453.—Fowls ailing.—I always associate the rattling in the throat, to which "Ivy Bank" refers, with the commencement of a cold, from which the fowl may recover in due course, provided the weather be favourable, but which may also develop into something far worse, and at last result in the death of the bird. From the fact that the querist's hens have laid freely for some months, I conclude there is not much the matter with them; but, at the same time, it is right to point out that laying hens are not at strong at the end of the season as they are earlier in the year, so that they cannot endure such severe attacks of disease. All that "Ivy Bank" need do is to take care that the hens are not subjected to severe draughts whilst on the perch and about the throats of the affected birds by dosing them twice daily with a teaspoonful of glycerine or linseed jelly.—DOULTING.

BIRDS.

4693.—Cramp in a bird's legs.—Immerse the legs in warm water, about as hot as you can comfortably bear your hand in, for about twenty minutes, then dry with a warm flannel and afterwards hang up the cage in a warm place free from all draughts. If this does not cure it float two or three drops of olive-oil on the drinking water, as it will then be evident that it is caused by indigestion. For small birds this, in my opinion, is the only safe purgative.—A. O. BUTLER.

4692.—Food for Doves.—Dori and White Millet are the only e they require to keep them in health. I never knew them to eat any kind of green food.—A. O. BUTLER.

BEES.

4828.—Management of Bees.—Will any Bee-keeper kindly give me advice about my Bees? Last year I had a swarm, and to this I added in the autumn two stocks of Bees, making my hive very strong, and had great hopes of having a good supply of honey this summer, but have had none, and the Bees seem'd dwindling away, so I asked a man who understands Bees to have a look at them, and found the queen covered over with what he calls parasites. I can find no such disease in any Bee book. He destroyed this queen and procured me a new one, and also added another stock, and sprinkled Keating's powder over them. He assured me this would effectually destroy any remaining parasites, but I am not at all satisfied with such meagre information, and would like to know the cause, and how to prevent a recurrence? I am a beginner, so may be supposed, and I stupidly bought a hive made by a local man, which it is impossible to see into. Seeing the mistake I made in my purchase, I have bought a new one from a neighbour; but still for the present I urate on the old hive as well. I shall feel grateful if anyone can help me? I may add when we uncwared the hive the bees were very strong, and the hive full of honey and brood.—IVY BANK.

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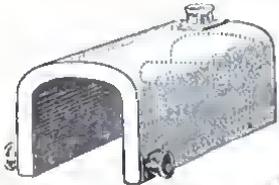
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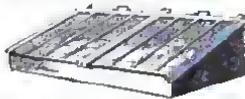
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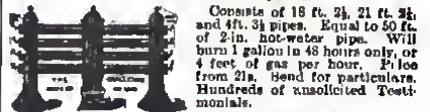
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No. 765.—VOL. XV.

Founded by W. Robinson, Author of "The English Flower Garden."

NOVEMBER 4, 1893.

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ROSES.

GRAFTING ROSES.

In their seasons I have already touched upon two methods of propagating Roses—viz, from cuttings and by budding upon suitable stocks. I now propose to write a few notes upon a third method—grafting. At first this may seem a little out of season; but as the stocks should be prepared now I thought it better to treat upon the subject early enough to cover the whole operation and culture, until the young plants may safely undergo ordinary treatment.

STOCKS.—These are many and varied. Briers, both seedling and cutting, should be lifted now and potted into a rather light compost of leaf-soil, loam, and sand. Manetti-stocks also need the same treatment. In potting these do not use a larger pot than will comfortably cover the major portion of their roots; nor is deep potting advisable. I use a 2½-inch to 3-inch pot, and am satisfied if three parts of the roots come into contact with the potting compost. Like the operation of budding, it is advisable to get the graft as close to the crown of the stock as possible, and for the same reason—viz, the avoidance of suckers from the stock. This is more easily accomplished when the crown of the stock is well above the soil; and, as we shall be pinning the stock directly it is potted, and also after grafting, there is no object in covering the whole of their roots with the first potting compost. When potted, plunge them in a pit or cold frame, only covering and shading them just sufficiently to keep them from shrivelling. In about six weeks you will find they have commenced to form new roots, and are now ready for grafting. Stocks can be purchased from almost any nurseryman. Both there is even a cheaper way of starting than this. Where a Rose has died, and the Brier-stock has lived on, the latter may be lifted and portions of its roots utilised as stocks. Choose pieces with a fair amount of fibre, and put them up in the same manner as stocks. This will also suggest a means of increasing your own stocks where their roots are sufficiently strong to allow of a few pieces being removed, or one can graft on a few roots from the hedgerow. In this letter form the Manetti-root is not so suitable as the Brier. Before passing on to the operation of grafting I may point out that it is not absolutely necessary to pot up the stocks previous to grafting the Rose upon them; but as we do not want the young roots to be broken and disturbed during the operation of grafting, and also because it is better for the stock to be a little in advance of the scion, it is preferable to pot them for a few weeks first.

THE SCION.—This may be in two distinct stages of growth, and I will treat briefly upon each in turn, first of all taking the ripe or dormant scion. Both of the scions are much better if they can be procured from plants growing under glass, the wood being more solid, and entirely free from the effects of frost. A ripe scion may consist of one or more eyes. I prefer to have at least two; but one must be guided in

this matter by the amount of suitable wood available. If possible, choose wood of the past season's growth, neither too strong nor weak. Where more than one eye is upon the graft endeavour to have one as near to the bottom as possible, because this will almost always make a stronger shoot than the upper eye. It does not much matter whether the graft be from a long rod of growth, or consist of the shoulders of shorter and lateral wood. We now come to what is styled a "green" graft. This is procured from wood about half ripened, and generally carrying healthy and fully-developed foliage. This will be farther alluded to under the heading of

GRAFTING.—We will suppose that our stocks are ready, and the time suitable; say from December to February. Shake away the loose material the stock was plunged in, and hold the pet firmly between the knees. Now cut off the top of the stock about two to three inches above the crown. Let the cut be in a slightly slanting direction, and on the longest side of the stock commence to pare away a little of the bark and wood. Before going farther I will give the reason for choosing the longest side of the stock. If we selected the lower side of the slanting cut for operations any superfluous moisture that might reach them in the propagating-case would run down into the severed portions of scion and stock, thus causing, or, at any rate, encouraging, damping and rotteness where it is not wanted. By choosing the other side we can sprinkle the grafted stocks without fear of this. The amount of wood to be pared away from the stock depends entirely upon the thickness of your scion. I do not approve of too much being removed; the real aim should be to fit the bark of both sides of the graft to the corresponding bark of the stock. Cut the scion in a slanting direction, letting it be of the same length as that upon the stock, and as nearly as possible at the same angle. In fact, they should fit to one another more or less throughout their whole length. One very important detail is to see that the bottom end of the scion is well down upon the lower portion of the cut upon your stock. This is one of the earliest and most important points of union. Some operators make a slight downward cut in the stock and an upward one in the scion, thus forming a small tongue upon the latter, and fitting this into the cut made in the stock; the object of this being to hold them in place during the process of tying. A few growers claim that it has a material influence over the union, but as my own experience has proved it to be quite immaterial, I never waste time over it, believing it best to make as few cuts as possible, either upon scion or stock, seeing that all have to be healed over. Having tied the scion firmly to the stock we now place it into a close propagating-case. Where such a useful adjunct to a greenhouse does not exist it may be met by using a box or boxes sufficient to hold the number of Roses you wish to graft. Half plunge the boxes upon a warm border or bench, and plunge the grafted stock up to the portion where the scion joins. If you can arrange to cover the boxes with glass, and shade them so much the better, if not,

simply cover with a mat or sack, and so keep them partially close and dark at the same time. Do not keep them too wet. A temperature of 60 degs. will be best for the first six weeks, and as they commence to grow remove the forwardest to another box, affording them a little more light and air until they are gradually inured to full light and the usual temperature of your house. Any dormant eyes that may have been upon the stocks are almost sure to put in an appearance while they are in the bottom-heat and under cover. Needless to say, these should be removed at once, and as closely to the stock as possible. As soon as the union is complete, and the graft well on the move, shift your young plants on into larger pots, if possible bringing the soil half-way up to the union of scion and stock. When shifted again, they may be placed a little deeper still. This encourages the Rose to produce suckers, and also strike off upon its own roots, thus materially assisting in its support. Do not afford too large a shift at first; two or three pottings should intervene between the 2½-inch and an 8-inch pot. Of course, a little stronger and richer compost will be advisable at each successive potting up to this stage. The method of operating upon a "green" scion is slightly different from the above. In the first place, the stock needs to be more forward in growth; sufficiently so, in fact, to allow of the bark being lilled. For this reason early spring is the best time for the operation; and, fortunately, it is then that we are able to find the best wood for the purpose. Keep the stocks more backward than in the case of autumn grafting, bringing them into heat about a month previous to grafting, so that the sap may be rising to meet the requirements of the young wood we are going to use. Commence by cutting off the stock as recommended for the first style; but instead of paring away any of one side, make a close cut with the point of your knife, from the crown to the top of the stock. Now prepare the scion by cutting it much the same shape as before, but letting the lower end be a great deal thinner. Lift the bark of the stock gently, and slip the point of your scion underneath, pushing it down to the bottom of the cut. Bind the whole together, and treat similar to the ripen graft.

4810 — Planting Briers.—When first planted in the hedgerow these are best placed some 6 inches or 9 inches in the soil. Previous to this they should be trimmed. Remove almost the whole of the old and coarse roots, as those will decay after a few years. Also trim off all of the Brier-stem which may be above a crooked shoulder or knot. The Brier is no use above these, and there is no object in leaving the stem too long. Some growers trim off the shoots in the autumn after being huddled, but my practice is to wait until spring. The year after being huddled they will produce a good head of Rose growth, and may be lifted and transferred to any desired quarters the same autumn. At the second planting it is well not to plant quite so deep as I have recommended for the unbudged

1803.—Climbing Roses.—The six hardiest climbers I can recommend you for the north-west wall are: Gloire de Dijon, Cheahunt Hybrid, L'Idéal, Mme. Alfred Carrière, Mme. Bérard, and Kaierin Friederich. Six suitable for a south-east wall: Reine M. Henriette, Bouquet d'Or, Belle Lyonnaise, Climbing Perle des Jardins, Emilie Dupuy, and William Allen Richardson. A dozen good hardy bush Teas, giving a variety of colour, would be: Homère, Marie Van Houtte, Souvenir de S. A. Prince, Mme. Lambert, Dr. Grill, Trompée de Pernet Père, Ernest Metz, Anna Ollivier, Sunset, Mme. Faloot, Mme. des Tartes, and Catherine Mermot. Six good Hybrid Teas for your purpose would be found in: Grace Darling, Caroline Testont, Anguotine Guinisseau, Viscountess Folkestone, Camene, and Gnetave Regia.—P. U.

—North-west is not a good aspect for the better forms of Roses, but such as Gloire de Dijon, Mme. Planter, and Sir Joseph Paxton will thrive, only they may be later in coming into bloom. To these you may add Aimée Vibert, Magna Charta, H.P., and Climbing Victor Verdier; the last-mentioned is dark red in colour and delightfully fragrant. For the south-east aspect my selection would be W. A. Richardson, La Marque, Cheahunt Hybrid, Réve d'Or, Reine Marie Henriette, and L'Idéal. Twelve good hardy Teas will be found in Mme. Lambert, Marie Van Houtte, Mme. Faloot, Mme. Engène Verdier, Countess of Folkestone, Grace Darling, The Bride, Anna Ollivier, Perle des Jardins, Comtesse de Nadailac, Princess of Wales, and Catherine Mermot.—J. C. C.

GARDEN WORK.

Conservatory.

During damp weather a little fire will be necessary, even in mild weather, to dispel damp. The modern Chrysanthemum, with the large blooms, will not bear a close atmosphere, which at this season will always be more or less damp. When damp settles upon one of these large blooms it is speedily spoiled. Dead foliage must be removed very frequently, and cleanliness everywhere is most important. If hard-wooded plants are kept in the conservatory, arrange them at the cool end of the house. Heaths in bloom will require careful watering. A daily look over should be given, though the plants may not require water every day. If mildew makes its appearance dress with black sulphur immediately. Insects of all sorts must be promptly dealt with either by dipping or fumigation. I prefer dipping in an insecticide bath where only a few plants are infested, but when a house has been given over to insects for some time, fumigation must be resorted to. A well-ventilated, well-arranged conservatory, with its varied odours of flowers, and leafage, and brilliant blossoms will be a cheering sight now; but to keep all things moving on in a satisfactory manner requires knowledge and care. For the most part the potting for this season is over, but this is a good time to lay in a stock of potting soils. Good loam is a necessity to the plant grower, but it is sometimes difficult to get. Old manure reduced almost to humus is difficult to mix with loam for many plants. Good peat and clean sand is required for hard-wooded plants and Orchids. These different matters should be laid up in readiness now. When other materials are not so pressing, the gardener, if he does all that is required of him, has no leisure. It will soon be time to begin taking cuttings of Chrysanthemums for next year. I sometimes think, in the case of most kinds, the early cuttings do not always produce the best flowers. I have to-day been looking at two plants of Chrysanthemum Ayalachino. One was struck second week in December, and the other nearly a month later. There is no difference in the flowers, and the thought arises, why strike so early? Where now has a limited number of plants it may be desirable to begin taking cuttings early, but it is very important that none but strong, vigorous cuttings are taken. I would rather wait a time for cuttings, if I could get stronger stuff by doing so. Cinerarias in small pots must have liquid manure, and 5-inch pots would be considered small for Cinerarias.

Stove.

Bulbous and tuberous-rooted plants will, for the most part, now be going to rest. Such things as Gloxinias, Calceolarias, and Abohmias should be laid up their sides where they will not get damp. I have kept all these under the stage in a coolish greenhouse. The rest is more perfect, and early in the spring they can be returned to the stove again, and they will break all the better for the rest. Early-sown Orchids, including Calceolarias, will be coming on now. I maintain a steady temperature of 65 degs at night will be quite high enough for general collections of stove plants, and where a temperature of 70 degs. is kept up, that last 5 degs. of heat costs a good deal at the present price of fuel to keep it going. Cuttings of India-rubbers, Crotons, and other foliage plants will strike now in bottom-bush, and it is as well, where more stock is required, to strike these things now to relieve the work of the propagator in the spring. Lose no opportunity of dealing heavy blows at mealy-bug and other insects.

Forcing house.

Forced flowers will be in request now for cutting, and the Lily of the Valley, if the crowns are well ripened, and

the true Berlin variety may be started now; but unless the crowns are good, it is of no use starting them. It is not every grower of Lily crowns that supply the best crowns. One may send in an order and get quite an inferior sample. They may appear plump, but not being well matured, they will not bear forcing. The only chance one has is to deal with a first-class grower. I have a number of pots of Lillies which were forced last year, and they are now well established with well-ripened crowns. These are on first batch, and will not disappoint, as I know from previous experience. Spirea should all be potted, but there is not much gained by piling in heat too early, as the more roots they are given the stronger they will start. This is true of all forcing. There is a right and a wrong time for the beginning of forcing any subject, and, to a great extent, that time is influenced by the preparation given to the material and previous years. It may be said anyone can buy plants prepared for forcing, but all will not turn out alike, even when so prepared; so much depends upon the proper ripening of the buds.

Ferns under Glass.

There is a strong reserve of decorative force in a large house full of Palms and Ferns. The True Ferns are grand things for furnishing, so also are a few of the best Palms, such as the Kentia and Scaevola, but, unfortunately, now requires a large house to keep them in. No one recommends potting either Palms or Ferns at this season. Still, if a plant is pinched up in a small pot, I should not hesitate about shifting it on. Where there is a genial temperature, and the wickler of the water-pot is an old hand, it matters little when the potting is done. Ferns must always be kept moist at the roots. If permitted to get dry, the fronds die, and the plants fail to begin afresh, and make new growth. Cytosium falconum is one of the hardiest Ferns and is largely grown for market. I don't think it matters much when Fern spores are sown. If there is a genial temperature now in a shady part of the house, where the atmosphere is confined.

Window Gardening.

Bulbs which were started early will now be making growth, and should be carefully looked to the light, sufficient water being taken to keep all the soil moist. Freesias are growing fast, and will require support, and should occupy a light position. Hyealinta, Tulipa, Narcissus, including the Chinese Sacred Lily, are coming on. This Lily, as it is termed, will grow just as well in earth as in water. I grew a number last year potted like other Narcissus bulbs, and they flowered very well. Foliage plants, India-rubbers, Palms, Aspidistras, Aralias, and Drocasas will derive much benefit from a weekly sponging with soap and water.

Outdoor Garden.

At the time of writing (October 22nd) Dahlias are fuller of blossoms than they have been all the season, and the foliage has never been brighter or fresher. Very pretty and useful are the Pompon variety, both in the garden and also in a pot; but the frost that disfigures tender things must be near, and then the roots must be lifted, dried, and stored in a cool place, as my Dahlias, Tuberosa Begonias, and Genas in cool-houses, packed close on the border, where the frost is only just kept out. I don't think it is quite the right thing to peek totem away in close, stuffy places where the damp will injure them. If Gladioli have not been lifted they should be taken up now, the top cut off close to the bulb, and the latter placed in a dry room to complete the ripening. If we look through the Gladioli grounds of a large grower and exhibit a few days ago, and he is lifting some of his choice seedlings to avoid being any of the small spaw or bulbets, which form round the base of the bulbs. Everybody who grows Gladioli should save seeds and raise seedlings. In good, suitable soil they are better sown to the open in drills in the same way that the small spaw are sown which are taken from the present season's bulbs. Even the most successful growers have the disappointment of seeing bulbets, but where the practice of raising seedlings is followed, and the plants are regularly carried out they will always be something new and interesting coming on. The weather is now very suitable for planting operations. Both evergreen and deciduous things will move safely now. Torf also may be laid.

Fruit Garden.

Hardy fruit culture is annually assuming larger proportions. There is, in spite of the low price realised this season a future before Apples and Gooseberries. Even in this season of plenty those who have storing room will not do so badly with the Blenheim and other good-keeping sorts. It will grow. Free-bearing trees will require manure this season, but it should not be raked or fresh, especially if laid near the roots. In planting fruits, or, indeed, anything else, the manure should never be placed in actual contact with the roots. Have it near where they can reach it when they require assistance. Spiced weather does not potting or planting of dwarf fruit-bearing trees. Fruit may also begin now, as the leaves will soon be down on Pear-walls, though the absence of frost this autumn has kept the leaves longer on the trees. Many Pear-trees are too much crowded with wood, and should be thinned. I have seen good results follow the removal of some of the old branches, so as to give more space to those left. Making two leaves grow where there is only space for one is not good culture. The outcry against pruning has pretty well found its level. Common sense generally comes to the front in time. And the non-pruner and the pruner who goes to extremes with the knife will find their occupation gone. New plantations of Raspberries may be made now. Those who cling to the old plantations will lose the benefit to be obtained from planting the new and improved kinds, such as Superlative, Hornet, and Norwich Wonder. Deep trenching and liberal manure is a necessary preparation for Raspberries.

Vegetable Garden.

Box and other edgings may be replanted now. I am not much in favour of Box for vegetable gardens. It requires care to keep it in good condition, and it forms a famous hiding place for slugs and other insects. Blue clove are much nearer and better, and not much more expensive. There will be accumulation of vegetable refuse in all directions now, and everything should be utilised as manure. Where trenching is being done weeds and other plants which decay quickly may be trampled in and

easily got rid of. Where much pruning has to be done the outtings may be used to start a fire in the rubbish-yard, and as soon as the outtings are fairly kindled commence with the drier of the waste materials, and follow this up by adding heavier, greener rubbish until a large smoking heap has been got together, that will be a valuable fertilizer in the spring for top-dressing Celery beds, Carrots, and other crops, as soon as the leaves have died down on Beakale and Rhubarb preparations may be made for forcing, either by lifting the roots and planting thickly to a new position where heat can be applied, or the crowns may be covered with pots, and surrounded with a mixture of leaves and manure in sufficient bulk to raise a temperature of 60 degs or so. One of the best French Beans for forcing is the Ne Plus Ultra. These may be planted in quantity now in 5-inch or 7-inch pots, and placed in warm-houses near the glass. It is best in planting Beans to work half all the pots with soil, the other space to be filled up when the Beans are up. Five Rows in each pot are quite enough. E. HODDY.

Work in the Town Garden.

Frost will keep off, and, refreshed by the recent heavy but not unduly cold rains, gardens everywhere, both in town and country, are looking brighter and better now than at any other period of the year. With me the Michaelmas Daisies are not quite so much as usual, owing, no doubt, to the long and most trying drought; and "Geraniums" and other tender bedders are, of course, getting the by now, but the Tuberosa Begonias are quite a feature—fuller of bloom, larger, brighter, and altogether better than ever. Those invaluable plants, the White (and Yellow) Snapdragons, too, are still in full bloom, and afford quantities of flowers for cutting. In heat or cold, wet or dry, the plants have got on perfectly throughout the whole of the season. By the time these lines appear in print most if not all of the leaves will be off the trees, and the garden should consequently receive the usual autumnal cleaning up. It is almost useless to sweep up much, or frequently, until the trees are bare; but a thorough clearance should be made now, the borders be lightly forked over (except where newly planted with bulbs or the like), Grass and edgings out for the last time, and the well finally weeded, or cleaned in some way, and the walls washed. The bedding plants (Begonias and Dahlias only excepted) should be lifted and housed now, and no time should be lost in finishing the planting of Hyealinta, Tulipa, Snowdrops, Crocuses, and other hardy bulbs. Cinerarias also ought to be planted without farther delay, though in very smoky districts it is advisable to keep part of the stock of the choice kinds under glass, and plant out in the early spring. These plants are making wonderful progress now; even where they almost succumbed to the drought they are now growing luxuriantly again, and quite late layers are mostly ready to be transplanted. Remember always to plant these, as well as Pinks, and, indeed, the whole of the Dianthus tribe, as firmly as possible, and to mix some burnt earth, mortar-rubbish, or both, in the soil. Do not cover or mulch the plants or beds in any way during the winter. It is the greatest mistake imaginable. A little fresh coal-ash round each plant is the least mistake, but even that is not good enough. The bedding plants (Chrysanthemums under glass very freely in each weather as this, but use a little warmth in the pipes at night, just to dry up damp and keep the air in gentle motion. On the whole, the plants are looking remarkably well now, and lovers of this popular flower will enjoy many a treat, not only among their own collection, but by visiting the various exhibitions that are now so numerous, not only in and near London, but in most parts of the country also. H. C. R.

THE GOMING WEEK'S WORK.

Extracts from a garden diary from the 4th to November 11th.

Looked over Grapes in late houses to remove berries showing any tendency to decay, but as the house is always kept in good repair very little damp finds entrance into the houses. Inside potting is very important, in late vinerias especially. I generally paint these houses inside every two years, and at this season when moisture is rather high, the paint is not so good as in the summer, it is either bird down or removed. In many vinerias the Vines are trained too near the glass. Vines should never be trained nearer than 16 inches—18 inches will be better—so that there may be a clear space between the foliage and the glass. Cleaned all foliage from Peach-houses. The wood is quite ripe, and to leave fall on the merest touch. I want the house for Chrysanthemums. Like most of our friends and neighbours, we have caught the Chrysanthemum contagion, and when one is badly hit with this disease there is never room enough to house all the plants. But though an all-round man may rail at so much fuss being made of no case of plants, there is no gatusaying that Chrysanthemums are the flowers to brighten up the garden in autumn and early winter, and with plenty of late kinds there will be abundance of flowers for cutting till middle of January, or perhaps later, where properly looked after, and with cool-houses to keep them back. Beeswinged conservatory. Of course, the main feature now are Chrysanthemums, but to addition there are groups of Bourdarias, Chinese Primulas, and Primula obconica. Early Cinerarias are just showing colour, and Roman Hyealinta are ready to move up. A group of the semi-double "Geranium" F. V. Esopall is very bright. Those small groups are placed on the outskirts of the Chrysanthemums, and are surrounded in some instances, blended with Ferns. A batch of spring-down Tuberosa Begonias in 5-inch pots still make a good show, and show to a very marked manner how vastly the Tuberosa Begonias have been improved within the last few years. Pruned back the last of the summer-flowering creepers. We woot all too light now. Very bright just now in the wall covered with Ivy-leaved "Geraniums," and the flowers are exceedingly well for cutting. Finished earthing-up Celery. Two Mignonette sown earlier in August, and kept in a cold pit, freely ventilated, has been planted and opened out, so as not to draw up by crowding. A light position near the glass and plenty of ventilation is the best for Mignonette in winter. The soil in which

In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than in the south, and in the north, the results.

Mignonette is sown should be rammed as firm as possible. This is with us a main point in the culture; and the soil should be chiefly composed of rather heavy loam. Sifted or Peas-sand. The early blooming varieties have been in the flowering pots for some time. Dipped Cinerarias in a solution of Sunlight Soap. This, about 2oz. to the gallon, makes an excellent insecticide, and it is very cheap. It is used for dipping any plants which are of a manageable size. It is much cheaper than fumigating for clearing off aphides, thrips, &c. Moved Autumn Giant Cauliflowers, turning in to a cold pit. Elkherto the frost has done no harm, but we are not safe now. Busy pruning Gooseberries and other fruit-trees and bushes. I like to get this work done as early as possible, as it permits of the ground being mounded and turned up for the winter. Made a new plantation of Raspberries, selecting vigorous canes only. It is a mistake to leave Raspberries too long on the same land, if fine fruits are required.

STATICES, TENDER AND HARDY.

FOR greenhouse and conservatory decoration Staticeae are invaluable, inasmuch as they bloom freely, remain in good condition for a long time, and are so easily cultivated that young plants of them may be grown quickly into fine specimens. Last year's growth made into cuttings early in the season (spring) may be potted singly in thumb-pots in a mixture of leaf-soil and sand, and placed in a close atmosphere in a top and bottom-heat of 65 degs., where they will root in a short time. Young plants may also be obtained by making a notch on the hard stems of old plants about 2 inches below the undermost leaves, and tying a small handful of Moss round the incision, which must be kept constantly moist, in order to induce young roots to be emitted. As soon as these make their appearance the stem should be severed from the parent plant just underneath the Moss, and it should be potted and treated for a short time as if it were a cutting. The propagation of Staticeae is the most difficult part of their culture; but, by following either of the methods just referred to, young plants may be had in abundance. They should, in all cases, be moved out of their cutting-pots before the roots become matted; and at this, and all subsequent shifts, the compost used should consist of loam, leaf-mould, peat, or well-rotted manure, and plenty of sharp silver-sand. They may be shifted on when necessary until a 12-inch or 14-inch pot is employed for them, but it will take a good many years before that size is needed. They never require more than a greenhouse temperature at any time throughout the year; and if not in bloom they may be placed out-of-doors during the hottest summer months. Plants which have bloomed in summer and autumn should be kept somewhat dry at the root during winter, and, when repotted in spring, they may be placed in a gentle heat until fresh growth is somewhat advanced. Staticeae often bloom even in 4-inch pots, and by pinching their time of flowering may be deferred if a succession of bloom be desired. They blossom naturally from July until November; but by pinching they may be had much later even than that. The indoor varieties of them are not very numerous, and among them the best is *S. profusa*; it is not so robust as some of the others, but it forms a compact and beautiful plant, very suitable either for purposes of exhibition or for decoration, and it blooms liberally in winter. The flowers, which are bluish-purple and white, are everlasting; and, when out, may be mixed with *Immortelles*. Among other good kinds may be mentioned *S. Hoffordii*, *S. arborea*, *S. brassicaefolia*, *S. imbricata*, and *S. macroptera*, but I like *S. profusa* best. Among hardy sorts, which bloom principally in June, July, August, and September, are many with flowers finely diversified in colour, and in height they range from 4 inches to 16 inches. The best for border culture are *S. aequalis* (blue), *S. incana alba* (white), *S. bellidifolia* (rose), *S. auriculifolia* (red), *S. nana* (blue), and

S. bellidifolia (also blue). The last three are very dwarf, and well adapted for rock-work. All of them bloom profusely and grow freely in common garden soil. The dwarf varieties may be increased in spring by division, and the taller ones by means of cuttings struck in a cold frame. A good type of a hardy Staticeae is here illustrated.

4794. — *Elythrina Crista-galli*. — "T. A. F." asks where this can be obtained, also how to cultivate it? Any good florist or nurseryman will supply it. The "Coral-plant," as this is often called, was introduced from Brazil in 1771, and is quite hardy in well-drained soils if protected from prolonged wet and severe frosts. Ashes or Cocoa-nut-fibre are good to lay over the crowns. Cuttings may be struck similar to Dahlias; but it is more necessary to have a small portion of the old crown attached. When obtained from cuttings plants of a more even height can be secured. It is an excellent plant in a moist greenhouse temperature, and may be treated as follows: When the flowers are over for the autumn, cut them down, and stand



A good hardy Staticeae.

in a pit or cool frame until the end of November, when repot and introduce into gentle heat. This will secure a crop of bloom in March. After this cut them back to within four or five eyes, start in a brisk heat, and thus obtain a second crop of bloom in July or August. This crop may be realised out-of-doors if desired.—P. U.

— This plant was more grown forty years ago than it is now. I remember seeing beds of it in the open air then. In the autumn, when the frost destroyed the flowers, the stems were cut down, the roots lifted and stored away under the greenhouse stage, where they remained dormant all winter. It makes a very useful conservatory plant, but it is still better in the open air. Anyone who can grow and flower a *Fuchsia* or "Gerenium" will do this easily. It is not much grown now, but it may be obtained from any good nursery, especially those having connections with Continental nurseries.—E. H.

— In very favoured spots, such as against a warm wall, and with protection at the roots in winter, this fine plant will live out; but, as a rule, it is a summer flower only, planted out to give beauty to summer bedding. I saw it

very fine this year in Battersea-park, the curious beak-like scarlet flowers having a very quaint aspect. It is much the better plan to lift the plants and keep under cover during the winter. —C. T.

FRUIT.

STORING APPLES.

IT is many years since such an abundant crop of Apples was produced in this country as that now nearly matured, but I am afraid that a great percentage of this useful fruit will be wasted for lack of care in storing for future use, as unfortunately the system of living from hand to month has spread from towns to rural places, and there is little care bestowed on storing, for if anyone advocates the thing they are met with the remark that it does not pay, and that there is sure to be plenty of imported fruit as soon as the home-grown ones are finished, which is doubtless true enough; but certainly home growers are helping the foreigner to get a better price than he ought to get, and home growers are certainly not so often blessed with abundant crops as to be able to neglect to make the most of it when it does come. Early Apples, such as Lord Suffield and others of the Codlin type, are useless for storing, and they must be sold for what they will fetch, which has been a very low price indeed during the past few weeks, but the thing which keeps down the price lower than it really ought to be is the fact that hundreds of bushels of kinds that would be in season at Christmas, and realise a far better price, are gathered and sent to market principally by people who do not appear to know the difference between late and early Apples. Premature gathering is always more or less practised, but this season there is more than usual difficulty in fixing on the right time for gathering, as, owing to the protracted drought, the fruit has fallen from the trees in showers long before the main crop was fit for storing, as, if gathered before they are fully matured, the fruit either shrivels or rots; therefore it is safer to let some fall and use the mass best you can than to risk the whole crop by premature gathering. I have lately seen any quantity of Blenheim Orange, Deux Ans, Wellingtons, and other good keeping Apples in market being sold for about one half what they will be worth at Christmas, and I would strongly urge all who take the trouble to grow good Apples like these to take a little extra pains this year in storing them, for no matter how plentiful or cheap they may be now, depend upon it, the case will be different when the dark days of winter are upon us. As regards the best mode of storing, I do not think that the plan of spreading the fruit out on fruit-room shelves in single layers is either necessary or desirable, for if the fruit is sound and carefully gathered, they may be put together in far less space in barrels or boxes, and keep far better, with very little loss, and my own impression is that late Apples, such as Lane's Prince Albert, require planting more extensively than they have been, for we have such a number of early sorts that if we only grow a tree or two of each, we are almost certain to get overstocked with fruit in September, but any that will keep three months there is little fear of being overdone with them. Old trees, as a rule, are carrying heavy crops this year; but fine samples of clear fruit can only be obtained from healthy young trees, and I would strongly urge all who have trees that produce unsatisfactory crops to grub them up and plant young trees.

JAMES GROOM, Gosport.

A useful Apple.—Apples are plentiful everywhere this year, but never before have I seen trees of any variety so liberally "breaking down" with fruit as are those of the Forge, an old and favourite Sussex Apple, in this neighbourhood. There was an abundance of bloom on Apples of all kinds; but this variety seems to have set better than any other, and in most instances the trees are (or rather were, for the crop is for the most part gathered now) loaded with fruit from the base to point of every branch. The fruit is naturally somewhat small, and in plentiful season, such as this, must be well thinned if handsome specimens are wanted; but both the shape and colour (a deep greenish-

yellow, heavily marked with fine lines of a rich red) leave nothing to be desired. It makes the most delicious tarts and preserves, and when thoroughly ripe is no means to be despised as a dessert fruit, while a noteworthy peculiarity is the very powerful odour exhaled by Apples of this kind when fully ripe. Lastly, the tree is of a neat and compact habit of growth, and seldom misses a fair crop. The trees thrive unusually well on the cold and heavy clay loam that prevails in this district, and when in bloom it is one of the most attractive of all Apples. Unfortunately, most of the fruit here was spoiled by a severe hailstorm on the 8th inst. —B. C. R.

4754.—Young Vines.—Pruning or cutting back at once is the true secret of not only the coming season's crop, but also of what is of far greater import—to wit, the foundation of a good Vine, a sturdy, vigorous stem—without which Grapes are only second class. Too often in such cases as noted by the querist, because a Vine has a strong cane or rod it is left. Result—a few strong buds breaking at the upper portion of the rod, while the bottom, if not bare, is too weak to assist the due growth of the Vine. Grapes can be had, and good, from the lower buds, allowing, of course, for the watering not to splash, &c. No doubt, if, say, there are five good eyes a foot from the base of stem, there would be ample. In some cases I have cut down to three; this gives an equal number of laterals each side, and one for the leader. —STEPHEN CASTLE.

4728.—Compost for Vines.—“Vineyard,” with his high-sounding cognomen, puts a very pertinent yet important question—in fact, this is the secret of not only the Vine but Grapes growing also. A secret is too often pretended in the preparation of soil, &c. It must be suitable, but not half such a complicated affair as is generally advised. The real compost for Vine-planting cannot be too simple, no manure in any form being required. Any loam approaching to turf, mixed with ordinary road-sidings, with the latter a fair amount of scrapings, can be used. Such mixture, if thrown together for a month, will be all that is wanted for establishing a Vine. Drainage must be good. For ordinary top-dressings a richer material can be used—top-dressings being intended to feed not only the old roots, but also to bring roots nearer the surface. —STEPHEN CASTLE.

4783.—Grapes not colouring.—“Anxiano” will not be alone in respect to the faulty colouring of Gros Colmar, the most popular of market or shop Grapes. True, with such a magnificent summer as we have had, with still a fine autumn, all Colmars should be better in this respect than usual. A fair crop for weight, other conditions being favourable, should colour them well. Fire-heat is always a desirable factor—in fact, none of my Gros Colmars are without fire from the time of starting till the Grapes are out. Ventilate always at the top—even a little at night—in front, from daylight till dark, according to the weather, closing entirely in cold or wet nights. A sprinkle of soot on the border inside will be of benefit. Keep foliage intact—the main leaves—but reduce sub-laterals, to give light to the bunches, but not for the sun to shine direct on the fruit. —STEPHEN CASTLE.

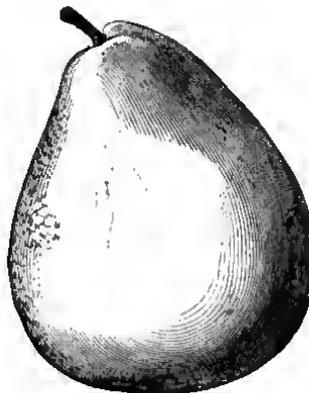
4771.—Grapes for a cold-house.—Black Alicante cannot be recommended for a cold-house. Certain it is that the fruit will colour—probably better than our universal favourite Hambro—but when it comes to the eating it is disappointing. Fire-heat will bring out the true quality of this, besides making it safe for keeping. Any Grapes grown in cold-houses are most difficult to keep sound any length of time after ripening. Trencham Black on no account must be thought of. Superior as it is for flavour compared with the Hambro, it is far more difficult to grow. Having had this variety in hand for many years I well know its peculiarities. In such a season as the past cold-houses have finished their crop extra well, and the wood is also better ripened, so that the success of the next year's crop is secured. —STEPHEN CASTLE.

4808.—Treatment of a Fig tree.—The roots of the Fig tree are too deep. Lift them, and work in some old mortar or builders' rubbish beneath, and lay a few loads of fresh loamy soil on this foundation for the roots to work in. Afterwards, if the growth is thinned in summer,

so as to get the wood ripened, and protection is given in winter, there will be plenty of good Figs. —E. H.

PROFITABLE PEARS.

The season for planting now being at hand, I think it well to call the attention of anyone who may be now entering upon the possession of or management of a garden to look well to the state of the fruit-trees, and I think that Pears claim more attention than has hitherto been given them. I allude especially to their culture on walls. That heavy crop of good fruit are to be met with on standard, pyramid, and bush-trees I readily admit; but these are few and far between, and by far the cleanest and most valuable Pears are to be had from wall-trees. Given shelter and warmth, no matter what the aspect may be, better or more saleable fruit is invariably produced. In years of plenty the best Pears always sell readily, and at good prices, and there is no likelihood of a glut ever occurring. The extensive planting of Pear-trees may, therefore, be safely advised with a view to future profits. At first sight it may appear somewhat useless to recommend planting Pear-trees extensively, especially where the walls are already partially furnished with fruit-trees of various kinds; but I am of opinion that at least one-third of the wall space, including ends of stables, outhouses, and many dwelling-houses, is far from being profitably utilised, and that in very many private gardens room could be found for numerous



Pear "Bourré Bachelier."

young trees. For instance, dessert and cooking Cherries other than Morello rarely, if ever, pay for cultivation against walls, it being possible to buy more fruit with the money saved in netting in one season than can be grown in three years. It would be much better to cut out gradually or otherwise many of the Cherries and replace with Pears. It is also unwise to grow many common Plums against walls that could be turned to a much better account with Pears. That Plums are needed in most establishments there is no denying, but as a rule they do well in the open, and are of far too perishable a nature to be given very much space. I also fail to see why Pears are not quite as ornamental as Wistarias and other strong climbers to be seen against numerous house fronts, and they certainly present a far more tidy appearance than do half-storved Rosas, Loniceras, and such like. Ivy and Virginian Creepers, beautiful as the latter may be at the present time, monopolise far too much wall space, and Pears would grow and cover the walls if not so quickly, yet certainly quite as effectively. Having tried to make out a strong case in favour of Pears, it will not be out of place to further discuss what

VARIETIES might be planted advantageously. Supposing the bulk of the fruit is, when ripe, to be sold, extra regard must be paid to size, colour, and appearance generally, flavour being of secondary importance. In some few instances, however, it is possible to combine a variety of good qualities, and varieties possessing these are to be most commended. Such early sorts as Doyenné d'Été and Citron des Pannes are not worthy of wall space, but if there is a high wall to be covered, Doyenné may be planted. This season Williams' Bon

Chrétien against walls proved very profitable, the standards and bush trees failing to bear any fruit. Space might, therefore, be found for two or three trees of this old favorite. Bourré d'Amanlis very frequently succeeds admirably as a pyramid or standard, but produces finer fruit on wall-trees, and the same may be said of Bourré Superfin. Pitmasdon Duchess also bears well as a pyramid or standard, but the fruit nearly always presents a scratched appearance when ripe, and is not nearly so fine as that obtained from wall-trees. This extra large variety is very profitable, and the quality is not to be despised. Doyenné Boussoche is a sure bearer, and the fruits are extra large and of fine appearance, but, like those of nearly all the preceding, they keep badly. Nouveau Poiteau with me rarely fails, and it is a useful variety, keeping fairly well after it is ripe. Comte de Lamy, though not large, is really a very profitable Pear. It is a heavy cropper, keeps fairly well, and is both attractive in appearance and good in quality. Bourré Clairgean, as far as its quality is concerned, is second-rate, but those who grow for the market ought to plant it, as it is a sure bearer, and the fruits are large, brightly coloured, and ripen early in November. Louise Bonne of Jersey is one of the best for the market, good samples being readily bought up. It is a most reliable variety under any form of training, but the wall-trees produce by far the best fruit. Duchesse d'Angoulême I would also find room for, this being a sure bearer and the fruit large, keeping fairly well. Marie Louise is simply indispensable, and this is one of the most valuable of all Pears. Room ought to be found for several trees of both this and Doyenné du Comice, both being reliable bearers, while good samples of the latter fetch the highest prices in the markets. Bourré Boche-lie (here figured) is a fine serviceable variety, and Huyshé's Prince Consort rarely fails to do well. Bourré Diel proves exceptionally profitable, large old trees seldom failing to bear heavy crops of good-sized fruit, and which, keeping till late in November, generally sell very well. It is the late variety that really pay best, even the Vicar of Winkfield proving more profitable than choice early sorts. Josephine de Malines, Winter Nelis, and Bourré d'Arenberg are somewhat small for market, but they are well worthy of a trial. The latter remark applies to Gerou Morceau (which spelt badly), Olivier de Serree, Bourré Rance, Bergamotte d'Espereu, and Ne Plus Meuris. W.

4792.—Fruit-trees for a north-east wall.—I should not like to plant Pears on a wall with this aspect, not that they would not fruit so freely as on any other, but the flavour would be indifferent. Such culinary Plums as Victoria, Magnum Bonum, and Coe's Golden Drop would do very well, and so would Morello Cherries. Such Apples as Lord Suffield and Lord Grosvenor would bear freely in such an aspect, but they would be later in ripening than those on a more sunny aspect. —J. C. C.

I should not plant Pears on a north-east wall. Any Pear that will bear good fruit on such an aspect will do better away from the wall altogether. The difficulty I have found with Pears on a north or north-east aspect is to get flavour, and without flavour Pears are useless. Kitchen Plums and Cherries will do well. Victoria, Pond's Seedling, Goliath, Prince Englebert, the Czar, and White Magnum Bonum. Morello Cherries are always a success, and the May Duke usually does well, and it is an advantage to have a May Duke Cherry-tree on a north wall to come in after those on better aspects. —E. H.

4797.—Black Currants.—These enlarged and apparently precocious buds never come to anything, and are, indeed, the work of a very troublesome insect known as Phytomyza ribis. If badly affected the best thing you can do is to cut out all the bushes right down to mere stumps at once, and let them make an entirely fresh growth next season. All the branches should be burnt, and the stumps be syringed with a solution of Paris Green. If left alone the disease will ruin the entire plantation. —B. C. R.

4788.—Pears on a clay soil.—What are generally known as market Pears, such as Bishop's Thumb, Windsor, and Bourré Giffard, will probably do well on a clay soil; but I should

not like to risk too many. Apples grown in the form of large spreading bushes and grafted on the Crab-stock would be a safer investment. Annie Elizabeth is an Apple that does exceedingly well on a clay soil, and the large and handsome fruit keeps well until the months of May and June.—J. C. C.

The hardest kinds of Pears will succeed on a clay soil; but it will not be wise to plant any of the delicate varieties which are liable to crack and mildew. A good deal depends upon



A hybrid Narcissus.

the climate of the district. I have seen good Pears grown on the Sussex clay, where there was a fair depth of soil over the clay. The land may probably require draining. The Quince usually does well on clay soil, and although I should not plant Pears on the Quince largely anywhere without first trying them, still, it is worth while trying a few trees of some of the hardiest sorts. Hessel or Hazel is a good market Pear, and bears freely on clay soils. Lammas also does well, and usually carries a paying crop. I have known the crop of one tree fetch £5; but the tree was a very large one, and covered a very large space, and was a very handsome object when in bloom. Beurré de Capiaumont, though an inferior Pear, is very free-bearing. Fertility in the same way is a better Pear. Jargonelle in a good climate may succeed, as may also Williams' Bon Chrétien. Among the better class Pears which may be planted in a good climate, are Louise Bonne de Jersey, Marie Louise, Fondante d'Automne, Beurré d'Amanlis, and Pitmaison Duchesse. If the climate is right the soil can be improved. The chief thing to avoid is deep planting. I would rather plant only a few inches deep, and raise a mound of good soil over the roots. Success will depend upon the way in which the planting is done.—E. H.

4814.—**Treatment of Vines.**—When Vines do not bear fruit there must be something very wrong in their management. Probably the roots are out of condition, and if so manure will not help them. Try and find the roots and see what state they are in, and if in a bad condition either lift and make a fresh border for them or else grub them out and plant young Vines. Try and find a good gardener in your neighbourhood to look at them and tell you what is best to be done. No useful remedy can be suggested until their real condition is ascertained. Blood is not a bad manure in moderation for healthy Vines, but the roots of old Vines are often far away from the house in some cold, wet soil, from which they can derive no energy.—E. H.

From the information you send it is very doubtful if your Vines are not too old to be restored to a fruitful condition. If they are not, now is the time to carefully lift the roots and replant them in a new-made border. It is very clear that no sort of manuring will do any good. The case is too bad for that. The roots are in a bad way, and anything short of replacing the Vines with young ones, or lifting the roots and making a new border, will be any use. You had better get someone to advise you who understands Vines, and can see them as they are.—J. C. C.

4813.—**Growing for market.**—A good many are trying to solve the same problem you are at work upon. Some I know are making Tree-Carnations pay, growing only a few kinds. One of the most profitable being Miss Jolie. This, and a good white and good scarlet, will meet all requirements so far as out flowers are

concerned. Winter Cheer will probably make a good winter flower, and La Belle is a good free blooming white—though small, it is very free. Many growers fill up their Tomato-houses with Chrysanthemums, and something can be done with double Zonal "Geraniums," such as F. V. Raspail and others. French Beans will not succeed in so low a temperature, though Mushrooms and Rhubarb and Lettuces might.—E. H.

OUTDOOR PLANTS.

A HYBRID NARCISUS.

AMONG the most graceful and delicate of all Narcissus are the drooping N. triandrus of Spain and Portugal, and the little White Hoop-petticoat of Algeria. These two species can be cross-fertilised without difficulty, and the engraving represents hybrids raised by myself from seed of the Hoop-petticoat fertilised by pollen of N. triandrus. Both Prof. Michael Foster and myself have flowered seedlings the other way of the cross, and the flowers are almost identical with those now shown. G. H. E.

THE BRONZE-LEAF OF JAPAN (RODGERSIA PODOPHYLLA).

THIS splendid plant is really a giant-leaved Saxifrage, and a native of Japan. When well grown in a deep rich border of peat and leaf-mould and duly sheltered from harsh winds, it forms one of the finest of all the exotica plants which are perfectly hardy in our northern climate. Its five great partite leaves each vary from 2 feet to 3 feet in diameter, and are of a rich ruddy bronzy tint with the peculiar rugose or shagreen-leather-like appearance peculiar to the unfolding leaves of the Horse-Chestnut in early spring. Such leaves, borne aloft on cylindrical stalks 2 feet to 3 feet in height, and the plants grouped naturally together as shown in our engraving, have a tropical-like aspect, especially when judiciously planted near to more slender grassy-leaved vegetation for the sake of contrast. The group now figured nestled at the foot of a colony of Bamboos near an old tank or well, and the result was a very happy one. Although grown as, and indeed most remarkable as a foliage plant, yet as seen at their best the plumose spikes of white Spiræa-like flowers are really very beautiful. The plant has long had a history and a name in Japanese gardens, whence it was introduced to the United States by Captain Rodgers of the American Navy, after whom it was named. The native name in Japan is Yagurumaso, and a very characteristic wood-cut of it is given in Vol. VIII., tab. 27, of the celebrated work on the herbaceous plants of Japan, originally written by Pinouma Yokoussai, and republished by the editor, Tanaka Yosiwo, in 1874. This interesting work in twenty volumes contains woodcut figures with Latin names of nearly all the herbaceous perennials and annuals, wild or cultivated, in the gardens of Japan, and is well worth the perusal of those interested in the plants of that country. The illustration is from a photograph kindly sent by Mr. Greenwood Pim. It represents a specimen at least 5 feet in diameter which was growing in Mrs. Lawronson's garden at Sutton, near Howth, Co. Dublin. F. W. B.

4806.—**Convolvulus minor.**—This ought to do well, but no doubt your garden suits the Tropæolums better. Try next year, if you have not already got, the Canary Creeper, T. canariense. It is very beautiful until quite late in the year, and grows freely, smothered with yellow flowers against the light-green leafage. In moist spots and a little shade, the Flame-flower (T. speciosum) might be established, but it is not a town flower, although easily grown in country places. The finest of the tall-growing annual Tropæolums, forms of T. Lobbianum, are of a grey-whitish colour, cardinal, scarlet; Triomphe de Gand, orange-scarlet and brilliant-scarlet, centre crimson. There is no question that Tropæolums are good plants for suburban gardens. They bear smoke and other afflictions better than most

things. I think too little use is made of the climbing kinds, which are quite as attractive and certainly more graceful than the compact little varieties.—C. T.

DWARF FUCHSIAS.

A CORRESPONDENT asks for advice about Fuchsias and the dwarf F. Duurobin Hedder, which I mentioned a few weeks back? The latter, I believe, is not yet in the trade; but it will shortly be, and is well suited for a small garden, or a larger place, where it may be made use of as an edging to a bed filled with taller kinds. As regards hardy Fuchsias, much depends upon the positions in which they are placed as to what height they attain. In seashore districts, where it is warm and sheltered, and in gardens in Wales and Scotland, they attain great luxuriance, and are superb shrubs, smothered with crimson flowers. In less genial climes they reach about 3 feet in height, even less, unless, of course, naturally dwarf, such as F. discolor. One of the most popular of this class is F. Riccartoni, which is also very hardy, seldom getting killed outright, even in the more exposed districts. It will not stand a bleak position. F. pumila and F. microphylla are dwarf, and if they get cut down in winter shoot up again in spring. In unusually severe weather it is advisable to cover the crowns with coal-ashes or similar material as a protection against protracted frost. A familiar kind is F. coccinea, which attains many feet in height in favourable spots. The flowers are crimson, and the leaves get tinged with red. F. conica grows about 3 feet in height in ordinary gardens, but I have seen it higher in the Isle of Wight. It has scarlet and purple flowers; but I should not get it before the others mentioned—at least, F. Riccartoni and F. coccinea. F. corallina, the slender-growing F. gracilis, and F. globosa are all worthy of mention. The last-named is very free in bloom, the flowers of rich colour and borne in profusion. V. C.

SOWING GRASS SEEDS.

THE long protracted drought has been a great trial to the finest lawn Grasses, and where there was much traffic on it, such as occurs on cricket, lawn-tennis, and croquet lawns, there will doubtless be plenty of bare places requiring to be made good, and it is by no means an easy matter to get turf that is free from noxious weeds of some kind or other, and as seed can be got of any kind of Grasses or Clover quite free



Rodgersia podophylla. Engraved from a photograph.

from any admixture, it will if sown at once make a better job of the filling up than any attempt at patching with fresh turf. Now that plenty of rain has fallen to soften the soil, it should have a good scratching with a sharp-toothed rake, then sow the seed, and cover with finely-sifted soil, rolling it down firm when dry on the surface; and to cease the old roots to strike out into vigorous growth a top-dressing of soot and guano should be applied, so as to get a good covering of Grass before winter sets in, as this will keep the frost out of the soil, and do more

to protect the young Grasses than any artificial protection that can be given. It is so usual to sow early in the spring that many neglect the best time for sowing—viz., the autumn, which is really the most natural time, as the seed which has ripened during the heat of summer drops naturally to the earth, and the heavy rains of autumn causes it to spring up vigorously, and get a good hold of the soil. A great deal of mischief is done by worms loosening the young plants at the early stages of growth. But this should be remedied by a frequent use of the roller.

J. G., Gosport.

CHINA ASTERS.

At many autumn exhibitions the China Aster is shown, and in a grotesque way. It holds court with the African Marigold, and both are made ridiculous by the flowers being stuck on boards or cards without a vestige of stalk or leaf. One would scarcely know these very charming flowers in such a disguise—I mean when seen in full character in the garden. The China Aster is not without a certain degree of elegance, and the African Marigold is far from formal, its heavy, rich-coloured flowers being set off by feathery deep-green foliage. The China Aster must not be confounded with the Michaelmas Daisies (the Perennial Asters), as the former are annuals, and very beautiful when well grown. A small garden may be made gay at little cost with these beautiful flowers, which, in the various sections, so to say, display considerable variety of colouring as well as form. The original species, sent from China, had single flowers, but the florist has raised the present race of five double kinds. The chief men to whom merit belongs being Mr. Betteridge, amongst English florists, and, of the Frenchmen, Truffaut perhaps claims first place, although several other well-known men have worked successfully. The China Aster is a large family, split up into distinct groups, such as the Victoria, Penny-flowered, Dwarf Chrysanthemum, the Rose, the Quilled, and the Emperor. Of this series the Dwarf Chrysanthemum and the Victoria are, by reason of their dwarfer habit of growth, best adapted for bedding. They form neat plants, a perfect mass of bloom in the early autumn, and fill the garden with rich colour. I have a strong liking for the taller kinds, as they are less formal, and it is easier to cut a few blooms for the house if so desired. The Quilled Asters are delightful, but in the small gardens it will not be possible to get every type, so that the selection must be left to individual taste. Few annuals are more readily grown than the China Asters. Even with only the aid of a greenhouse and careful cultivation the plants may be had in bloom in both pots and the open. A few flowering specimens are very welcome for the house or window. The time to sow the seed is about the second week in March. Sow thickly in 5 inch pots, well crocked and filled with a light soil. If possible place in a gentle heat to promote quick germination. At any rate, the greenhouse should not be exposed to frost. When the little plants have made about four leaves, prick them out about 3 inches apart. If to be grown in pots, they must be potted on until they are in 5 inch or 4 1/2 size, and use on a light soil—say, loam mixed with well decayed leaf-mould and manure. Never let them get dry, and keep them as near the glass as possible, otherwise the shoots get much drawn. If required for the open, first prepare the places for them, and the soil must be fairly rich. Unless this is so the flowers are undersized, and last only a brief time in beauty. It pays well to enrich the soil for Asters. Provide good food for the roots to go down into, and therefore give them endurance in times of drought, such as the present year. Asters not planted in a good staple this season have had a sorry time and quickly fallen a prey to insect pests. In such a splendid year as the present for seed-sowing one might save their own seed, although it is not expensive to purchase. Still there is pleasure in growing one's flowers from home-saved seed, reserving a few plants for the purpose. All blooms should be removed from them, except, say, four of the finest, and the seed gathered when ripe. Clean it thoroughly, and place in a small basket: put in a dry place for sowing in the spring. China Asters are much troubled at times with earwigs, which eat the blooms. The best way to keep

the pest is by placing small flower-pots amongst the plants, putting a little Moss into the bottom of each, and each morning shake the Moss over a can of boiling water; the earwigs will fall into the trap readily. Green-fly and other small marauders are also very troublesome, and may be eradicated by watering them overhead at frequent intervals with soft-soap and water, using 1 1/2 oz of soap to 1 gallon of water.

V. C.

THE HARDIEST LILIES.

The flower of the past season has been the Lily, and though sorely tried by the drought, it was very beautiful in the garden, the stems being shorter than usual, owing to the severe drought. We see *Lilium* more often in the large than the small garden, but it is a bulb not very difficult to cultivate, if one selects the more hardy and easily-grown forms. The

GOLDEN-RAYED LILY (*L. auratum*) has been very beautiful, and bulbs of this can be purchased cheaply. It is quite hardy, and succeeds particularly well amongst Rhododendrons. The secret is that the soil is fairly light, and not too moist, whilst the rising shoots get protection in spring from nipping frosts. The flowers of this fine species are of remarkable beauty, large, freely produced, and finely coloured, sometimes almost self-creamy white, or bordered with intense crimson. This variability of colouring is a great charm. It is curious to notice in cultivating Lilies that those bulbs in a somewhat moist and partially shaded position are always more satisfactory than in drier spots, in fact, coolness is what they require. A very hardy and showy old Lily is *L. croceum*, which succeeds as well in London as any other kind. Its flowers are very richly coloured, and the bulbs will grow satisfactorily in pots. One often sees a good specimen in a London forecourt, but it is very few of the Lily tribe that will grow under such conditions. *L. canadense* (the Canadian Lily) is a pleasing flower, and the orange-yellow flowers look well in the border; the plant thrives well in moderately light soil. Everyone is familiar with the pure-white *L. candidum*, which seems to succeed well in the cottage garden and in more pretentious places. It has flowered much better this year than usual, and we have seen less of the peculiarly trying disease which spoils otherwise beautiful breaks. A large mass of it is very charming. The finest lot of it I have ever seen was in a Bath garden. The position was sloping and very sunny. A mass of the pure-white fragrant flowers was presented to the eye—a delightful picture, got with very little trouble and expense. I feel sure that is the successful culture of this bulb is to disturb the clumps as little as possible. Amateurs are too fond of interfering with their Lilies, and it is this interference that works ruin. The Scarlet Martagon Lily is a good species, especially in northern gardens, where the flowers seem to be richer in colour than in more southern places. It will live in quite ordinary gardens, and I have seen it very fine in cottage plots. Then we have the useful Martagon Lilies, of which there are several varieties, ranging from white to purple-violet. A good group of them is pleasing, but their fulsome colour is rather unpleasant. They live in any soil, and are amongst the most easily grown of all Lilies. Very beautiful is the Great American Lily (*Lilium superbum*), which is very tall in growth, the stems rising to a height of 9 feet or 10 feet. It is a good hardy Lily, very graceful, and the flowers vary in colour from brilliant scarlet, some almost orange, and handsomely spotted. The early-flowering Buff Lily (*Lilium testaceum*) is very handsome in a group. Its large buff flowers look well in a bold group. The Tiger Lilies are very effective, and the finest of all is *Lilium tigrinum splendens*, which justifies its name. Its flowers are brilliant crimson, spotted with dark spots. They appear late, and are strikingly handsome. Then one can have the lovely varieties of *L. speciosum* (rosy-crimson) and the white variety, *Kramtzi*, which has pure-white flowers. They are both easy to grow in a good soil, and in perfection in early autumn. *L. avenaceum* is a pleasing Japanese kind, the flowers orange-red in colour and spotted.

C. T.

cheapest and most familiar is *F. Riccartoni*, which will stand ordinary winters, but when severe should have some kind of protection to the roots. It is very charming often in southern seaside gardens, but I have seen it near London very fine, even at Finchley, which is considered a very cold district. I remember well a hedge of it leading up to a baker's shop, and throughout each summer the graceful twigs were loaded with the pendent crimson flowers. Another good kind is *F. oocinea*, which makes a very fine bush, and likes a well-drained soil, a remark that applies to hardy Fuchsias in general. *F. discolor* is a very hardy kind, and will live out well in the more northern districts of England, even in Scotland. It is dwarfier than the others. *F. globosa* and *F. gracillaris* are both very beautiful, but if you only require one kind, our choice would be *F. Riccartoni*.—C. T.

4780.—Herbaceous plants and rabbits.—It is useless to set out anything but the strongest-growing plants where rabbits abound, not that they always eat them, but they scratch them out of the ground as soon as they are planted. I used to have a large breadth of Solomon's Seal that they never disturbed. The Flag Iris (*Iris germanica*) is another plant that when well established is too strong rooted for them to interfere with, as are also the different varieties of *Tritomas*. *Diosma Fraxinella* is not rabbit-proof, but I have known them to pass it over in search of food. *Campanula pyramidalis* appears to be distasteful to these creatures, as I have had it for many years in a border overrun by them. In the way of flowering shrubs there is nothing better than the two forms of *Hydrangea paniculata* and *Hortensia*. For large borders the following Grasses are useful: *Eulalia japonica* variegated, *Arundo canapicula*, and the Pampas.—J. C. C.

4800.—Fence behind border.—Your proposal is quite practicable, but the amount of success you obtain will depend a good deal on the class of Roses and Clematis you select. If it is much exposed only the most hardy Roses should be planted, such as the Dundee Rambler, *Félicité Perpetuelle*, *Gloire de Dijon*, and *Sir J. Paxton*. If the position is fairly well sheltered, such strong growing Hybrid Perpetuals as *Climbing Victor Verdier*, *C. Bessie Johnson*, and *Madame Gabriel Linzet* will thrive. Still stronger growers will be found in *Aimée Vibert*, *Rive d'Or*, and *Cheshunt Hybrid*. The best Clematis will be *Jackman* and *Prince of Wales*. The top of the fence may have a fringe of *Clematis montana*.—J. C. C.

4804.—Seeding Anemones.—These Anemones are quite hardy, and succeed better in a bed or border in the open air than under glass. It is their natural habit to flower in the winter when the weather is open. A mulch of leaf-mould or light manure is all the protection required.—E. H.

Leaves on lawns.—As this is the season of the year when leaves are so troublesome on lawns, &c., a very good broom for sweeping them into rows, when they can be easily gathered, is made by taking an old wooden rake, knock out the teeth, and cut to leave six spaces between the holes; then get some young Birch branches, and bind on with strong twine, passing the twine through the holes left by the teeth, and bind the Birch firmly on. This makes a light and very useful broom, as the long handle enables the sweeper to clear a wide space.—ARTHUR ELSON.

4812.—A garden at Leyton.—As far as I remember, the soil in this district is light. Roses will not do much good, but you may try a *Gloire de Dijon* and an *Aimée Vibert* or two. *Chrysanthemums*, *Michaelmas Daisies*, *Hollyhocks*, *Harpalium*, *Doronicums*, *Delphiniums*, *Eranthis*, *Carnations*, *Pinks*, *Campanulas* of sorts, *Veronicas*, and a few others will thrive. Lilies of several kinds will do fairly well in good soil.—B. C. R.

4807.—Using manure.—A mulch of manure on the borders of full of perennials will be very beneficial, and as such borders usually contain bulbs and other plants which are now dormant, the mulch of manure will shelter and afford nutriment during the time roots are forming, and in the spring, when the dormant plants appear above ground, fork the manure in; but it will be better not to use the spade.—

Hardy Fuchsias.—There are a number of beautiful hardy Fuchsias and

E. H. OF ILLINOIS AT

HOUSE & WINDOW GARDENING.

CUT FLOWERS IN THE HOUSE.

It is in bouquets I have noticed more errors, I think, than in any other kind of floral arrangements. Take, for instance, that well known and justly appreciated flower, the Lapageria, of which, as a rule, the white variety is more used in bouquets than the red kind. In nearly every instance the blooms used are arranged upright, or nearly so, totally out of all character with the natural beauty and elegance of the flower, the best part of which is hidden by other things. If anyone saw it thus and had never seen it in a growing condition he would not be able to form any conception of its real beauty. Why, now, may I ask, should not this flower be allowed to droop down in a natural way upon the outer margin? It would there be in much better keeping. Fuchsias used to be arranged in a similar fashion, but I have not seen them so much of late years. If these elegant flowers cannot be employed in a natural manner, better not use them at all. Of late years some people, the florists in particular, have taken to spooling the Rose by redrawing the petals, transposing what should be a bud in the beauty of its unfolding into what might be taken without any stretch of imagination for a Camellia. I and others no doubt have seen the practice carried too far, especially when cut Roses are thus operated upon to a serious extent. The Eucharis when growing is rarely seen erect, yet it is used often as the centre flower for a bouquet; whereas it would look far better if placed upon the side in a semi-erect manner. That well known Gladiolus The Bride when need in a cut state is sometimes seen the wrong way upwards, the beauty of the interior of the flowers being in a manner lost. I have seen Dendrochloa used in bouquets and vases the wrong way about, the flowers thus, to say the least, looking rather singular. Another flower which I have seen totally misrepresented is Kalosanthea coocinea, great pains being taken first to pull the tubes to pieces and then mount each single pip upon a wire. If anyone first saw it thus and afterwards purchased a plant, he might possibly imagine he had an improved kind. Other instances might be quoted, but the above are sufficient to show the absurdity of the methods which some adopt, thinking thereby to add to the beauty of their arrangements, whereas quite the opposite is the case. In all kinds of decorations with cut flowers I maintain that the natural growth should, as far as possible, be adhered to. An excellent arrangement of Madonna Lilies and White Gladioli is shown in the accompanying illustration.

CHINESE PRIMULAS FOR A WINDOW.

THERE are few better flowering plants for room decoration than the Chinese Primulas; and there is now such a wide range of colour, from purest white to deep-red, pink, and even blue, being also represented, that they are without exception the winter flower for a window. They do well in the dry air of a room, and continue to throw up their neat sprays of blossom for months, if well attended to, the only difficulty

being removed to the window & worm sitting-room. Potted as seedlings into thumb-pots, the smallest size, they will require one or two shifts as they grow, never overpotting them, however, for they do best without this, and are apt to damp off if surrounded by a mass of soil in a pot. The best soil for them is a compost of two parts turfy loam to one of leaf-mould, with a little soot and sand, the soot being only in the proportion of one twentieth of the whole. Good drainage, covered with a bit of Moss to keep it



OUR READERS' ILLUSTRATIONS: Madonna Lilies and White Gladioli. Engraved for GARDENING ILLUSTRATED from a photograph sent by Miss Armstrong, Clifton-terrace, Monkstown, Dublin.

clear, is essential, for they must not be allowed to want for water, yet they cannot endure stagnant water about their roots. The little plants must not be allowed to waste their strength in premature blooming. All buds made before they are taken in should be nipped off, and unless the plants are of a good size it will be best to sacrifice the first spray of blossom after September rather than exhaust the plant.

PLANTS which thus store up their flowering powers will continue to bloom without intermission in a sunny window throughout the winter, and are not as likely to die off prematurely as those which throw up small end early blossoms often do. Water must be given in sufficient quantities to run through the pot whenever the surface-soil is dry, but not otherwise, for soaking a damp plant is a fruitful source of evil. Cut and dried roses as to watering every day, twice a week, &c., are a mistake. All plants in pots should be looked over every morning to see whether they need watering, but each one should have separate attention, as their needs vary with their growth, the size of the pot, the weather, and the atmosphere in which they are, so that hard-and-fast rules are quite inappropriate here.

PRIMULAS are apt to rot off just at the collar—i.e., the part of the plant which issues from the soil, and it is dangerous to pour water, especially if it be cold, on this delicate point. Lukewarm water is best for all room plants, and, if possible, it should be rain-water, the saucers being emptied half an hour after the water is given. Another danger which many room plants are subject to is their treatment during the necessary morning turn-out of the sitting-room.

Windows and doors wide open on the coldest winter morning, dust flying round them from the carpet, and sometimes a hasty push into a corner which breaks their leaves, are some of the dangers which are by no means easy to guard against. Perhaps the best solution of these difficulties is to cover the plants before leaving the room at night with shelters made of cap-wire and paper of a suitable size, placing them all together, if necessary, on a side-table, where they are not to be disturbed. These covers are very easy to make, with one or two circles of the wire, strengthened by a few side stays (according to the size needed), double

being gauze, which makes them rapidly drop their flowers. Those who wish to grow them extensively should now sow the seed for next season, autumn sowing plants being finer than those which have only the summer in which to grow, and coming earlier to bloom. But where a few good plants only are needed, it is best to procure them as seedlings, when it is easy to select double or single varieties of any special tint. These can now be put into small pots and grown on in the open air, standing, if possible, in a bed of ashes until the weather becomes frosty in September, when they should

newspapers being pasted over the whole, and a wire handle arranged at the top. They not only protect the plants from dust and draughts at night, but also from the danger of a frosty night, and might be much more constantly used than they are for window plants, many of which are left every winter in an unaccountable way for want of some such shelter. They cost but a few pence, and any handy person can easily construct them. They are also quickly renewed if the paper should become broken or soiled. The only alternative to ensure safety for room plants is to move them into a warm bedroom at night, where they should stand until the necessary domestic arrangements are over in the sitting-room, being placed at a distance from the window during cold weather. L. R.

TUBEROSES FOR A ROOM.

The elegant form and rich, tropical scent of these flowers make them specially desirable for room decoration, and many who have but little fire-heat at command may grow them with care, so as to have them in bloom during the latter part of the summer. Bulbs of the Excelior Pearl (American) variety are preferable to those from Africa, as they are not so tall in habit and produce more flowers. These bulbs should be planted as soon as procured—one in each 6-inch pot—the compost used being a mixture of turfy-loam, three parts to one of leaf-mould, with a sprinkling of soot and enough sand to make the compost light. Good drainage is essential, the crooks being covered with a bit of dry Moss to keep the way open for water, for the special danger of the bulbs is that they may rot before they start into life. Having potted them just below the surface of the soil in this compost, which should be neither in a very wet nor very dry state, they will require no water for about a month, and then should have enough to run through the pot, and no more for another week or two. They must, in fact, be kept very dry, though not dust-dry, until the green shoots appear at the top, which will not be until the spring, the time varying according to the amount of heat to which they are subjected. If no heated greenhouse be available a kitchen-window will suit them during the winter, and, indeed, this is an excellent place, if sunny, for them until they are in bloom, for they need all the warmth they can get when once in good growth. Water must then be supplied regularly and liberally, as they grow rapidly when they begin to throw up their flowering-spikes, and should then be given liquid-manure or soot-water in a very thin, clear state once or twice a week. During the past hot summer Tuberoses placed in the open air in pots have done well, and thrown up their exquisite flowers. In the writer's garden, although placed out-of-doors to retard them (others being kept under glass), these plants flowered but little later than those in the conservatory. It is thus evident that Tuberoses can be grown well without a greenhouse, for nothing could have exceeded the sturdy beauty of these outside plants, their exquisite fragrance being also in full force when their waxen petals opened. The bulbs were wintered in ainery just kept above freezing-point, and had no fire-heat whatever after the beginning of April. The blooms opened towards the end of August, and were then of much value for drawing-room decoration after those which had been kept under glass had finished flowering. J. L.

VIOLETS FOR A WINDOW.

Those who wish to have these deliciously-scented flowers in their rooms should now procure some well-cultivated clumps of the variety Marie Louise, which is the most satisfactory of Violets, although the Blue Neapolitan, the soft grey Parma Violet, and the fine White Swanley Giant (Comte de Brazza) are also all worth growing. These clumps should be either potted without much disturbance of the soil or placed in well-drained boxes (a window-box being very suitable) and allowed to remain outside in the open air until the first frosts appear. The Violets named above, being all double, will require shelter during severe weather, but at the same time they must not be exposed to much fire-heat, and will do best in the window of a room without a fire. Where needed for decoration, they are best grown in pots which

can be brought into the drawing-room for the afternoon, and replaced at night in cool air, either in a cool greenhouse or an unused room. Fire-heat has the effect on these plants of inducing a fresh growth of leaves. Where this takes place no more flowers are produced, and the plants, although looking fresh and healthy, refuse to open their buds in a most provoking way. The best place of all for Violets is in a cool frame, raised so as to be only just under the glass, so that they can be sheltered in frosty weather and given all the air possible during a milder time. They may also be grown in a glass porch without heat, especially if the morning



Large-rooted Chicory.

sun shines on it. If grown in a window they must have plenty of air daily, except in extreme cold, and be placed as near the glass as possible; an east or south-east aspect will suit them better than the west, and the soil should be kept damp with a reseed pot. Violets grow best in leaf-mould with a little old hot-bed stuff and some good loam mixed with it, sand, soot, and lime being added in small quantities, old mortar rubbish being the best form in which to give the necessary admixture of lime. L. R.

LILIUM HARRISI (THE BERMUDA LILY) FOR A WINDOW.

This pure-white trumpet-shaped Lily is specially suited for room decoration, as it blooms so early in the year, and will bear more warmth than most other Lilies. Bulbs procured now and potted at once often give two sets of blossoms, one opening in April or May, and the second stems (appearing directly the first flowers have faded) grow rapidly even out-of-doors without difficulty. The potting of Lily-bulbs is, however, quite distinct from that of other plants, and to do it rightly it is necessary to understand that Lilies have two separate sets of roots—i.e., the fleshy, tuberous roots which start from the base of the bulb (and which should be disturbed as little as possible), and the fibrous surface roots which grow from the stem of the Lily as it rises out of the ground. In order to allow for these valuable surface-roots, on the strength of which much of the size and beauty of the flower depends, Lily-bulbs should be planted low down in the soil, and repeated top-dressings be added as the Lily grows. Having drained the pot carefully (which should be about 8 inches across for a large Lily-bulb), the rougher part of the soil should be laid over the drainage, with a sprinkling of soot, to exclude worms and insects. The best soil for Lilies is turfy mould (i.e., the turfs out from an old pasture, and stacked in a dry place until the roots of the Grass are dead) with leaf-mould, and a little soot and sand. If manure be added (except as a top-dressing, later on) it must be very old, as anything like fermentation is likely to canker and destroy the bulb. Having placed a small heap of compost over the drainage, the bulb should be planted on it, with a sprinkling of silver sand, on which it should rest, spreading out the thick lower roots towards the edge of the pot, and filling the pot two-thirds full with good soil, which should not be too

tightly rammed down, but only made moderately firm, or the bulb, when the roots increase, may push its way up out of the soil for want of room. The compost used should be mixed beforehand, and wetted until it is of a regular dampness throughout, neither very wet nor too dry; and this is an important point, as the bulb after planting must not be watered for some weeks. The soil in which it is planted should, however, be maintained at about the same dampness by placing the pot in a bed of ashes (or a box of ashes on the leads of a town house will do), covering it completely with damp ashes to the depth of 2 inches or 3 inches, and the surrounding ashes must be kept damp by an occasional watering on the surface, though heavy rain should be excluded by a piece of board laid over the pots containing the bulbs. Before root sets in the plant should be taken into the greenhouse or window, the ashes cleared away, and a top-dressing of rich light soil placed over the surface, leaving room for a second top-dressing of soil later on, which may be of old manure and a little soot. The Bermuda Lily, thus treated and regularly watered after growth commences, should do well if given plenty of air and sunshine in a window. Green-fly will, however, give trouble by attacking the coiled-up leaves, unless measures be taken to prevent this. The best way to destroy this blight is to dip the heads of the Lily in a mixture of Quassia chips and soft-soap boiled together. A teacupful of Quassia chips, placed in a saucepan with a quart of water, should boil for ten minutes, when 2 oz. of soft-soap can be added to it, and the mixture removed from the fire as soon as this is dissolved by stirring. Three quarts of cold water added to this will make the whole quantity 2 gallons, and this will prove a useful bath for any window-plants which may be infested with green-fly, using it to dip them in two or three times a week, until all traces of the pest has disappeared. A bit of soft sponge with clear water should be used to keep the foliage clean from dust, and sharp draughts—especially those caused by the needful brushing of the sitting-room each morning—must be carefully guarded against. I. L. R.

THE KITCHEN GARDEN.

LARGE-ROOTED CHICORY.

In reply to several queries, this is a variety of the common Chicory, and although but little grown in this country, it is cultivated on an extensive scale in some parts of France for the sake of the roots, from which is manufactured the Chicory-of-commerce. It is also grown by some of the Parisian market gardeners, as the blanched tops which it produces in winter are of rather finer appearance than those obtained from the typical form. I would advise those who make a practice of forcing Chicory to give the large-rooted variety a trial. It requires the same general treatment as the ordinary kind, but when thinned out should have more space for development. It is best to sow the seed in rows 1 foot apart, allowing a space of from 6 inches to 8 inches (according to the character of the soil) from plant to plant. Do not sow before May, or the plants will run to seed. Give them an open position and cleanly culture, and large, well-matured roots will be obtained; these, if placed during winter in a warm, dark place, will furnish an abundance of crisp blanched leaves, which will be found a very acceptable addition to the usual run of winter salads. B.

4799.—Best kinds of Rhubarb.—I may briefly mention that the best of all Rhubarbs for pie-making is Hawke's Champagne, which is very different to the thick, flavourless, big-stalked kinds grown in market gardens. Hawke's Champagne is a very slender kind, the shoots deep-crimson right through, and full of juice. This is really delicious, and may be especially recommended for small gardens, or where good flavour counts for more than mere size.—C. T.

—Grow the Paragon for early use, and the Victoria for main crop; the latter also forces well, but will not, of course, come so early as an early kind. Early Linnæus forces well, and comes early outside.—E. H.

4795.—Superphosphate and Potatoes.—It does not depend on the kind, and after a

good many years experience I regard a good sample of superphosphate as decidedly the best artificial manure for this crop, under ordinary circumstances. I always use it, and even on a stiff clay soil, not at all naturally suitable for this crop, I grow as fine, clean, and handsome tubers as anyone could desire.—B. C. R.

I have seen this used very largely for Potatoes, but never knew a case of scab arising therefrom, and I think on most soils it may be used with advantage.—E. H.

4798.—Seed Potatoes.—This is an entire fallacy. A set of most careful experiments made this summer by a gentleman interested in horticulture have given as a result a net loss in the crop obtained from steeped seed of nearly twelve bushels per acre as against the produce of unsteeped seed, the loss, moreover, being chiefly in the larger or "ware" Potatoes. The seed (Champions) was steeped in a solution of half-a-pound of sulphate of Ammonia and half-a-pound of nitrate of potash to each gallon of water, and left in the liquid for twenty-four hours, then dried and planted. I must add that for my own part I cannot see in what possible way such treatment is likely to prove beneficial to the crop.—B. C. R.

4796.—Green Tomatoes.—You have only to cut the fruit (preferably in bunches) and place it on a shelf or in a drawer in any warm place, such as a kitchen, and sooner or later all that are anything like full-grown will ripen, or at least become coloured, and though the later ones lack substance and quality, they come in nicely for flavouring and making sauce, &c. The small green ones may be made into an excellent pickle, and for this several recipes have been given in GARDENING from time to time.—B. C. R.

If they have attained to such a state they will ripen in any warm place. They might be gathered and placed in the kitchen on the shelves, or cut, with a portion of stem attached, and hung up wherever there is warmth.—E. H.

Gather them as ones, and place them in a sunny window, or on the ledge of a warm-house to ripen. I believe a very good preservative can be made from them, but have never tried it. Perhaps some other reader can oblige you in this respect. If the fruits are not too small they will ripen up well in a sunny window, or on a shelf near the glass.—C. T.

4901.—Celery.—Was the Celery watered after being earthed up? From some cause or other moisture has penetrated the heart, and produced decay. Possibly the earth has been built up too high.—E. H.

4745.—Moving Asparagus.—This is not the best time to move Asparagus, if one had any choice in the matter. Still, it may be moved safely now. Take up as carefully as possible without injuring the roots, and replant again as soon as convenient, so that the roots receive no check. Mulch over the bed with manure as soon as planted.—E. H.

4815.—Basic slag.—The value of basic slag as a manure lies in the amount of phosphoric acid it contains, hence it is of use only as a substitute for superphosphate of lime (or bone-meal). It is, however, decidedly cheaper than either of these substances, and though not quite so prompt in action as superphosphate, is much more so than bone-meal. It is especially suitable as a dressing for meadows, light sandy soils, old meadows, clay lands, or, indeed, for any formation that is naturally deficient in lime as well as requiring phosphoric acid. It is also an excellent fertiliser for Potatoes, and, indeed, for root crops of all kinds, and may be employed at the rate of from 3 cwt. to 5 cwt. per acre. There are a good many different makes or "brands" of basic slag in the market, some of which are comparatively useless. That known as Thomas' Phosphate Powder is one of the best.—B. C. R.

4729.—The Bride Gladiolus.—Put at once in any good soil that will grow "Geraniums" and Fuchsias well. Put six bulbs in a 5-inch pot, and nine bulbs in a 6-inch pot, cover about half an inch, and plunge in a cold frame for a few weeks. In forcing they will not bear a strong heat. If brought on in a warm greenhouse, where the temperature is about 50 deg. at night they will bloom about Easter.—E. H.

No time should be lost in potting the corms, five in a 4½-inch pot in a compost of two parts fibry loam, one of leaf-mould, with sufficient sharp silver sand to keep the whole porous, adding a small quantity of dissolved bones if the loam is poor in quality—say, half a pint of manure to one peck of the compost. Stand the pots on a shelf in a cool-house or frame secure from frost. If the soil is moist but little water will be required until growth commences.—S. P.

CHRYSANTHEMUMS.

NOTES ON CHRYSANTHEMUMS.

THE SEASON.—The Chrysanthemum season is likely to be finer than last year, and the displays in the various public parks are quite up to the average. It must be a poor park now that does not have an annual Chrysanthemum exhibition, the Government parks being, I believe, exceptions. The weather has been fairly favourable for keeping the blooms fresh, and no serious complaints are heard of damping. It is necessary to keep a little heat, or to maintain a buoyant atmosphere, and give the plants as much space as possible. From what I have seen, the old varieties are very popular still—I mean such kinds as Elaine and the finely-coloured Source d'Or. If only two kinds were required for early bloom these would be still difficult to beat for all-round excellence.

Mlle. Therese Rey.—Amateurs who exhibit Chrysanthemums should make note of this fine variety. It is really very beautiful, and the best raised for many years. As yet it is scarcely known at all, but will appear in some stands at the exhibitions now being held throughout the length and breadth of England. The flowers are large—but then no variety stands a chance now for exhibition unless it is broad and massive—creamy-white, and graceful, so to say, in expression. It is neither coarse nor ungainly, and one I admire greatly, although adverse to big flowers as a rule.

Vivian Morel.—This variety is of a remarkably sportive character. Chas. Davis, a bronze-coloured kind, is a sport from it, and likely to be much grown. The pure-white flower is got from an early hand, the later buds producing blooms of the warm rose-purple colour, which is accepted as the proper character of this variable kind. I saw the white and the lilac-purple on the same plant recently, but in spite of this quixotic nature this variety is a really splendid Chrysanthemum.

Crimson Coloured Varieties.—There is quite a long list of deep-crimson purple-coloured kinds, such as William Gerard and John Shrimpton. The flowers are large, but refined, and the shade of colour is of super depth, with

an effusion. An unnamed seedling I saw is a fair advance on Meg Merrilies, a variety that is superseded now, this novelty being fuller. The flowers of this are of a milky-white colour, and with the petals out, so to speak. Amos Perry (yellow) and Excelior are good additions, especially the last mentioned, which is a flower of remarkable size, rose-purple, the petals curling inwards and showing the silvery reverse. The greatest sensation, so to say, this year will be Mme. Therese Rey, described above.

CHRYSANTHEMUM COTTAGE PINK.—Passing through a Kentish village the other day I saw a fine mass of this variety coming into bloom. It should be introduced into suburban gardens, the flowers, rosy-purple in colour, freely produced, and they throw off rains better than any other outdoor kind known to me. It is very similar to a very old variety called Emperor of China, and is very free, hardy, and thrives in fine or bad weather through November, lasting sometimes into December. I saw it in full bloom in a southern seaside garden last year at Christmastime. The Anemone-flowered Chrysanthemums (see illustration) are very pretty and well worthy of extended culture. V. C.

TREES & SHRUBS

ROCK ROSES (CISTUSES).

SUCH fine shrubs as the Cistuses were, when badgers held complete sway, lost to our gardens, and many good forms disappeared. This delightful group is entitled to a good place; the shrubs are not troublesome to grow, have a wealth of glossy leafage, and in the case of such kinds as C. ladaniferus or the Gum Cistus bear flowers of much beauty. It has been urged that they are not hardy, but C. ladaniferus and others will live out even in Scotland. This is a proof of the hardihood of the Cistuses, but some are more tender than others, and only those that live out-of-doors will receive mention here. I like to see them massed together, and a bed of C. laurifolius maculatus or one of the other types is a pleasant feature during the summer months, when the shrubs are in flower. I have seen in the south of England dry sunny banks clothed with them, banks upon which very few other things would succeed. One of the most useful is the Gum Cistus (C. ladaniferus), which has long been in English gardens, as it was grown as early as 1656, by Tradescant jun. Its flowering season extends during the three summer months, from June to August, when it gives beauty to English gardens as well as the Spanish wilds from whence it was introduced. The species has white flowers, but there is a variety named maculatus in which the white ground is relieved at the base of each of the petals by a blotch of rich purple. When in a suitable position the shrub will grow about 5 feet or 6 feet high, and when brushed against gives off a sweet, balsamic fragrance, due to a gummy secretion in the summer months. This rich perfume is very strong, and a bed of shrubs can be detected some distance away, although unseen; the leaves are shining as if polished, narrow, and abundant, giving a bushy character to the plant. Another very beautiful species is C. laurifolius, which has also been long in cultivation, and is indispensable in every good garden. It is hardy, and delightful when in full bloom, as the flowers are borne freely, and create a pleasing effect against the smooth, polished leafage, which is also comparatively broad. Its chief charm is the profusion of flowers; but even finer than the type is the variety maculatus. Its flowering is usually confined to June and July, and, like C. ladaniferus, comes from Spain; but it is long since it was introduced, as in 1752 it was cultivated by the celebrated Miller. These two types are the first to commence with, and are the hardiest; but several others may be grown, these being of dwarfier growth, as C. monspeliensis, C. creticus, C. orisopus, C. lusitanicus, C. hircutus, not forgetting also C. purpureus. One great advantage of the grouping system, apart from the better effect the several plants have, is that in the event of exceptionally severe weather protection may be given, this taking the form of mats hooped over them. This will not be necessary, however, except in weather of great severity, when it is often necessary to protect plants and shrubs considered perfectly hardy. Every care



Anemone-flowered Chrysanthemum.

an old-gold reverse to the florets. The habit of growth is dwarf, or comparatively so, and one good thing is this dwarfing of the growth. Plants six or seven feet high are no advantage. I prefer the neater and more compact specimens.

NEW JAPANESE KINDS.—There is a wealth of new and beautiful Japanese varieties, and several novelties which I have seen privately will be shown in the course of the autumn. Col. M. B. Swete is already known, and it is a very fine flower, very large, with only a trace of coarseness and the colour is bronze-yellow, with a

should be taken of the *Cistuses*. They re- pay for trouble and a proper knowledge of their requirements. One of the chief things necessary is dryness. A damp air, such as is frequently experienced in low lying situations, especially in the winter, inflicts greater harm than frost; and in the neighbourhood of London the foul yellow fogs are a severe trial to the shrubs. The position for them should be in the first place dry, and, if possible, well exposed. Under these conditions the plants will bloom freely, and the foliage, if they are near large towns, keeps freer from sooty deposits. If the garden is very confined, then Rock Roses are not likely to succeed, as I have watched their behaviour in recent years, and always find that they thrive best where the soil is dry and the situation exposed, so there is little damp. Like the beautiful little Sun Rose that love to scramble over a dry bank, gilding it into colour, the *Cistuses* also prefer a dry soil, poor, non-inverting, and apparently not capable of supporting plant life. But here they flourish and enjoy the material in which the roots have found entrance. There are many dry, bare banks in gardens, on which nothing but coarse weeds thrive, that may be converted into a picture of leaf and flower by planting upon them the Rock Roses. Throughout their cultivation there is little trouble with them, as they are easily propagated by seeds, which ripen well and germinate readily, or by cuttings. The cuttings will soon strike if taken in September, the earlier the better, inserted in pots filled with an ordinary light soil, and transferred to a cold frame. They soon make headway if, when struck, they are potted off singly in the usual way. In the spring they may be planted out. V. C.

4892.—*Clomelia Flammula*.—Are you certain the kind is this? But in some years flowers lose their fragrance to some extent, a good deal depending upon the weather. I have often noticed this—a very fragrant flower under certain conditions almost losing its characteristic scent. This is the only explanation, I should think, that could be afforded.—C. T.

I can only suggest that the want of fragrance in your *Clematis* was caused by the hot, dry weather that prevailed at the time it was in flower. Many flowers suffered in the past summer from the same cause. Carnations especially; the sweetness in these could only be detected in some varieties early in the morning or late in the day. J. C. C.

The Siberian Crab—Few trees are more suitable for a small lawn than *Pyrus malus haccata* (the Siberian Crab), which is charming when in flower, but still more so through the autumn and winter, when lit up with its profusion of crimson fruits. But even if it neither flowered nor produced such a wealth of handsome fruits, the Siberian Crab would be of note for the extreme gracefulness of its growth. It is always a pleasure to see a good specimen, and as it does not attain a very large size, it is suitable for comparatively small lawns. The tree is, of course, perfectly hardy, and not fastidious, requiring no special soil or position. As the planting season is near at hand, it should not be overlooked. One sees so many poor things in gardens, "Monkey Pizzas," half-dead, and a surfeit of variegated Maples, that the Siberian Crab should be planted if only for the sake of variety.—V. C.

A good Rhododendron ("Heleno-Schiffer")—This is a new kind, and doubtless is expensive; but in time it is one of those plants that will be popular because of its usefulness and beauty. It was raised, I believe, on the Continent, from whence we have got many such things, as they are made more of there than in England. It is a delightful pot-plant, and was exhibited at the summer show of the Royal Botanic Society. The plant is of very compact habit, which fits it for the smaller greenhouses, in which it is impossible to grow the larger habit kinds. The flowers are white, and produced in neat trusses. When offered for sale it should be made note of.—V. C.

The Pearl Bush (*Eucryphia planatifolia*, not *E. pinnatifida*, as it is sometimes called) is a shrub that all who live in the northern districts of England should take note of. The flowers are large, pure white, not unlike those of the St. John's Wort, and with a bunch of yellow stamens in the centre, which seems to intensify the purity of the segments. A large bush in full bloom in summer is very charming; the flowers set off by an abundance of foliage of polished green colour. It was introduced from Chili, and no shelter need be given to the

bushes, which in more than one southern garden have been established there for several years. In its native country it grows about 10 feet in height, and in the flowering season is covered with blossom. It will thrive in ordinary soil, provided that it is well drained, and the position should not be too exposed, otherwise a succession of severe frosts is likely to prove destructive. But it is worth a little protection in all the more northern districts, its distinct character and lovely flowers well repaying for any attention of this kind.—C. T.

ORCHIDS

ODONTOGLOSSUM BICTONENSE.

THIS is an Orchid which formerly used to be grown with a great deal of pleasure, and a very nice display it yielded in those days when fewer plants could be found to make a show of blossom during the dull season of the year. Even now it should not be cast on one side because it has a special interest, as being the very first *Odontoglossum* which flowered in English gardens, and this was in the year 1836, having been sent from Guatemala by its discoverer, Mr. Skinner, who, in speaking of this plant as he found it, stated it "is quite destitute of a rhizome. It has oblong pseudo-bulbs with narrow leaves. It is always terrestrial, half buried in mossy banks." Thus "G. M. II" may see what the finder of this species says of it as it grows in its native home. "G. M. H." sends me a spike of this plant for a name, asking at the same time if it is the typical form of the plant? To this inquiry I should say no, it is not the usual variety we see in English gardens, but it much resembles a form which I have seen flowering in the houses in German gardens under the name of *speciosum*. It is near to the variety called *splendens* with us, but it has a much duller lip, and the flower is smaller. The specific name is derived from its first flowering at Bicton, then in the possession of Lord Rolle, but numerous varieties have appeared since that time, the most distinct, if not the most handsome, being the form called *album*, which has the sepals and petals of a deep brown, and the cordate lip of a pure white. Another form called *splendens* is a very robust kind, and it produces a dense many-flowered raceme, with large blossoms in which the sepals and petals are of a rich brown, transversely streaked with greenish-yellow, the large cordate lip being of a lively rosy-lilac; sulphureous, sepals and petals pale yellow, with a white lip. All these varieties I have seen at Mr. Bull's establishment, where the species is thought a great deal of, and done well. It has been found in Mexico, as well as in Guatemala, and under cultivation it likes a somewhat warmer situation than do such plants as *C. Pescatorei* and *O. orisipum*, and upon this account I have no doubt was due the fact of its succeeding so much better than many things which succumbed to their fate; but I have always found it to be a plant very easy to grow, but at the same time to like a little water to help it through the winter, instead of being quite dry. MATT. BRAMBLE.

CYPRIPEDIUM SPICERIANUM.

I AM in receipt of four flowers of this kind from "M. J.," and, as he says, they all represent a different form slightly. No. 1 I take to be the normal and typical one. No. 2 is a small flower, with very narrow petals, and it is very dull coloured, certainly one of the very poorest I have seen of the species for a long time, and I should cast this one out from the collection, he it ever so small. No. 3 is a very pretty flower, with a large dorsal sepal, and with short, undulated petals; it is most distinct and beautiful, and should be well looked after. No. 4 is a fine and beautiful flower, having a large dorsal sepal, with a very broad central streak of purple colour, the whole of a pure white, tinged with flesh colour, the base green. These varieties, coming from seed in their native country, show what a marked change can be effected in the kind. Some of my friends tell me they have read that *Cypripediums* are not increased in this way, because they do not produce seed, and that they are a set of plants that are fast becoming extinct. But yet our collectors still find new kinds. Mr. Sander has reaped quite a harvest from the new varieties he is constantly having sent home to

him of the mentanum type of *C. insignis*, and amongst them stands the chaste and lovely *C. insignis Sanderæ*. Then, again, more recently we have the beautiful *C. Charlesworthi*, introduced by the Messrs. Charlesworth and Shuttleworth, of Bradford. Then, again, to go back only a short time, we have the *C. Chamberlaini*, introduced by Mr. Sander, which, although it does not produce more than one flower at a time on a scape, yet a plant with several growths may have as many spikes, and thus its lovely flowers are increased. Then, again, another distinct and evergreen kind is the *C. Sanderianum*, and the equally fine and free-flowering *C. Rothschildianum*, and the beautiful *C. Curtisii*, which, however, was first introduced by the Messrs. Veitch, *C. bellatulum* by the Messrs. Low, of Clapton, and many other fine forms, which seem to show us that the longer we search, the finer and more exquisite forms we find, so that if they are a dying-out race they are determined to excel in beautiful forms to the end of the chapter. But I must now return to the *C. Spicerianum*. This was first seen in flower in this country some fifteen years ago. This passed into the hands of Messrs. Veitch, and it remained a rare plant for several years, but at length its habitat was found out by the Messrs. Low's collectors, and soon after by those sent out by Mr. Sander. It has been a wonderful favourite in our collections ever since, and it has become a favourite Orchid with our numerous hybridizers, and some excellent forms have resulted from it, of which I may note *O. Leeanum*, *C. Figure*, *C. Hera*, *C. Buchenianum*, *C. Hornianum*, *C. Lathamianum*, *C. Niebe*, and many others, which have all had *C. Spicerianum* for one of their parents. This plant comes from Assam, or from some part of Northern India, which has not been divulged by the collectors, but it thrives well with other species and hybrids of the same genus, potted in the same way, adding a little loam to the peat and Sphagnum Moss. They last in bloom for a very long time, but when their flowers are past I like to keep them in the *Odontoglossum*-house for the resting season, removing them to the warmer house in the spring to make their growth. MATT. BRAMBLE.

CATTLEYA BOWRINGIANA.

IT is now less than ten years ago that Messrs. Veitch introduced this plant from Central America, and from time to time I have recommended readers of *GARDENING* to invest in it, for it is a splendid thing. This *Cattleya* flowers at this season and right through the month of November in great beauty; and at no time of the year should it be kept either dry at the root or without moisture in the air. We are not told at what altitude it grows in its native country, which is British Honduras; but it is found beside the rivers, so that it is enabled to gather a great deal of moisture in the dry season from evaporation, whilst in the wet season the rainfall is very great, so that it will not answer to let the plants get dry at any one time in the year, or they will then get badly infested with thrips; so much have I seen this plant smothered in these insects as to be of a greyish-black. But this was entirely owing to their being in a quite dry house with no moisture in the air; and the plants were dry, too, at the roots, and from which they never recovered. MATT. BRAMBLE.

4816.—**Fixing hot-water pipes.**—If the connections leading to the radiators were free, as they should be, there could be no more pressure in the pipes than that produced by the head of water—a few feet only; but the pipes may have become blocked in some way. You do not say of what material the joints are composed. I prefer Portland cement to anything else, and like it more the longer I use it. If the cement is fresh and properly worked in, the joints will never leak a drop, and last almost a lifetime. The fact of the lower or return pipe having a greater inclination than the flow is of no consequence; the flow ought to have a rise of at least 1 inch in every yard, though rather more is perhaps better; but with a good rise from the boiler into pipes the inch is enough. A 2-inch connection is large enough for anything up to about 200 feet of 3-inch piping; but where there is a long length of any size to heat, it is better

to have the gauge the same throughout. I suppose you mean you cannot keep the 3 inch pipe tight on the 2 inch nozzle on the boiler? By making a Portland cement joint you can easily do so. I often run a 2 inch (or even 1-inch) pipe into the socket of a 4-inch, and with plenty of fresh cement, and a few hits of broken brick, can make a joint in ten minutes that will never lose a drop of water. I will tell you how to make the cement joints, if you like; three hours after finishing them you can fill up the pipes and light the fire.—B. C. R.

FERNS.

FILMY FERNS FOR WARDIAN CASES.

"T. J. M." writes me that he should like to know which of the New Zealand kinds he can accommodate in a north-east window? Well, you may grow all or any of these in a case so situated, and it will become one of the most beautiful ornaments for a room that can be conceived. "T. J. M." sends me a list of the kinds he has coming home by a mail steamer, which, if they should arrive in anything like condition, will soon thrive apace. Now I have seen many styles of Wardian cases for Ferns, but I think the most effective was one fitted with a shallow zinc tray, in which small and large pieces of sandstone rock were stood up and arranged in a picturesque manner, and upon this was placed in the first instance a small pot with Filmy Ferns. These had climbed upon the blocks of sandstone, so as to quite cover them with verdure, the kidney-shaped kind from New Zealand being quite conspicuous, not only for its shape, but for the beautiful bright greenery of its fronds. This plant is frequently called a rare New Zealand kind, but it is not so, for a gentleman, who lives next door to me now, has just returned from a twenty-five years' residence in New Zealand, and he tells me it is a species which is plentiful in its habitat, and from the great quantities of this plants which I saw when at Kew last in the celebrated Cooper Foster collection, it should not either be considered a rare plant in this country; but it does keep a rare plant in England, which is a great pity. I have specimens with fertile fronds gathered in New Zealand, but I have never but once seen a frond which had been grown in this country with its row of fertile cups round the edge of the fronds. Some of the kinds mentioned by "T. J. M." have short and stout rhizomes, which will not creep and fix themselves upon the block of sandstone, and for these a suitable place or places for their accommodation should be provided near the base of these. Such kinds as *Trichomanes elongatum*, *T. striatum*, *Hymenophyllum seahrum*, and the two *Todeas* may all be taken as examples, and for the *Todea superba* ample space should be allowed for this to spread and develop itself, when it will become one of the most beautiful objects in the whole case. Although not, strictly speaking, a Filmy Fern, *Hymenophyllum dilatatum* is a fine, broad-fronded, stately species which requires ample space, so also does *H. seahrum* and *H. demissum*. The other kinds are smaller growing, and they have creeping rhizomes. The *Trichomanes elongatum* also makes fronds nearly 1 foot in height, as also does *T. striatum*, and should be provided for accordingly. These plants should be potted in small, well-drained pots, the soil being composed of equal parts of loam, peat, and Sphagnum Moss. These should be placed in the permanent places they are to occupy, then the zinc tray should be filled with water, the surface covered with pieces of wirework, and the whole covered with growing Sphagnum Moss, which will require cutting back a bit, as it grows too strong, and with an occasional dusting with the syringe nothing more is necessary. J. J.

Parley Fern.—Referring to the remarks on Parley Fern (*Allosorus crispus*) in GARDENING of October 21, I may say that this Fern grows well in our garden—a cold, exposed, but high situation. We have some fine plants brought fourteen years ago from North Wales, others from Westmorland and Cumberland brought more recently; but all are in a flourishing, healthy condition. They seem to do well in a tolerably shady place facing north and north-east. I give them no special soil, but wedge them tightly between the stones which

support a steep bank. The soil is light gravel. They bear both sterile and fertile fronds abundantly, but so far as I have noticed they have produced no seedlings, although the *Leutrea Filix-mas* and *Filix-femina* seed freely in the same bank.—A. S. SOUTHWALL.

INDOOR PLANTS.

MARGUERITES.

THE varieties of *Chrysanthemum frutescens*, which are popularly known as Paris Daisies or Marguerites, have now been grown for a considerable time, and are recognised as belonging to the most popular of market plants; yet when they were first grown for market it was generally anticipated that they would have a very short run. Anyone not acquainted with Covent-garden Flower Market would be astonished at the immense quantities to be seen there throughout the spring months. It is chiefly the white varieties that are grown; the yellow forms are equally if not more desirable, but they are not so easily managed. It is not only for pots that the Marguerites are useful, as they are equally valuable as bedding plants, and for window-boxes there are few things that will keep up a good display of bloom so long. For winter flowering or early flowering, plants propagated late the previous spring are best. These may be out back about midsummer, and after they have well started again they may be

but this, though it flowers well early in the spring, does not keep up a succession of bloom as well as *Halleri maximum*. Of yellow varieties *Etoile d'Or* is the best known, but it is a little difficult to manage. Cut-back plants do not break freely, and even young plants when stopped do not branch out regularly. *Feu d'Or* is a free-growing variety which may be recommended, the flowers being similar to those of *Etoile d'Or*. It must not be treated too liberally, or the plants will be apt to run up tall. *Comte de Chambord* is sometimes met with, but it is not a very desirable variety, the flowers being pale-yellow and smaller than those of the above. Its only recommendation is that it is of a dwarfier and more branching habit. F.

CYCADS, AND WHAT I KNOW OF THEM.

I THINK this somewhat a pertinent question from an unknown friend from Liverpool, signing himself "Kaffir." In his letter he says, "Tell me through GARDENING what you know about Cycade, and if they may be grown in an ordinary greenhouse?" Well, I may tell you at once that they cannot be grown in an ordinary house set apart for greenhouse plants, because this would be too moist for them during the winter. It is true I have observed that Mr. Wm. Bull, of Chelsea, maintains a lot of these plants in his large conservatory with other plants through the winter months, and they appear to do well, but the kinds that I have



Flowers of Marguerite (*Chrysanthemum frutescens*).

potted on into 5-inch pots. They may require stopping once or twice, but where four or five sheets start evenly together they will make good plants, as they branch out naturally when they begin to flower. For flowering later in the spring autumn-struck plants are best. These should now be ready for potting into 5-inch pots. They may require stopping once or twice, and the tops will be useful for cuttings, which will make good plants in time for bedding out. There is very little difficulty in the culture of Marguerites, as the cuttings will root freely on a hot-bed. If there should be a scarcity of good cuttings, a few old plants may be cut back, and these will soon break out and give a good supply. Marguerites may be potted in any ordinary garden soil; rich compost should be avoided, or the plants will make too much growth. After the plants are well set with bloom they may be fed with liquid-mannure. One great drawback to their culture is that they are much subject to a small maggot, which is difficult to deal with on account of its being under the surface of the leaves. The only means of keeping this enemy in check is by using paraffin as an insecticide. There are several distinct white varieties, but they are not now often seen under names. That which I have seen named *Halleri maximum* is the best; the flowers are large and the habit of the plant good. *Pinnatifidum*, a small-flowered variety, with very pretty, finely-cut leaves of a pale glaucous green, used to be grown a good deal, but I have not seen much of it lately. There is also a good large-flowered variety with pale-green, rather finely-cut leaves of dwarf habit,

mostly observed there are South African and Australian species and varieties. The kinds from the East Indies and those kinds from Central America and the West Indian Islands are not represented, and therefore I say to grow a good representative collection of these plants one requires a slightly warmer and drier house than the ordinary structure which is devoted to ordinary flowering and fine foliaged plants from cool countries, whilst in the spring and early summer months they revel in a good supply of heat and moisture also. This is the time when they usually make their growth, but sometimes a season may roll past with no new growth being developed, and when this is the case, the plants should be kept quiet and dryish, as it is of no use to try to force growth upon them. These plants have been said to have cylindrical undivided stems, and in this respect much resemble Palms, but anyone who visits the Amsterdam Botanic Garden will here find that this description must be read with a little caution. In this place there was a very fine collection. I suppose this came about through the Dutch having early access to South Africa, and finding the species somewhat plentiful they secured a good supply; but here, at Amsterdam, may be seen several of the fine Cape species, having branched stems, as well as the Chinese *Cycas revoluta*, having several branches, and one plant of the East Indian *C. circinalis* here had three branches upon it. I have seen one or two other examples of this species with a branched stem, but it would appear to be only the male plant

which branches in this kind; what the others may do I cannot tell. These plants are peculiarly suitable for the amateur's greenhouse, because they do not quickly grow out of bounds, so that they excol in their beauty and their lasting qualities, for the house which is large enough for them will be equally roomy come ten or twenty years hence, so that here they differ from Tree-Ferns and Palms. These get too tall in twenty years for the house, and have to be done away with, but with Cycads the process of stem building is effected but by slow degrees. Many new kinds have been discovered in Australia during the last thirty years, but the most remarkable plant was sent home in 1862, which differs from every other species of the order, and it goes to prove that Australia is the oldest hit of the world known, for here Mr. Hill found the *Boweria spectabilis*, having a stem some 60 feet high, and with bipinnate leaves, and this form is only known to exist in our coal measures. The plant was first found in the early part of the century, during Flinders' voyage, but when it appeared in the vignette of the book of the history of the voyage it was simply considered to be a fancy of the artist, as no one could believe in such a plant. I have seen many species of the order in the numerous gardens I have visited during my sojourn through Europe, but I have never seen so much attention paid to their culture as in Leipzig; but it is in Saxony that the fashion prevails of using the leaves of *Cycas revoluta* as memorials of the dead, and of late years I have seen one place only in England where a speciality is made of the same species. This was at the Albert Nurseries, Pookham-rye, which is conducted by Mr. C. Hicks. Here a large house is devoted to them, and highly decorative they look, so that we may be led to see what a highly decorative plant it is, with its deep-green leaves, which resemble the feathers of the ostrich in outline. The fossil remains of this order are found in various part of our own country and other parts of Europe, but all have long since disappeared from these once-familiar places, and they now appear in the greatest numbers at the Cape of Good Hope and neighbourhood and in the land of the Antipodes. A few scattered species are found through the East India and the Indian Islands, several come from South America, Mexico, and the West Indian Islands, but the majority of those natives of the Western Hemisphere have slender stems and are quicker growers. The first plant of *Eucopalarctos Caffol*, which is also called the Kafir's Bread-tree, was introduced to this country in 1775. It was living a few years ago, and could have been accommodated after all these years in any amateur's greenhouse standing only 4 feet in height. I would earnestly recommend "Kafir" to go in for these plants strongly, as they will not overgrow the height for many years. These plants may be potted in good turfy loam and sharp silver sand, and the pots should be well drained. Give an abundance of water through the summer months, but a very little through the winter; yet I do not like to treat them as dry blocks, just a little moisture being necessary to maintain the leaves in good and healthy condition. I think this is all that I know about Cycads that may be useful to "Kafir." I have not entered upon the economic properties; but these he may find out by studying the order. Neither have I done anything in the way of describing the species, for there is a great resemblance in the general run of the plants. Of course, there are some striking deviations. I think there are altogether less than a hundred species of the order known, principally confined to the under-named genera: *Boweria*, *Catakidozamia*, *Ceratozamia*, *Cycas*, *Dion*, *Eocopalarctes*, *Lepidozamia*, *Macrozamia*, *Stangeria*, *Zamia*.

J. J.

TUBEROSES.

FEW flowers are more valued in autumn and winter than the Tuberoses. Especially is this so where there is a large and constant demand for such as are useful in button-hole work. Tuberoses, it must be admitted, are suited to this class of work, and alike useful are they in wreaths, crosses, or bouquets. It is now possible to have them in bloom almost all the year round, and though, of course, in common with all flowers, they open very slowly in the early of winter, yet it is satisfactory to know that a

fair percentage of their flowers expand tolerably well. The very latest batches should now be in the open and throwing up their flower-spikes in various stages. To secure these from accident, a stick should be placed to each, with a loose tie to admit of future growth, and if the pots are stood closely together, little harm should result. At this time also keep them free of the side growths that form about the bulbs to the detriment of the flowering stem and flowers. Give the plants abundant supplies of water at the root and weak liquid-mannre every other day. Syringe freely and regularly so as to check as much as possible the progress of red-spider, thrips and the like, which are almost sure to infest them. An occasional watering overhead with clear soft-water will also conduce to the same end. Beat of all, perhaps, is an occasional

SPRINKLING WITH QUASSIA-CHIPS and soft soap. Take a 6-inch potful of the Quassia-chips and place in an old saucopan with soft water, and boil steadily till the whole of the chips have sunk to the bottom; then drain it off and add a large teaspoonful of soft-soap, stirring well till dissolved, adding sufficient cold soft water to make two gallons of the whole, but if not sufficient, increase the proportion of chips and soap till enough has been made to give a good syringing all round. In using the syringe for this purpose the jet is always preferable to the rose, because with the former a steady spray is maintained, and all sides of the plants can be reached. It is a mistake to dash quantities of these insecticides against the plants, because the great hulk goes to the soil and is lost; whereas with the jet a mere mist-like spray is the result, and has the effect of just damping the leaves and stems. A spraying of this kind may be repeated frequently and at a very trifling cost, and gardeners generally should not lose sight of this cheap and effectual remedy. In the case of Tuberoses persevere with it while the plants are yet outside and the insects less numerous. When the plants are housed the drier atmosphere conduces to their rapid increase, when they frequently get the upper hand. By this time the whole of the plants constituting this batch should be secure in pits and frames away from the reach of frost, a few degrees of which will prove fatal to them in this stage. Provide abundance of air on all favourable occasions, and daily while the plants are in frames at closing time give them a nice sprinkling overhead with a fine rose. This will also tend to keep insect enemies in check. From time to time the most forward may be introduced into warmth as required, and with care a supply of flowers may be kept up till the end of the year.

POTTING EARLY BULBS.

It very often happens that we do not remember to do this in time to secure the most satisfactory results. If a compost of leaf-soil, loam, and the thoroughly decayed portion of an old Cucumber or Melon-bed be used, together with good drainage, almost all bulbs will do well. It materially assists them, however, to have a dash of sharp sand placed around their base at the time of potting. No bulbs do so well if placed into heat immediately as when they are stood in a pit or frame for a short time previous to being removed to the greenhouse. The roots need to be well at work before the tops are excited. The size of pot must depend upon the sort of bulb. The following will do well if from seven to nine bulbs be placed in a 5-inch pot: *Freesias*, *Ixias*, *Sparaxis*, *Jonquils*, *Narcissus bobacodium*, *Allium neapolitanum*, and *Soilles*, also *Grape Hyacinths*, and *Lachenalia's*. Roman *Hyacinths*, *Tulips*, *Leucojoms*, *Zephyranthes*, *Narcissus*, *Hyacinthus candicans*, *Fritillarias*, and the smaller *Hyacinths* have most effect when placed three to five in a 5-inch pot. Large bulbs of *Hyacinths*, also the various *Liliums*, will do better if potted into the same size singly. A well-matured bulb does not need much space, as the bulk of the true is practically stored up in the bulb. All of them should be grown steadily, especially during the earliest stages, and they will require a good supply of water as soon as the soil is permeated with roots.

P. U.

449.—Keeping Fuchsias through winter.—These Fuchsias may possibly survive

in a collar, but it greatly depends upon the atmosphere there, as they will probably mildew unless there is a circulation of air. Fuchsias are so nearly hardy that they can be kept in any out-house, or in a spare room, with safety, if they are well hardened out-of-doors in autumn, and kept very dry at the roots. They would do much better and flower earlier if kept in the light and air, but if this is impossible the cellar might be tried. Laying pot-plants "on their side," is usually done to prevent drip-water from eoddening them in winter; there would be no object in doing this, probably, in the cellar, and the plants would be more likely to live if they were allowed to keep their natural perpendicular. In any case they should be hardened as much as possible, and kept in the open air until severe frost threatens them, then dried thoroughly before they are placed in the lightest and most airy part of the cellar.—I. L. R.

BEDDING "GERANIUMS."

THE long protracted drought caused bedding "Geraniums" to flower profusely, but with far less leaf-growth than usual; consequently, many owners of gardens have found it difficult to provide the requisite number of cuttings; but, as a rule, there are far less losses among cuttings in such a season as this than there are in wet, sunless seasons, as the growth is firm and well matured, and the "Geranium" will stand any amount of drying when in the cutting state, but very little wet without rotting; but as a safeguard it will be well to take care of as many old plants now as possible, and to do this they should be lifted before any frost has affected them, and pot them up singly or also put them thickly in boxes, working fine light soil among the roots, and giving one good soaking of water to settle the soil down firm, and then keep moderately dry. I pick off all the large leaves, only leaving the small ones on the tips of the shoots. They do very well in any pits or frames until the end of November, when they must be put on shelves near the glass in any light house where a little warmth can be applied, more with the object of dispelling damp than of raising the temperature, as it is not advisable to excite growth before the days begin to lengthen. Keep them just moist enough to prevent the leaves flagging, and as soon as the sun begins to shine in spring give more water and they will rapidly develop into fine plants, and supply plenty of cuttings.

J. G. Hunt.

4791.—Plants for a vinery and greenhouse.—The *Chrysothemum* is one of the best plants to grow for flowers during the autumn and winter, and they can be kept in the vinery whilst in bloom, also afterwards; in fact, this is the usual place for them in many gardens. Then you could have in the greenhouse, provided it is heated, *Zonal Pelargoniums*, *Fuchsias*, *Chinese Primulas*, *Persian Cyclamens*, *Ferns*, *Myrtles*, *Tuberous Begonias*, *Daffodils*, and other hardy bulbs in pots, small *Camellias* and *Azaleas*, and as creepers the *Lagereria* (crimson and white), *Plumbago capensis*, *Tree Carnations*, *Heaths*, especially *Erias hyemalis*, *Cinarrhalis*, a variety of hard-wooded things, and *Salvias*. But much depends upon what artificial manure can be given, the position of the house, and the amount of time you can devote to the plants.—C. T.

—*Chrysothemum* will do very well in the vinery after most of the Grapes are out, and as they make most of their growth outside, they only require shelter to perfect their flowers. *Mignonette*, *Primulas*, *Calceolarias*, *Cyclamens*, and *Zonal "Geraniums"* are easily grown, and will succeed well with just a little warmth in winter; but only the hardiest kinds of *Zonals* should be included, as, for the most part, to do them well they require more heat than will be good for the Vines. For summer grow *Tuberous Begonias* and *Fuchsias*, both of which may be placed outside when the Grapes require more attention. Many other plants may be, and, in fact, are, grown under Vines, but the above are easily managed.—E. H.

4793.—A leaky roof.—The only alternative in entirely stripping and replacing the roof is to carefully scrape away all the loose putty, both inside and out, and rake out any faults between the glass and bars. Then carefully fill up all the spaces with fresh putty, pressing

it well in end smoothing off neatly. Lastly, paint the bars one or two coats, both inside and out, letting the side of the brush or "tool" just catch the edge of the glass all along the sides. If properly done there will be no drip subsequently, but the whole must be quite dry at the time, or neither putty nor paint will tick.—B. C. R.

4790.—Greenhouse plants.—It depends upon what classes you intend to cultivate in. Your question is very indefinite. I presume you are an amateur, and if so could not do better than select a Zonal Pelargonium, either double or single variety, or a Fuchsia.—C. T.

—A Tuberosa Begonia and a Zonal or Ivy-leaved Pelargonium, or a Fuchsia, would be very suitable. If you want something more uncommon, a blue Plumbago and a nice white, yellow, or crimson Abutilon might be better.—B. C. R.

4817.—A hot-water boiler.—I cannot make out from your description what kind of a boiler you have got. The only "Star" boiler I know is an independent cylindrical (upright) one. Is yours a kind of saddle or a conical boiler (cast-iron)? Write again, giving a rather more lucid description of the boiler, and I will tell you how to set it. I am very glad to hear the coil works so well.—B. C. R.

—From your description of the arrangement of the pipes they are lowest at the far end, or else on a dead level. Engineers make good work if they get a 1-inch rise in a length of 9-feet pipe. You had better ascertain whether the top pipe is too low, and alter it by raising both the top end bottom pipes, and if it is a small hose the rise should be 3 inches from the boiler to the far end. With regard to your next question a 2-inch pipe fixed on the boiler nose would not hinder the circulation, seeing that it leads into a 3-inch. You are not likely to get the 3-inch pipe to fit securely on the nose of the boiler that is only 2 inches in diameter, unless you make the joint with iron cement. The proper plan, however, is to have what is known as a diminishing piece 2 inches diameter at one end, and 3 inches the other, there will be no difficulty then in the fitting. You do not say what material you used to make the joints with; it was evidently bad, or else the joints were indifferently made. By ramming home first some stout cord so as to fill up about an inch of the space, and filling the remainder with Portland cement, a perfectly strong job can be made. With suitable pipes the india-rubber rings make the best of all joints.—J. C. C.

4805.—An unheated greenhouse.—Three inches will be too near to the glass to train Roses. The frost will not hurt the shoots probably, but there is not room enough to develop either flowers or foliage properly. Give them 6 inches, and although that is rather too cramped, still they may do. Roses in pots may be grown beneath, provided the plants on the roof are kept moderately thin of growth.—E. H.

—The frost in winter is not likely to injure your Roses that are so near the glass. It is in the spring of the year, when the young shoots are sure to touch the glass, that they will suffer, and if they are not killed the leaves are sure to get disfigured. Six inches between the glass and the wires is not near enough. Fourteen inches is not too many. The nearer the Roses are to the glass the more they suffer from the attacks of insects and mildew, because it is more difficult to apply any remedies.—J. C. C.

4790.—Lobelia erinus.—To preserve a good strain of the above they must either be propagated from cuttings or division of the roots. Seedlings do not come so good. Towards the end of September out off the top of a few plants, then lift them as soon as new growth commences. You will find that they can be pulled apart so as to leave some roots upon each piece. These, if potted up or dibbled in round a pan, will make nice clumps next spring. Should you not have enough plants each of these may be further divided in the same manner, except that in the spring there is no need to cut them down previous to parting. This is a very simple and sure plan, all that is necessary to keep them through the winter being a cool greenhouse temperature.—P. U.

—The best place to keep Lobelias through the winter is on a shelf near the glass in a moderately warm greenhouse, which is freely ventilated on every favourable opportunity. Damp is the thing to avoid. If you have a lodge in the centre of the plant they die. Young plants which were divided last August keep the best.—E. H.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editors of GARDENING, 37 Southampton-street, Covent-garden, London. Letters on business should be sent to the Publishers. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appear.

4820.—Tortoise in a garden.—Will a tortoise live during the winter in a garden, and what should it be fed with?—B. D.

4830.—Poplar hedge.—Would someone kindly tell me whether it is now time to prune a Poplar hedge, which has been neglected?—W. E. H.

4831.—Roses pegged down.—Should Roses which were pegged down in the spring be tied up during the winter, or protected in any way?—B. P.

4832.—Lemon Verhena.—What is the right time of the year to plant Lemon Verhena out-of-doors, and where can good plants be obtained? Locality, Dorsetshire.—B. P.

4833.—Paint for fruit-trees.—Will anyone tell me what are the ingredients used for painting over the stem of fruit-trees? I know parisian is one of them.—JANE GOLLEY.

4834.—Book wanted.—I should be much obliged if anyone could inform me where I can obtain a copy of Mr. Dorian-Smith's pamphlet on gardening in the Solly Isles?—C. F. WALKER.

4835.—Begonia seed pods.—Would someone kindly tell me the best way of drying Begonia seed-pods, as I get very little sun in my greenhouse, and have some splendid pods I wish to ripen?—ROSEWELL.

4836.—Planting Poplars.—Will anyone kindly tell me how to plant Poplars to form a hedge 6 feet high, and whether to begin now? The situation is near the sea, and the soil is cold, heavy, sandy loam.—W. E. H.

4837.—Hardy fruits.—Will anyone kindly tell me the hardest kinds of fruit of all kinds for an orchard to grow in a very bleak place, and how to treat them? Soil, very stiff loam, clay bottom. Locality, West Derby.—E. J. H.

4838.—Carrots for show.—What are the best varieties of Carrots for exhibition, and when should the seed be planted to have them fit for getting by the end of July? A few hints how to grow them will be gladly received.—LEARNER.

4839.—Treatment of White Pearl Tuberoses.—Will anyone kindly tell me the proper treatment for White Pearl Tuberoses? I have a little stock heated with fire, which I can keep at about 40 degs. in winter. Would this do?—W. D.

4840.—Treatment of Roses.—My Roses have made enormous shoots since July, but there have been no blooms, and the first blooming was very poor, in spite of constant watering. Directions as to present and future treatment will oblige.—M. L. E.

4841.—Standard Roses.—Will anyone kindly tell me which are the best kinds of bush or standard Roses for growing in a very bleak place? I want them free and strong. Soil stiff, and clay bottom. How should I treat them? Locality, West Derby.—E. J. H.

4842.—Early Peas under glass.—Will someone kindly tell me if I could grow Peas to perfection in the border of a Tomato-house? When would they come into bearing? I sown the first in December? Also what sort would be most suitable?—AMATEUR, Devon.

4843.—Onions for show.—I shall be greatly obliged if someone will give me the names of the best Onions for show purposes, globe and flat varieties, and what time should the seed be sown to get them ready for showing in August, and how should they be grown?—LEARNER.

4844.—"Canker" in Apple and Pear-trees.—I am anxious to know how to prevent "canker" in Apple and Pear-trees. Several in our garden are much injured by these lumpy excrescences on the branches and twigs, which almost kill the bearing shoots and prevent fruiting.—BIRRA.

4845.—Treatment of "Geraniums."—I have some "Geraniums" grown from seeds sown last spring. They are now in 5-inch pots, but do not show any sign of blooming, and seem to make little progress. How ought they to be treated, and when should they bloom?—M. L. E.

4846.—Transplanting Laburnums.—I should be glad to know the proper time to transplant young Laburnum-trees which have grown in my garden from seed taken from the old trees; also kindly say if any special soil is necessary, and should they be pinned before or after planting, or when?—M. B.

4847.—Sowing perennials.—It is too late in the season to sow seeds (perennials) salsolom. I am anxious to have a good show of flowers next spring and on the 15th of the season in a border that faces the house, and which has Lupinus, Delphiniums, Aquilegia, Campanulas, Gladiolus, &c.—PERRYBRANCE.

4848.—Peaches and Tomatoes under glass.—Is it not possible to grow Peaches well on the back wall of a lean-to Tomato-house? I train the Tomato-plants on wires under the glass. The culture are 14 feet long, consequently there would be plenty of light until, at least, to the end of July.—AMATEUR, Devon.

4849.—Large Apple-trees.—Last spring I cut the middle branch out of four large Apple-trees to open them out. About six shoots have come from each out. I would like to know what to do with these and when to cut them back? They have all done well this year. Two are Lord Suffolks, the others are like Benhelsa.—OLD SUBSCRIBER.

4850.—Cauliflower and Cabbages for show.—Will anyone kindly give me the names of the best Cauliflower and Cabbage (red and green) for exhibition, and when should they be planted on as to get them fit for showing by August? A few hints how to grow them would be very useful. Locality, West Riding, Yorkshire.—LEARNER.

4851.—Climbing Roses in a bleak place.—Will anyone kindly tell me the best kinds of climbing Roses, very dark red and white, and other colours, to grow in a very bleak place? The house stands upon the road, with fields all round about—nothing to shelter whatever. Also when to plant them? Soil, heavy clay bottom. Locality, West Derby.—E. J. H.

4852.—Violets in a conservatory.—Will someone be kind enough to tell me if I can grow these in a little unheated conservatory? I want them to bloom early. If I grow them outside should I need to protect during the cold weather? The soil is here good, and Bournemouth so mild perhaps they may grow well out-of-doors. Any hints will be thankfully received.—ELLEN.

4853.—Malmaloon Carnations.—I have a large quantity of the Malmaloon Carnations, this year's layers, potted and standing in cases in a sheltered part of my garden. The stems of a number of them are covered with a kind of "blister." The same is led with a reddish powder resembling rust. Will any of your readers tell me the cause and remedy?—S. H. S. K., Birmingham.

4854.—Maiden-hair Ferns.—I have four fine Maiden-hair Ferns. Two of them I keep in the house for a week at a time. They then are weak in the greenhouse, put on the floor. They are wasted, soaking them well, before bringing in, and afterwards they are taken out again to the greenhouse. Is this a right treatment? One of them is looking very pale and yellow.—PERRYBRANCE.

4855.—Rose Jean Ducher.—I have a Rose Jean Ducher against a wall, which grows luxuriantly and down freely, but the blooms do not open. They are clubbed, and fall off in a lump. I had two most abundant blooms spring and summer, but there was badly a good flower amongst them. Do you think the plant is worth preserving, or can you suggest any remedy?—E. B., Devonshire.

4856.—Renovating old Aparague beds.—When is the time to do it? Now? It is very old, and bears tolerably in the centre, but the sides have become worn away, and need the roots to be cut out. It is necessary to buy fresh roots for the sides, which are to be extended 1 foot 2 feet. Can you inform me of what material to rebuild sides, and if fresh roots are planted will they be fit for cutting in spring?—PITZLEW.

4857.—Tropaeolum speciosum.—I have a plot of this set out in a box 18 inches each way. It did not grow much during the summer, but has done so lately. Will someone kindly tell me the proper way to treat it during the winter? Is it factor east, and protected from the north and south winds; also is it well-work the best to train it on? Any advice as to its culture will be thankfully received.—STYVAX.

4858.—Greenhouse roof.—Will any of your readers give me any information regarding the durability of a new substitute of best, would it be much better both in summer and winter; but as it has a slight yellow tinge I am afraid it would injure the colour of the leaves, and by non-developing the green colouring, will make the plants tall and stately.—FRIGIDUS.

4859.—Cut blooms for the house.—I am wishful to grow a lot of plants which will give me a succession of cut blooms for house decoration from early spring until frost sets in. Will anyone kindly give such a list, naming the months in which the plants bloom? I have already got a few sorts potted out and noted, but I have not seen a full list having special reference to cutting for house decoration.—E. COOPER.

4860.—Plum-tree not bearing.—I have here a large number of fruit-trees of about thirty years' growth, mostly bearing well, but the finest of all in shape and size is a Plum-tree, which, although a fine bloomer, for some years has not fruited. The tree is in an open space on side of hill, facing south-west; soil, heavy, wet clay. I have tried manuring heavily without result. Do not know whether I would a liberal cutting-back be of any use?—H. Z. C.

4861.—Rose Souvenir de la Malmaloon.—Will "J. L. O." or "P. U." kindly inform me if the above Rose is in free blooming and as lasting budded on the Brier as on its own roots? I am thinking of making a bed of Malmaloon Roses, and do not know whether to procure it budded or not. Dean Hole states in his "Book of Roses," on page 4, that it is essential it should be on its own roots. I could more easily procure them on the Brier. Would these do?—J. CROUCH.

4862.—Aralia Sieboldi.—I have in my greenhouse a fine Aralia Sieboldi, which has flowered again this year, as it did last season. I shall be much obliged to know whether the small, berry-like formations are the seeds, or whether, when the flower fall they will be produced there? I should also be glad to know whether I can propagate from seed, and, if so, how? The plant is a very strong and healthy one, and nearly 4 feet high. Its lower stems are rather too pendulous, to the detriment of its previous Palm-like effect.—LONGMAN.

4863.—A span-roofed greenhouse.—I have a greenhouse with span-roof rising from a 6 feet wall on the north side. It is 15 feet by 7 feet, seven, 5 feet high, and contains 6 feet. I intend having it sufficiently to keep cut fruit with one of the plants of Toop's stores. Will anyone contribute who has tested these kindly inform me on the following points:—1. Would a radiating hot air

apparatus or a hot water be the most effective as a heat producer? 2. Would combustion be equally good in either? 3. Which would wear best? 4. Would a common oil be so economical as a better kind? My questions relate to the differences between hot-air and hot-water stoves, not to the relative values of the different makers.—J. PEARCE.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

4844.—Treatment of Cyprididms (J. W.).—You must not dry these plants during the winter. They have no real resting season, but require a somewhat lower temperature and less water.—M. B.

4895.—Odontoglossum Oro. Skinneri (T. Waktin).—Your plant of this, which has a spike of bloom from the top of the bulb, is flowering in an unusual manner. It should proceed from the base. Perhaps it has already bloomed from that place? I do not think you need fear any harm to come to your plant. I have had similar complaints from various parts of the country.—M. B.

4896.—Flowers beneath trees.—James Hudson says: "We have here some fine tall Chestnut-trees which stand beside the carriage-drive to the house. The ground beneath them is dry and bare at any time, but this season it has been quite an oasis. What can I do to improve it? Well, now, I know of several good places, and I have advised the owners to plant it with St. John's Wort (H. corymbosum), which produces good green leaves and large, handsome yellow flowers.—J. J.

4897.—Odontoglossum hastilabium.—Eric sends a fairly named variety of this plant for naming. It is blooming at a very strange time of the year. I have usually had this species flower through the spring months. It has been known for about fifty years, and it requires a slightly warmer temperature than many other species of this genus. I have found it succeed under about the same conditions as O. grande and O. Inesleyi; but it does not like to be so dry as these kinds in the dull season.—M. B.

4898.—Hemaphysids (Matthew Collins).—These plants are not all of the same set, although they belong to the same natural order, but the kinds from the West Coast bloom at different times to the Cape kinds. Many of the seedlings are extremely beautiful. The Cape kinds which you name should be potted in good loam, and be well drained, and when at rest they should be kept quite dry and in the greenhouse, but the kinds from the warmer parts of Africa should be kept in a cool stove, when dry and resting.—J. J.

4899.—Mandevilla suaveolens (the Ohill Jasmine) (C. Hubbard).—You have here one of the most lovely climbers that can be grown to the greenhouses, where space can be afforded it. As a pot plant it is most unsatisfactory, but when planted out in the border, well drained, and in a mixture of peat, loam, leaf-mould and sand, it will grow rapidly and bloom profusely, scenting the air with great fragility. When the blooms are past the shoots should be thinned, and those to remain should be cut back nearly to the old wood.—J. J.

4870.—Cyclamen flowers.—J. Hutchins sends me a nice bunch of these favourites. They are the first I have seen this autumn. He tells me these are from plants about fifteen months' old from seeds. The strain is superb. One thing I have noted about the growers of these flowers for market which I think is scarcely *en fait*, and that is the early flowers are all pulled for bunching up, and when the last whorl of blooms are open they are left on, and then the plants are run into the market and sold. This is a ruse that many of the buyers of the plants find out only when they late.—J. J.

4871.—Venus Fly-trap (Dionaea muscipula).—Inquirer sends a leaf of this plant, asking if it is not a Pitcher-plant, to which I must give him a flat denial; but it is associated with them as one of the carnivorous plants. The leaves are surrounded with long and stiff hairs, and the insides of the blades have numerous slender hairs, which, when irritated by the movements of a fly or other small insect, causes them to quickly close together like a trap; hence the vernacular name given above, as well as its scientific cognomen. The leaves remain closed whilst any movement of the insect is felt.—J. J.

4872.—Soldanellas (M. Wood).—These are all small growing alpine plants belonging to the order Primulaceae. They grow naturally near the snow line. The worst enemy they have to contend with as cultivated plants is the drought, but yet they do not like to be damp and wet. When grown strong and well they may be easily increased by dividing the roots. They should be well drained and the soil kept in a good porous condition. It should consist of good sandy loam, mixed with a little peat. The following kinds send most readily obtained, all of which are blue or violet: S. Clusi, S. alpina, S. minima, S. montana, S. pusilla, and S. Wharriell.—J. J.

4873.—Odontoglossum Lindenii (C. Curtis).—The flower you send does not represent a very showy or attractive kind. I at one time thought it to be an Oncidium, but at least I came upon some flowers which I obtained some years ago from Southampton, which put me right in defining your plant. It is a species which was found by M. Linden about fifty years ago, but it has not been in cultivation more than half that time. Its distinct yellow flowers are small, and the sepals and petals, although prettily undulated, are narrow. You may depend upon it that the Orchid is scarce, but there is little demand for it because it is not a pretty flower.—M. B.

4874.—Oncidium varicosum.—Orchid Lover sends a flower of this species, which is very brightly coloured, but it is by no means the variety Rogersi, and not even the large-flowered form called major. I do not know that it was sold with a view to deceive, but perhaps the person that sold it had never seen the true Rogersi, and in all probability my friend did not pay the true Rogersi price for it. I should imagine he is in a position to see a "Solist. Orchidaceous Plants," by Robert Welford. If he does not possess it, where he will find the true plant is given in the second series, t. d. Yours is quite the Golden form of O. varicosum.—M. B.

4875.—Orchid-house (D. J.).—The house you have built for these plants should be devoted to the growth of Orestiades, and other Orchids which would grow well under strong light and sunshine, and you should have an iron framework put upon the roof to let your blind run upon, and to keep it about a foot from the glass, which would have the effect of maintaining a much lower temperature. Respecting the house you mention, 13 feet is a curious height for plants that do not exceed 2 feet, but I would advise you to fill the centre with Palms and Ferns, and to raise the side stages, and these might be used for the Odontoglossums and other cool Orchids.—M. B.

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GARDENING ILLUSTRATED.

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CHRYSANTHEMUMS.

CHRYSANTHEMUMS FOR SMALL HOUSES.

If Chrysantheums are wanted purely for the greenhouse, not for showing, they must be grown naturally—that is to say, with little stopping of the shoots or removal of the buds. To let a plant grow in its own way under glass signifies that it produces a profusion of very small blooms and looks weedy. In the open one need stop very little, or not at all, as there, even if small, the flowers make a show of colour. Beautiful plants may be got very easily if careful attention is given to all stages of growth, to get them clothed with foliage to the base. Each stem should bear a flower or flowers, and when in full beauty such plants give far more pleasure to friends than the severely trained specimens—the blooms, as it were, dotted over the surface. The outtings need not be taken before the month of February or early in March, and they may be either placed in 5-inch pots, filled with good soil all round the sides, or singly in 6-inch pots, the latter plan being preferable. Loam and leaf-mould, mixed with a fair proportion of sharp silver sand, forms the best compost, and put under each outting a little sand; this makes the chance of "damping" off less remote. Put a few crocks in the bottom of the larger pots, and one or two in the smaller ones, to prevent damping off. Use new pots if possible; but whether new or old they must be quite clean, and if new soaked a few hours in water before being used. The Chrysantheum is naturally hardy, and the fine old bushes one sees in cottage gardens are evidences of this—glorious masses that have braved many winters unharmed. Avoid oddling the outtings; although they may be struck in an ordinary cold frame there is danger from frost. It is better to have a propagating frame in an ordinary greenhouse, with a temperature of about 45 degs. When growth is commencing give air and water cautiously, otherwise they will damp off. When the outtings have filled each little pot with roots shift them singly into 4-inch size, and stop them when about 5 inches in height. The next and only other stopping should be when they are in 6-inch pots, the time to shift them into these being April. Some kinds will require further stopping, but not the majority. Grow them freely throughout. Few plants suffer more from check than the Chrysantheum, the growth getting stunted. Always, therefore, attend closely to such simple operations as potting and watering. The plants are better if kept in the greenhouse, and plenty of air maintained about them. Where there is no greenhouse the frame must be used. The final potting must be given, and early in June or late May is the best time. The 6-inch pots must be full of roots, and the final size will be 9-inch or 10-inch. Turfy loam is the chief ingredient in the soil—say, four parts, to which add well-decayed manure two parts, leaf-mould one part, and a sprinkling of crushed bone and soot, with sufficient sharp silver sand to keep it fairly open.

Mix the whole thoroughly well together, and if too heavy add a few particles of charcoal, which will help to keep the compost open.

POT FIRMLY.—This is most necessary, and use a potting-stick, as it is not often one can make it firm enough with the hands. In the earlier pottings it will not be necessary to use a stick, as the soil may be made sufficiently firm in the usual way. On the clean well-arranged crocks, place a little of the rougher parts of the compost, which prevents the finer particles of soil from getting down and stopping up the drainage. During the summer keep them in the open in a moderately-sheltered spot, standing the plants upon a layer of coal-ashes to prevent worms from getting in the bottom and disturbing the drainage. During the summer, and until the buds are expanding, manure-water must be given, giving first cool water, but in July this may be alternated by liquid-manure; give weakly at first, but as the plants advance towards the flowering stage of increased strength. No liquid-manure must be given until the pots are well filled with roots. As regards disbudding, as the varieties grown in this way consist chiefly of the Japanese, remove the crown bud to promote the production of shoots. One cannot give any hard-and-fast rule, as in some cases, the singles for instance, the plants need not be disbudded. It must not be thought that there is any limit to the list of varieties for culture in this way. All, or at least the majority, of those seen at exhibitions may be grown thus. I have seen plants of Edwin Molyneux bearing splendid blooms, and a plant of it in full beauty is a picture. Lady Salborne is delightful when seen bearing dozens of its pure-white flowers, La Nympe (rose-purple), and Tendresse (light-mauve-lilac) can be made literally mounds of bloom by this process. Very beautiful amongst single kinds is Miss Rose, the flower large, and the plant is remarkably fine. It is impossible to see the leafage for blossom. Mary Anderson, a good white, is almost as vigorous, but the flowers are larger. The beginner should leave the Incurved kinds alone, and commence with the Japanese and Singles. This natural way of growing the Chrysantheum must not be confounded with the outting-down process. The outting down is simply to reduce the height of the plant. Cut down the late-flowering varieties first, then those that bloom in mid-November, and the early-flowering kinds, such as Klaisa, in the middle of June. If very dwarf plants are desired, cut them down to about 5 inches of the soil, and the others from 8 inches to 1 foot. When out down, place them, if possible, in a cold frame, water with care, and syringe daily to promote the growth of sturdy shoots, which should be thinned out to about three to each stem, selecting the strongest, two or more being retained if the varieties bear small flowers. This having been done, repot them, and 9-inch pots will be quite large enough for the final shift. When fairly established in their new pots place them in the open, allowing plenty of space. It will be well to put a stake to each shoot, and choose the first buds that appear for the production of flowers. They should be rubbed if they appear before mid-August. With plants, with this treatment, will be quite dwarf,

clothed with rich green foliage to the edge of the pots, and the flowers of good size. The outting-down system is closely followed by many growers, especially when they wish to make neat groups. It is a reaction from the former plea by allowing the plants to grow 8 feet or even 9 feet high—tall, lank specimens, with one or two blooms perched on the top of the quaint stems. Some varieties, such as John Sewerd and Avalanche, are naturally dwarf. V. C.

4813.—Growing for market.—It is very difficult to advise anyone what to grow for profit, without a knowledge of the locality, for nearly everything hinges on whether you are close to a market, as some goods will hardly pay for carriage, but if you are within easy distance of a market, you may grow a good many things in such a house as described. French Beans would do well, especially after Christmas, when the sun's rays help vegetation very much under glass. Early Potatoes, of the kidney type, or Sharpe's Victor, if planted at once in the soil in which the Cucumber or Tomatoes have been grown, enriched with some good loam and leaf-mould, and a row of Scarlet Radishes could be grown between each row of Potatoes, and pulled for market before the Potatoes needed all the space. But if there is a ready sale close at hand I should say salading of various kinds would pay as well as anything. Mustard and Cress give a very quick return. Lettuce, if good strong plants of the Cabbage kinds are available, ought to sell freely—at least, the French make a lot of money out of them in spring. Young Carrots of the Short French Horn kinds might be tried with success, and if you have strong crowns of Rhubarb, lift them and replant in the house, for all these sort of things sell if got in early. Green Mint is very easily grown, and comes on with a very moderate heat, but you must not expect very high prices. There is too much competition for that nowadays.—J. G., Gosport.

Begonia tubers.—Do not despise little tubers of Begonias raised from seed sown this year. They are now going to rest, and should be kept on the dry side all the winter, where frost cannot reach them. They may be left in the seed-box untouched in a spare room. In the spring, with returning warmth and a little moisture, it is most interesting to watch the little seed-like tubers starting into life. Give them the warmth of the sun's rays or other genial heat, with not too much moisture, and they will soon be ready for potting off into small pots filled with a light rich compost. Free ventilation produces a sturdy habit of growth, and they seem to thrive all the better for a syringe once a day (before noon) until the buds appear.—G. H. W., West Brighton.

Petroleum and water.—I think that some of our readers would be glad to know of an easy method of mixing petroleum with water. Take two parts of milk and one part petroleum, mix well. The paraffin will then mix freely with water for use as an insecticide.—ARTHUR ELSON.

4807.—Using manure.—By all means lay up the manure, let it decay, and dig it in in March or April. Nothing so soon renders soil soft and fills it with worms and other insects as covering it with manure during the winter. (Rubbish, well-decayed material is much better for most herbaceous plants than fresh.—B. C. R.)

GARDEN WORK.

Conservatory.

We are fast approaching the short dreary days of winter when blossoms under even the most careful treatment will damp. The atmospheric conditions must be fresh and buoyant, and to ensure this steady fire will be necessary, so that air may be given more or less every day when not raining or freezing. In summer plants in bloom will use up a good deal of moisture, and if more than is needed is given, no great harm will be done; but in winter if too much water be given to Chrysanthemums or other plants in bloom it interferes with the opening of the flowers in more ways than one. Some of the large blossoms of Chrysanthemums are difficult to keep, chiefly owing to the high feeding which has resulted in the abnormal size. Where many Chrysanthemums are grown, some at least should be grown more naturally than the large blooms are for the sake of their keeping properties and for cutting purposes. The large blooms it is true make a grand show when cut for a short time, but they will not keep. Give liquid-manure to Chrysanthemums in small pots. Camellias also and Azaleas will be benefited by an occasional watering with weak clear liquid-manure. It is now the fashion where there are several plant-houses to group the plants together in families, thus Cyclamens and Chinese Primulas may be grouped together. Hard-wooded plants again do better by themselves, a few temperature-suiting ones of these better than when much heat is used, especially when the atmosphere is moist and stuffy. Australian plants will bear more heat than would be good for those Cape Heaths and East plants, though it does not follow that the Australian plants are the better for so much heat. A little artificial heat from this onwards through the winter will be desirable to keep up the necessary buoyancy of the atmosphere; but harm is more likely to be done by giving too much heat than too little. After fires are lighted regularly the borders where plants are growing in them must not be permitted to get too dry. Camellias will take a good deal of water at the root now. It will be advisable, if the plants are heavily laden with buds, to give them some, so that each shoot only carries two or three blossoms. Luculla gratissima will now be showing flower-buds, and should have weak liquid-manure occasionally. The Hebeanthemum family are showy winter-blooming plants. For covering walls and pillars they are most useful.

Stove.

Give Eucharis Lilies which seem disinclined to throw up flower-spikes weak liquid-manure—Cley's Fertiliser or Ichtheum in wine will do. A course of treatment of this kind if the plants are strong will soon bring up the spikes. Late-stroke Primulas may also have an occasional dose of Cley's or guano to give substance to the scarlet bracts. These are plants which should be a strong feature in every stove now, and a few plants of the white variety form an agreeable change to so much scarlet where a large number are grown. Ravina humilis, a neat-headed, berry-bearing plant, is useful for winter decoration. I have used it sometimes for table-decoration for a change. Another pretty little plant at this season is the Centredonia rosea. When small standard plants were fashionable for the dinner table, these and other things were trained up to straight stems with a bunch of leaves and blossoms on the top; but it had an unnatural look, and the mop-headed plants did not please. Keep a very keen eye upon the plants liable to insect attacks. Watch for mealy-bug, and give it no quarter; it is the only way to keep it under. Night temperature about 65 degs.

Ferns under Glass.

Should slugs or snails be troublesome, lay some greased cabbage-leaves about, and examine both the Cabbage-leaves and the Ferns every night with a light. They may be easily captured when feedling at night. The small slugs are often troublesome on Maiden-hair Ferns, calling the young froods as they emerge from the crown of the plants. Ferns must not be permitted to get dirt dry at any season. Do not crowd the plants; it spoils the shape, and the fronds turn brown when much crowded. Specimens of Adiantum Falcifolium should be elevated a little to bring them into the light. No shading is required now. When a larger stock is required it is better to divide young plants than old ones. When large old plants are out up many of the pieces from the interior of the specimen may die.

Orchard-house Trees.

Any trees which require repotting or top-dressing should have been attended to before the leaves were down, though the leaves on trees in the cool-house are hanging longer than usual this season. In most gardens the orchard-house is filled with Chrysanthemums in autumn, and the trees burned outside, the pots being protected when frost comes with leaf litter. A little of the litter should be laid over the top, but not piled up the stems, as it may become a hiding-place for mice, and if the stems are covered the mice may nibble the bark under the litter. I have seen the trees injured in this way.

Cold Frames.

Give all the air possible to Violets, Camellias, and other hardy subjects, but keep out cold rains. Hardy plants, such as chalice aloe, wintered in cold pits or frames should have the pots plunged up to the rims. Carnations wintered in frames will be better if the pots are protected with Cocoa-nut-shire or dry ash.

Hot-beds for Forcing.

May be made up according to requirements. Leaves and manure in about equal parts make very safe beds. There is no fear of over-heating. The roots may be planted at once. A good size for beds at this season will be 4 feet in back and 3 1/2 feet in front. Must be built up firmly, so that the heat may be regular and steady.

Window Gardening.

The main object now is to keep plants healthy, and to move on steadily. Water must be given to evergreens when required; but during the short, dark days the con-

* In cold or northern districts the operations referred to under "Cold Work" may be done from ten days to a fortnight later than is here indicated with equally good results.

sumption of water will be much less. Ferns in a growing state must be kept in a reasonably moist condition, but not saturated. Ferns never do so well in a room in which large fires are burning daily, and perhaps gas at night, as when only an occasional fire is lighted. Some day in towns everybody will have the electric light, and then plants will flourish with less care.

Outdoor Garden.

The beds are now pretty well cleared at the summer hedges, and in the country the next few days many will be filled with bulbs and other spring flowers. Variety is always alarming, and where there is more than one set of beds or borders different styles of planting should be adopted. Beds filled with some of the handsome little gold and silver shrubs are dreary in winter, but they would be rather expensive, though if taken care of they will last several years. Some of the best things for shrub bedding are Cupressus Lawsoniana, Crocus viridis, C. L. Jutea, C. L. alba, C. L. Fraseri, Redinopis plumosa, E. p. aurea, R. aquifolia Valtia, New Golden Irish, Thujas, Crocus viridis, T. veranensis, T. occidentalis, Lilas Juniper, variegated Ilex, Eucunymus in variety, and Aucuba in variety. The beds need not be filled with shrubs. They may either be grouped in the centre, or be so arranged as to form recesses of either regular or irregular outline for sheltering masses of various kinds of bulbs or other spring flowers. Then as regards edging, more use might be made of the hardy Hedges where the soil is suitable—i. e., in light sandy districts. There is much variety in the hardy Hedges, and good plants can be bought cheap. Daisies, again, white and red, will flower all the winter if the weather continues open. I saw a bed of white Daisies the other day, which by their freshness reminded me of spring. Tufted Pansies are among the brightest things in beds or borders in spring. Beds or groups of young Lavender or Rosemary are very effective now. Sunb stock is easily propagated from cuttings or raised from seeds. Vinca clethra and Grape-vine are charming masses. Beds of Pansies should be got in now. It is time also Tulips were all planted. A friend of mine always pots his bedding Tulips, and plunges the pots in the beds, his object being to clear the beds early to make ready for bedding out.

Frut Garden.

The best Grapes for a cold-house are, I think, certainly Black Hamburg and Alicante. Both of these under ordinary conditions and fair treatment may be relied upon to colour well and ripen in good time in autumn. There is no doubt, of course, that the Alicante would be improved by a little fire, not only in spring but all other seasons if there came a wet cold week any time. Gros Colmar is a very fine Grape, but must not be over-cropped or it will not colour well. Foster's Seedling, though a good early forcing Grape, is of no use for late use, it is too small in berry. Anyone may tolerate a small Grape early in the season if the flavour is right, but it is quite another thing after August when the big Grapes come in. I never recommend old Vines to be got rid of when they are doing good work, but if a crop has to be sacrificed and a new border made always put in young Vines; they will stand more wear and tear and produce finer fruit than very old ones. The best time to plant a vine is, I consider, in spring, say about March or April, when the Vines are breaking naturally, and they are very often planted too near each other. Three feet is a very smaller distance which should be allowed for certain kinds, such as Golden Queen, Muscat, and Gros Colmar, I think 4 feet would not be too much. Golden Queen does fairly well in a cool house, and is a far away better Grape, except for forcing, than Foster's Seedling. Push forward the planting of hardy fruits. Remember that Apples on the broad-leaved Paradise are best for the small garden, only they being suitable rooting must have rich top-dressing in summer. Schilville, Laur's Prince Albert, Cox's Orange Pippin, Henshall Orange, and Starling Castle cannot well be beaten.

Vogtable Garden.

Numbers for bearing in February and onwards may be planted and taken on readily till the shortest day in past. Plants in bearing must not be heavily cropped, as if too much exhausted they will probably go off about February. The chief cause of injury is leaving the fruits hanging too long. Out as soon as fit for use even if some have to be given away. Very little ventilation will be required now, only just enough to cause a gentle circulation. Keep up steady fire. Hot pipes mean lowest attacks generally, especially in small houses. Occasional top-dressing with fresh turfy manure is much valued. Do all the mending with the finger and thumb till next March. This is only a question of stopping the shoots in time, pinning out the terminal buds will then suffice. Hot-beds may be made up now for Asparagus, Spinach, Rhubarb, Lettuce, and Carrots. French Beans will do better in pots in warm houses. They will come on very well in the Pine-stove. Second crops of Tomatoes will be heavy on healthy plants. Under good management it is no uncommon thing for Tomatoes to continue growing and bearing for a year. As they have been started in the beginning of the year by training in a succession of young shoots, they will continue to bear till the following Christmas, or even later if the right kinds are planted. In properly heated houses Tomatoes ought to run twelve months. It is only a question of keeping the plants healthy and giving nourishment. All the Celery, even the latest crops should be earthed up now, and there should be a stock of dry Fern or litter at hand for protection should severe frost set in. Up to the present Cauliflowers have been fine and need no protection except breaking a leaf or two over the heart, but the plants should be lifted and laid in some dry border where they can be easily covered when frost comes. E. HODDY.

Work in the Town Garden.

At last the frost has come and out of all plants of a tender nature outside. After a sharp night there is very little left now except the Michaelmas Daisies, Chrysanthemums of the harder kinds, Verolosa, Lauratus, and such things as Violet, and the present Cauliflowers are simply intended to grow in large towns; I have tried it over and over again, in all sorts of ways, and both indoors and out, but all to no purpose. Although Chrysanthemums in the open may remain in bloom more or less for some time longer, the flowers will have a weak-

dried appearance, but those grown under the protection of glass are vastly cleaner and brighter. The season of indoor gardening may indeed be said to commence now, for within the precincts of a town there will be very little of interest in the outdoor department from now until April is well in season at the earliest. Clear away the last of the bedding-plants at once, and refill the beds either with bulbs of sorts or with neat dwarf evergreens, such as Eucunymus (green and variegated), Aucuba, Box, Arbutus, Rhododendron, and Skimmia. Consider of setting in small growing varieties, look well for a time, but they cannot endure a smoky atmosphere they soon assume a shabby and miserable appearance, and sooner or later give up the ghost altogether. Unless Hyacinth and other bulbs are got in at once they will not do much good; it is quite late enough now. If after planting the beds are mulched with a couple of inches of fresh Cocoa-nut-fibre it will produce a very neat appearance, and tend to protect the tender tops when they rise. The best way to pot them carefully, shorten back the stronger roots, and either plant them singly in small pots (3 inches to 3 1/2 inches), or thickly in boxes, in either case with free drainage and some rather sandy soil made quite firm around the roots. Water them in well once, then let the lollaige dry, and remove to a heated greenhouse or sunny window, giving water very sparingly especially during severe weather, until the spring. Such old stumps always furnish plenty of nice cuttings in the spring, as if these are not wanted they will flower early and very freely, and make very stout, bushy plants. In the greenhouse every thing must be kept scrupulously clean and neat now; dirt, dead leaves, and insects are three deadly enemies to healthy growth under glass. Water should be given chiefly in the forenoon now, and then only to such plants as really require it, especially where the temperature is low. It is not as much frost-hent yet, except to stove or very tender plants, but frost must be well provided, and enough to be not wanted they will flower early and very freely, to keep the air in motion and prevent damping or decay. B. C. R.

THE COMING WEEK'S WORK.

Extracts from a garden diary from November 11th to November 18th.

Potted up Mint, Tarragon, and Chervil, to have a stock ready to hand when required. Moved all tender plants from cold pits to houses where the frost can be kept out. The stocks of bedding plants in cool quarters, but there are the means of keeping out frost and expelling damp when required. A very small amount of artificial heat will suffice for this if the plants are hardened by free ventilation. Shifted late sown Chrysanthemums and Primulas to flowering pots. Nothing larger than 6 inch pots has been used for these. A nice little specimen can be grown in a 6-inch pot, as a little manure can be used at the finish if necessary. Chrysanthemums coming into bloom are receiving a solution of Ichtheum guano every second watering, and the water roots come in to the surface as if they were anxious for the Ictis stimulant. Plants in small pots require something, and they pay for it. Cleaning Vines in early viney, afterwards whitewashing walls. House has been recently pointed inside and out. Outside borders have been covered with dry leaves and thatched with straw. The leaves will probably ferment a little and a little warmth may perhaps penetrate the surface, but not enough to unduly excite the Vines. Vine roots, if healthy, in a well made border will do their own better without much excitement, and the covering of leaves will keep up the temperature by preventing the escape of the summer warmth. Looked over the stock of Caladluma packed away on their side, see if there were any symptoms of disease. Have lost one of the delicate varieties through dry rot. Stragoc roots keep well in a dry state, but some of the delicate sorts are better not dried too much. If dried off thoroughly I find them do better in a rather cooler place than the stove. Gloxinias also keep more vigorously when not soaked to the roots while rooting. Made up a hot-bed with leaves and manure for forcing Asparagus, and having plenty of leaves a bed has been made for gently forcing Lettuces. The frame has also filled nearly to the top with leaves and soil, so that the plants will not be more than 4 inches or 5 inches from the glass. A little ventilation will be given and coverings will be used at night to prevent undue radiation of heat. Rearranged conservatory as so to make the most of the Chrysanthemums which are now in good trim, but every grower who has a large variety knows how difficult one of the varieties are to keep in condition, and how difficult it is to be careful in watering. Some people think they cannot give these plants too much water when in flower, but this is a mistake. The flowers on plants where the soil is in a constant state of saturation can suffer from damp. Pruned Gooseberries and bush fruit generally, spool attention is given to thinning, but to leading shoots are left rather long as the best fruits are borne there. On the contrary, lead Currants are spurred in close and only a few inches of young wood left at the top.

Growing Carnations.—I have read with great interest in GARDENING many articles on the growing and wintering of Carnations and Ploetees. I, myself, am a large grower of many years' experience, and I find, in planting out in the open, say in September and October many of the choicest varieties perish during a very severe winter. I now adopt the following plan with success: In October I take up carefully the layers of my Carnations and row them out in cold frames in sandy soil, adding a rich row mixed leaf-mould and sand; tread down firmly the plants. I put them 4 inches between each row, then give them a good watering, put on the lights, and tilt them up with tiles top and bottom of frame, so that a free current of air can circulate through during the autumn and winter months. Carnations do not grow so readily; it is the wet that rots them off. I have grown them in pots, but I find them in sales to cold in fact, but I have not found it as satisfactory as planting out in the soil in row in March. Take off the lights when the weather is fine to harden them off, and plant out in borders or beds second week in April. I never water the plants from the time of planting in the frame till April. As part of frame south.—GEOVAXOX.

THE KITCHEN GARDEN.

FORCED TURNIPS.

It does not appear that the Turnip is forced to any great extent in English gardens. In France, on the contrary, the forwarding of this vegetable forms an important item in garden operations. In most large private establishments a supply of early Turnips is considered indispensable; and such is the demand for this vegetable in Paris that very many market growers in the vicinity of that city make a speciality of its culture, some of them devoting a great number of frames thereto. For the first crop, which should be ready for use by the beginning of April, the seed is sown about the middle of January, suc-



Long Forcing Turnip.

cessive sowings being made to maintain a supply until the first open-air crop is ready to pull. Some years ago the Parisian market growers relied entirely upon manure-heat for forwarding such things as Carrots, Turnips, &c.; now, however, many of them have adopted hot water for the purpose, affirming that by its means they can obtain better results in less time. These early Turnips are really very good, and form early in the year an agreeable change in the vegetable supply. The culture is simple, a slight heat, sufficient to promote growth without inducing a too rank leaf development, accompanied by free ventilation on all favourable occasions, being the principal points to observe. J.

4838.—Carrots for show.—The best varieties are Scarlet Short Horn and the best variety of the Scarlet Intermediato. At most shows there are separate classes for these varieties. Get the ground trenched up now, and if the soil is bad keep it below. Work in all the light rich compost available—wood-ashes or burnt earth or charred rubbish. No fresh manure should be applied, but if the land is trenched a layer of manure may be placed in the bottom of the trench. Leave the surface rough, so that the frost can penetrate. Early in February give a top-dressing of lime and fork it in, and about the end of March or early in April—according to the weather—give a sprinkling of super phosphate, about 5 lb. or 6 lb. to the square rod, rake level, make firm. Draw the drills 15 inches or 18 inches apart. Sow the seeds thinly; cover by “shuffling” the feet along the rows, and rake down. Thin to 9 inches apart when large enough.—E. H.

4843.—Onions for show.—Get a good strain of Magnum Bonum. Sow a part of the seeds under glass in a gentle hot-bed in February; harden off when about 4 inches high, and then plant out in rows 1 foot apart, and 6 inches apart in the rows. Trench up the land and thoroughly manure it in winter. In February give a dressing of soot and some artificial manure, and fork it over again, and when the surface is dry in March sow the remainder of the seeds in drills, and when the young plants raised in the hot-bed are sufficiently hardened plant them out at the distances named above. Good culture, if given, will do the rest.—E. H.

4842.—Early Peas under glass.—There is no doubt good Peas could be grown in the Tomato-house, and if planted in December one

of the dwarf early Peas might be cleared off in time for the Tomatoes to be planted, though I doubt if Peas may be grown under glass so well as Lettuces or Parsley, or even Mint. American Wonder is still, I think, one of the best for planting under glass in pits or houses, or to grow in pots. Chelsea Gem is also a good kind.—E. H.

—Early Peas can be grown in a Tomato-house, but they cannot be expected to do well under the Tomato plants. They will succeed in any house if placed in a light position near the glass roof; and they ought also to have as much fresh air as possible. If sown on the first of December, and not forced too much, they would come into bearing early in April. The dwarf growing early Peas are best for forcing; they do not grow more than a foot high in flower-pots and bear very freely indeed. Chelsea Gem, American Wonder, and Carter's Daisy Pea—the last named is a distinct and handsome variety, producing much larger pods than the other two.—J. D. E.

4856.—Renovating old Asparagus-beds.—Increase the width of the beds by trenching and a suitable width on each side now, but do not plant till next April. As you want to get the bed into a bearing condition as soon as possible, purchase two-year-old plants, but do not cut anything first year, nor yet from the weekly plants the second year. It is this hard cutting which causes Asparagus-beds to wear out. The roots on the sides of the beds should not be allowed to get exposed. If you have space try the culture of Asparagus on common-sense principles by planting in rows 3 feet apart on the natural level, or even a little bit below it if the soil is deep and affords plenty of rooting-space. It is the crowding of Asparagus-plants together in narrow beds which kills them. An Asparagus-plant, if permitted, would easily fill a space a yard in diameter or more, and this free development would add immensely to the size of the crowns.—E. H.

EARLY PEAS.

VARIOUS ways are adopted in order to get Peas early; some sow in pans or boxes under glass, and afterwards plant them out, and others sow in the ground in the autumn when they are to remain. The first plan entails the most labour, but it has the advantage of being the surest, as the Peas are more out of the way of birds, rats, and end mites, as well as slugs, than when in the ground. The latter are such pests in some soils that it is almost impossible to prevent them from devouring all early green crops. In light, warm lauds, free from slugs, Peas may be sown any time now with every chance of success, but to make sure of them germinating it is not only necessary to secure good, sound, fresh harvested seed, but to have the ground in good order before putting them in, for if wet they are almost sure to rot, and to prevent this it is advisable to cast over them a little dry ashes or earth; either of these absorb the excess of moisture, and give the Peas a chance to make a fair start. To ward off mice I have known them covered with chopped Furze, but the best way is to trap the vermin, which may easily be done by means of a brick or tile with a piece of Rallis Grass and bait tied in it, in endeavouring to get which the mice bite through the Grass and let the tile or brick down. The way to set the tile or brick is to place a stick in the ground for the purpose of tying the Grass to, and having secured the lower end on a level with the earth, the brick or tile should be stood on it so as to bring the bait about 1 inch up the face, when the other end may be made fast at the top of the stick, leaving the brick or tile sloping at an angle of about 45 degs. Good traps may also be made by the use of pieces of lath, cut to form the figure of 4, and very small steel spring traps, made like those used for rabbits or rats, are sold at ironmongers, which are femons for catching mice and small birds. The best place to grow early Peas is on a warm border sloping to the south, where they should be sown in drills drawn about 3 inches deep, and from 3 feet to 4 feet apart, according to the kind grown, but whether tall or short, it is always advisable to give plenty of room between, so as to let in sun and air, on the full influens of which success in a pea-treasure depends. After trying many sorts I find none equal as a first early to Kenil-

Invicta, which not only is the earliest by some days or a week over all the newer kinds, but it is a prodigious cropper, and the Peas are of a fine deep colour and most excellent in flavour when cooked. To succeed this I should recommend William I., which should be sown at the same time; and to follow on after William I., Day's Early Sunrise, Taber's Perfection (or Dickson's First and Best) is also good, and the kind here figured, Earliest of All, is said to be an early variety of great excellence. In cases where sparrows are troublesome and eat the young tops of Peas, the safest protection are the Pea-guards, made of galvanised wire, which, although apparently dear at first, are cheap in the end, as they last a lifetime; but where these are not used a few strands of cotton run up and down each of the rows will generally keep these bold depredators from doing much harm. S.

NOTES ON DAHLIAS.

THE Cactus Dahlias show a marked advance each year, and it is worthy of note that this season the new kinds are of the true character. The type of flower that should be encouraged on the “decorative” kinds are not “Cactus,” although they sometimes pass as such. When Juarez was introduced by Mr. Cannell, a distinct era, so to speak, commenced. This still is one of the best of the “Cactus” class, but hides its scarlet flowers too much amongst the leaves. At exhibitions separate classes are now formed for this class alone, and when set up in fine bunches, their distinct shape and rich and varied colours are shown off to perfection. Hybridists will, I hope, add more still to this beautiful class, and the plants are more free-blooming, whilst the flowers are seen to greater advantage than in Juarez. One of the most distinct varieties is Countess of Gosford, which has small flowers of pretty shape, the florets slightly twisted and pointed. They are small compared to the others, and of a distinct yellow, shaded on the outer florets with rose. Bertha Mawby is a handsome variety, the flowers large, and the florets charmingly twisted, gradually tapering to a point, quite distinctive of the old Juarez. The colour is a distinct gain; but the riser must guard against getting into the flowers deep purplish-magenta shades, which have spoilt many beautiful garden flowers. Bertha Mawby has flowers of a deep-crimson colour, over which is spread a magenta shade, like a satiny lustre to the blooms. Countess of Radnor has blooms of a “Cactus” shape, and of delightful colour. This is a very beautiful variety, the colour yellow, touched with brilliant



Pea “Earliest of All.”

carmine, shot with a pellucid tint. Mrs. Basham has flowers of a very pretty rose colour, and of good shape. Delicate is a lovely red-rose, and allied tints melting one into the other, and a beautiful kind is Lady Florence, clear pale yellow, one of the most beautiful of all the new ones. OF ILLINOIS AT URBANA-CHAMPAIGN

INDOOR PLANTS.

EUCHARIS LILIES IN A COOL GREENHOUSE.

LAST winter a friend who had just returned from Ceylon gave me a quantity of bulbs which he had brought with him. These I found consisted of *Zephyranthes*, *Pancratium*, and *Eucharis*; in all they filled 70 pots when planted. The *Zephyranthes* I fully expected to bloom, and I was not disappointed, for I knew what they could and would do beforehand; but, although the *Eucharis* grow rapidly and looked wonderfully healthy, I was under the impression that they required considerable heat and constant attention to make them bloom. However, these plants are now rapidly developing both buds and flowers; one is already out, with as fine a cluster of bloom as anyone could wish to see, like a gigantic pure-white *Narcissus*, with petiolated or caudate petals and delicious scent. Mentioning the fact to a friend, he informed me that I should fail next year. "The flowers," he said, "were already formed in the bulbs when you potted them, but in India we often attempted to grow *Eucharis* out-of-doors in the Nellcherries, and they never flowered after the first year." I do not feel convinced, for it might be suggested that *Hedyotium Gardnerianum*, though it should flower a first year under cool treatment, would subsequently fall, and yet it produces year after year grand spikes a foot or more in height, and from 8 inches to 9 inches through at the base. The winter temperature of my cool-house sometimes falls as low as 48 degs. Fahr. I have no stove, and my small growing house is awkwardly situated as regards north-east winds, so that it is often impossible to look upon it even as a temperate house when sharp frosts and east winds come together. The *Pancratium* I can hardly expect to bloom, and I was not a little pleased at my success with the *Eucharis*.

A. G. BUTLER.

4790.—*Lobelia erinus*.—The proper way to winter *Lobelia* of any kind is to preserve a limited quantity for stock—say one dozen pots or so of which a great number can be got. After the best time in spring pot up in 5-inch pots, with a good sandy loam and plenty of drainage. After this stand them outside on a good bottom of coal-ashes. If labour is no object plunge the pots to the rim, thereby saving labour in watering. If they are kept dry they cannot possibly grow. Never let plants exhaust themselves by blooming. What is wanted are plenty of young growths. House before any frost beats them. Many people let them stand through the winter as they are. My opinion about *Lobelia* is that it wants to keep growing. I have a number of boxes prepared and filled with a nice, rather sandy compost; then my plants are divided and put into them, giving them plenty of room so as to guard against damping. If it does appear cover well with dry river-sand among the plants. I have at the present about fifty boxes on shelves in a *Chrysanthemum*-house, and the ventilators have not been down yet, except for wind. Air is a thing that must not be neglected in keeping *Lobelia* through winter, or the result will be very disastrous.—F. G. PETERINGER, Harrogate.

4853.—*Malmalson Carnations*.—The plants of the *Malmalson* are attacked by a very destructive disease, *Uromyces ostryopbillimus*. The reddish powder is the spores of the fungus, and one of these minute spores falling upon a healthy leaf will soon develop into a blister, which will in its turn burst and scatter thousands of spores. The only way to get rid of it is to cut off and burn the affected leaves. It may be necessary to almost entirely denude the plants of leaves, but there is no other effectual remedy.—J. D. E.

4839.—*White Pearl Tuberoses*.—*Tuberoses* may be grown in a cool-house, but the flowers will not come so fine, and the plants will, of course, be much longer before they flower—for instance, I had bulbs potted last March, and grown cool, which did not flower till the end of the summer. The *Pearls* are not in yet—at least, my stock has not arrived yet (Oct. 30th); but if potted and kept in cool-house they will not flower before next spring, possibly later.

ARUM LILIES (RICHARDIAS).

THESE are everywhere in demand about Christmas and Easter, and great numbers of them are brought into the market during these two periods. By some they are grown in pots throughout the whole year, while others, to economise labour, plant them in the open ground. Apart from the labour question (generally an important one), they form much stronger plants, and are therefore more likely to flower when planted out than when confined to pots throughout the season. Being semi-aquatic, a



Richardia tetiopsia and R. "Little Gem."

low-lying, but sunny spot, where plenty of water is at hand throughout the summer, suits them best. Towards the end of May they may be turned out of the pots, the soil shaken from them as far as possible without injuring their roots, and divided into three or four sizes preparatory to planting out. After all are planted, a good watering is given to settle the soil about their roots, and should the weather be favourable they soon commence to grow away freely. The only attention required during the summer is to keep them clear of weeds, and give a thorough watering whenever required. Thus treated, most of them form good, sturdy plants by the end of the summer or beginning of autumn, when they are carefully lifted, potted in some good open, loamy soil, and kept close in a frame till root-action recommences. At all times water must be liberally supplied, and when the pots are filled with roots a little liquid-manure may be advantageously given them. The seedling known as "Little Gem" grows from 9 inches to a foot in height, and it is a useful little plant. The illustration shows the ordinary form of *Richardia* and the seedling variety alongside of it.

4858.—*Greenhouse roof*.—I should strongly advise you not to use such a material for a plant house. It is opaque, and shuts out light. Ferns are the most suitable plants to grow in such a light, but it is found now that they need as much light as possible. The old theory of having green glass in houses in which Ferns are grown has long since been exploded. Glass is very cheap, and should only be used. You will have a sorry time with the plants by growing them under an opaque roof. Light is as essential to plants as to mankind.—C. T.

4852.—*Violets in a conservatory*.—On a sheltered border in the neighbourhood of Bournemouth, such *Violets* as the Russian, *Violeta Regina*, and *Welliana* (single), and the Neapolitan and Marie Louise (double), ought to flower more or less freely all the winter through. Strong clumps of the above, as also of *De Parne*

(double), and the Double White *Cemte Brezza* and *Belle de Chatenay*, in 6-inch or 7-inch pots, will bloom profusely in an unheated conservatory, if kept close to the glass, freely ventilated on mild days, and liberally supplied with water. The secret of getting fine plants and plenty of blossom is to plant out the rooted runners annually in April.—B. C. R.

4835.—*Begonia seed-pods*.—In order to ripen these properly, either the heat of the sun or that of an artificial character is necessary. If the greenhouse is provided with a heating apparatus, by all means get it to work at once, and with a nice genial atmosphere and not too much moisture, the pods will not be long ripening. In a low temperature, with moist atmosphere, they are very apt to decay prematurely, but enough fire-heat will prevent this. As soon as they begin to turn brown, and show signs of opening at the top, gather them off and finish them on paper, either in a sunny window or on the mantelshelf of a warm room.—B. C. R.

— Gather the pods when turning brown, and lay them on a piece of paper in a warm room; they will quickly ripen off. There will be sap enough in the pod to finish off the ripening if taken as soon as it changes colour. Lay the paper on which the pods are placed inside a saucer.—E. H.

4845.—*Treatment of "Geraniums"*.—The plants will flower all right in time, but as they are already so strong they ought not to have any liquid-manure or stimulant, and only enough water to keep the soil from becoming really dry. They must also have a moderate but not a moist warmth, with all the sun available, or they will probably not flower till the spring. If you have a heated greenhouse, remove them there, placing them on a sunny shelf or high stage, where the tops will be not far from the glass. Here, with a temperature of 50 degs. to 60 degs., and the treatment described above, they are almost certain to show flower shortly. I have always found seedling *Zonalis* bloom beautifully in the winter under suitable conditions, but they are apt to grow very tall.—B. C. R.

— The plants will not grow much during the winter. They may want repotting. From now onwards keep them on the dry side, giving only sufficient water during the winter to keep the soil just moist. Too much will kill them. Every decaying leaf should be picked off, and in spring they should bloom well, perhaps before, if assisted with a little artificial heat. Place them as near the glass as possible to prevent bigger growth. I mention this, as some stages in plant houses, small ones in particular, are far removed from the glass.—C. T.

— Seedling *Pelargoniums* have a tendency to make wood rather than bloom; therefore they should not be overpotted, but should be encouraged to make root. When thoroughly pot-bound give them liquid-manure two or three times a week. You will probably succeed better with cuttings from your seedling plants.—A. G. BUTLER.

— Keep the seedling "Geraniums" rather dry through the winter. Starve them a bit, and they will flower in spring.—E. H.

4863.—*A span-roofed greenhouse*.—Having tested both of the apparatus you mention, I give you the result of my observations. To question 1, I should say that you will get the most heat from a hot-air, radiating apparatus; but from a cultural point of view the warmth from it is not equal to that obtained from hot-water. 2, Yes. 3, About equal. 4, Certainly not, only the best oil obtainable should be used. You are wise in not wishing to use oil only for the purpose of keeping out frost. If everybody who requires a warmth in their greenhouse would act the same, the oil-stoves would not be so disappointing.—J. C. C.

— This is a rather puzzling question. The radiating stoves are very good and decidedly superior to the common ones in which the fumes escape directly into the atmosphere. A well constructed hot-water apparatus, however, possesses many points of advantage, and if the boiler is made on a sound principle, these are just as economical as the others. Some of the gas and oil boilers advertised I would not have at a gift, but those made by Toope are an excellent pattern, effective and economical. Of course, a hot-water apparatus is somewhat more costly than the other in the first place, but with ordinary care they last as long or longer than the radiators.—B. C. R.

4792.—*Leaky glass roof*.—It is rather difficult to advise from information given. If the glass is loose and parted from its bed it

would be better to take out and reglaze. If the top putty only is defective, and has come away from the glaze, take it off, fill the space between glass and bar with putty level with the glass. Make a pint of the following: 1 part litharge, 1 part good white lead, 1 part dried white sand; add sufficient boiled oil to make it workable, and keep it off your best coat.—J. B. R. D.

ROMAN HYACINTHS FOR EARLY FORCING.

DESPITE the fact that during the autumn and winter months we have in Chrysanthemums alone an almost unlimited supply of white flowers, there is always a scarcity, so to speak, of pure-white flowers. It is at times like these, and especially from October to January, that the pure-white fragrant spikes of these early Roman Hyacinths are so much in demand and meet with a ready sale. In their purity and fragrance they are not surpassed by any other flower during the time stated, especially when we compare the ease with which they may be grown to perfection, combined with their general utility. Another item of importance, particularly to growers of such things in quantity, is that they are quickly turned to account when abundance of bottom-heat is at command—an essential in the quick production of their useful spikes of flowers. But while heat plays so important a part later on, we must not lose sight of the equally important fact that to get the flowers early, an early start must be made in procuring and potting the bulbs. This, indeed, is of primary importance not only with these, but with all bulbous-rooted plants intended for forcing during the ensuing winter. It was very satisfactory to note the good condition of the earliest consignments. Larger I have seen certainly, but, taken all in all, the bulbs were of excellent quality. This was generally expected as a result of the good weather in May and June, a time when so many bulbs are maturing themselves, and given careful treatment from potting onwards, good results should naturally follow. If not already done, as it should be, procure the bulbs without further delay. Remember that the best quality are not only best, but cheapest, as these frequently give two and three spikes each; whereas the smaller sizes usually produce but one, and where space is limited, quality should stand before quantity. As soon as the bulbs are to hand, preparations may be made for potting them.

THE SOIL may consist principally of good loam fairly rich, but not too heavy; add to this some leaf-soil and sharp sand. The soil should be sufficiently moist at potting time to cause the bulbs to start roots at once; while if overdry, the chances are that the bulbs may still remain some time dormant, which would mean a decided drawback to their earliness. When well rooted, water may be given in plenty and that without fear. In potting I prefer to pot the whole of the season's crop at one time, or as near to this as it is possible to do it. Some prefer to pot in batches to produce successional batches of flower, but this latter can be better regulated by their introduction into heat than in any other way I know; indeed, they have a decided advantage over later potted bulbs, inasmuch as they will have made a maximum of roots, than which there is no greater or surer aid in all early forcing of bulbous plants. The later portions will, however, when treated as I have just suggested, require attention now and then to be sure that no mischief is being caused to any flower-spikes by the weight of the plunging material, and any that are pushing remove at once. In potting them, some 5-inch or 6-inch pots will be found as convenient as any, inserting as many as five or six bulbs in each according to size, hurrying them almost completely, and making them very firm in the soil. This last is needful to keep them in position, as if neglected, the bulbs will sometimes lift themselves out of the soil. When potting is completed, place them on a hard bottom of coal-ashes, and cover either with the same material or Cocoa-nut-fibre; if the former, 4 inches or 6 inches deep will suffice, but if the latter, they should be covered fully 8 inches. Unless coal-ashes are procurable that have been some time exposed to atmospheric conditions, I advise the exclusive

USE OF THE COCOA-FIBRE, and even where used

are plentiful and very cheap I prefer, as a precautionary measure, to place a handful of fibre over each pot before putting on the ashes, which may contain an amount of sulphur sufficient to mark the tips of the leaves, and thus render them unsightly. Once plunged they will be safe enough for the present, while the average rainfall at this season of the year will keep them sufficiently moist for all purposes. Where very early flowers are required, say for the middle of October or thereabouts, a small batch may be introduced into warmth in a month or so from potting-time, and placed on a gentle bottom-heat of 75 degs. to 85 degs., being covered for the time being with fresh Cocoa-fibre. It should be stated, however, for the benefit of those less experienced in these matters that these very early batches can rarely, if ever, be persuaded to produce their average length of stem. It is so with other things besides these that are what may be called overforced, but where left a fortnight or so longer produce results far more satisfactory. In those instances where early October flowers are an absolute necessity, this can only be done by sowing the bulbs at the earliest possible moment and setting them going without a day's delay. A very large number, I have no doubt, will be satisfied with getting flowers any time during November and onwards. When first placed on the bottom-heat and before being covered up the whole should receive a thorough watering, allowing them to remain uncovered during the night, placing the fibre on early next day. From this time a moist warm temperature must be maintained, and with the bottom-heat above-mentioned growth will quickly ensue. When the growths have attained a height of about 6 inches the bulbs may be taken from the fibre and stood in the same house in a darkened spot for a few days, giving a thorough watering. By degrees the foliage will assume its proper hue, and the plants may receive more light. When the flowers begin to expand, a lower temperature may be given.

CLEMATIS INDIVISA.

THIS is a strong-growing, very handsome evergreen greenhouse climber, bearing white flowers in great profusion during the spring



Clematis indivisa on a greenhouse wall.

months. It is from New Zealand, and is a very suitable plant for a large house or greenhouse wall, where a considerable space has to be covered, and where it has room to develop itself sufficiently to exhibit its natural character. It is a free-rooting subject, and requires to be planted out, as no ordinary sized pot could contain enough soil to support the growth which it makes; but in commencing with young plants it is better to grow them on for a time in pots, so as to get them well furnished with roots before turning out into a prepared border. This Clematis is very appropriate for planting at one end

of a house, and training under the ridge. When allowed to hang thinly in festoons it has a good effect, and is more fitting for being so grown than things which are not naturally calculated for extending far. As the soil in which the roots are placed gets exhausted, recourse must be had to stimulants in the shape of copious waterings during the growing season with liquid manure, and renewal of the surface-soil in the spring by removing an inch or two from the top of the border the roots occupy, and replacing it with new. When the space is filled which the plants are intended to occupy, each year, after flowering, the knife should be freely used so as to reduce the shoots within proper limits, and to allow room for the season's growth. Red-spider will, during hot weather, sometimes attack this Clematis, and should be guarded against by a free use of the syringe. Brown scale can be removed by sponging in the usual way. If white scale gets upon this, or any plant growing overhead on the roof, there is no chance for its extirpation except cutting the head close in during the winter when at rest, and dipping or washing the affected stem and remaining shoots with a strong solution of insecticide. B.

4829.—Tortoise in a garden. — A tortoise requires no food during the winter. It may be placed under cover in a box filled with hay, or in a warm, light coil in the garden, where it will be quite comfortable. I kept a tortoise for years, but it does not like covered cold. It is in a state of torpor during the winter, but regains vitality with the quickening warmth of spring. During the summer months, fresh Lettuce leaves, sops, and similar food is most available. It relishes fresh vegetable leaves.—C. T.

A tortoise does not eat anything in winter, for it takes a decided season of rest, hibernating in a snug corner, which it will select for itself. They bury themselves from 6 inches to 9 inches underground. There was an old stager in a garden where I was employed in Scotland which did not get down lower than the epaede went in digging; and had several dents in his armour made by the epaede. They wake up again to active life in the spring, and feed upon Lettuce and other green food; but they prefer Lettuce to anything else.—J. D. E.

Some years since we had a tortoise in the garden. As cold weather approached it pushed into the box-edging and hibernated. When asleep it was taken indoors, placed in a basket in a kitchen cupboard and there remained without food until spring, when his movements in the basket warned us he was ready to be put out again.—F. P.

4832.—Lemon Verbena (Aloysia citrodora).—This plant will live against a warm wall if sheltered in winter; but it is by no means a hardy plant for general planting. Even against a wall it is frequently killed to the ground in winter. In Sussex it lives out against a wall without protection, and probably it would do so in Dorsetshire. But to give a plant a fair chance it should not be planted out till the spring. Plants can be purchased at any good nursery.—E. H.

This is a fine old plant, but is not very hardy. I should advise you not to plant out until spring, as if planted out now you would have all the trouble of keeping it alive during the winter. In a southern exposure in a Dorsetshire garden it should be quite happy. Plant it against a sunny wall, and in a light, well-drained border, but cover over with a mat during very cold weather, otherwise it will most assuredly suffer; or heap coal-ashes over the roots. It is a charming old plant, its leaves as fragrant as a Lemon when bruised, and their delicate green colour is a fit accompaniment to flowers. I saw a good plant near London that had been out for two or three winters; but the plant was in a very warm, sheltered, sunny spot, and nestling almost underneath a croeper. You could purchase a plant at any good nursery.—C. T.

Phyllocauli blooming twice in one year.—I have two large plants now in bloom, bearing seven and eight large flowers respectively. They blossomed before in May this year. I know this is very unusual. I attribute it to using liquid-manure too freely. The plants are strong and healthy, and flowers fine and well developed.—W. N. G. L.

4815.—Hot-water pipes.—The pressure on your hot-water pipe is probably caused by air. Obtain a slight rise from the top pipe on your boiler to the point where it needs to return. Fix here an air-trap or pipe. Get a fall from here right back into the boiler. Make the leaky joints good and you will have no further trouble.—J. B. R. D.

ROSES.

SEASONABLE NOTES.

As many of my readers may like to raise their own Roses, or at any rate increase their stock of some favorite variety, they will do well to procure a few Rose-stocks as seen as possible. Menetti, seedling or cutting Briers, De la Grifforaise, and other stocks may be purchased by the dozen or hundred from almost all nurserymen. Some little while back it was not usual for many trade growers to part with their stocks to the amateurs; but I am happy to say that almost all of them now recognize that the greater interest an amateur takes in his garden, whether it be by propagating his own plants or not, the hotter customer he eventually becomes to the professional grower.

DWARF STOCKS should be carefully looked over, and all dormant eyes cut out from the base. If not done closely now, there will be great risk of suckers forming during the next two seasons; but if this little precaution be taken, and the Rose-huds are inserted sufficiently low down when the time for that operation arrives, the risk of suckers is reduced almost to nothing. Hodge Briers should also be collected and planted at once. Country readers can procure their own if they choose, but the task of removing Briers from a hedge is very far from an easy one, and requires tact, with a large stock of patience. They may be bought from five to eight shillings per hundred, the usual price being a penny each. It is a good plan to purchase mixed sizes at a cheaper rate, and then trim them to your own liking. No stock is more generally useful than the short hedge Brier, and it is much wiser to keep the plants as dwarf as your requirements will allow. Care should be taken to trim off the coarsest of the Brier roots before planting. I have known them to be planted in almost as rough a state as when collected; this is unwise for more than one reason. Firstly, the roots are apt to decay; secondly, an alarming amount of suckers are almost certain to be produced; and thirdly, the plants move very easily. My Briers are trimmed almost as close as if the main stem was only removed, with a slight heel of the older root attached; and I find they then produce better roots, while suckers are naturally reduced to a minimum. Plant the dwarfs about 2 inches above the collar of their roots. In dwarfs that are obtained from cuttings, I frequently find a considerable number of roots issuing from the sides of the stems. These should be trimmed off, it being only necessary to leave these at the bottom. The side roots are caused by the stock cutting having been planted so much deeper than is at all necessary or advisable for the stock previous to being budded upon. It may also be well to state that

SPENDING BRIERS need be no larger round than a knitting-needle, as they will swell quite large enough for budding by the time they are wanted. If larger than this, they often get too coarse for the smaller buds, and do not suit such Teas as Mme. de Watteville, Mme. de Cusin, Ma Capucine, and other slight-wooded varieties. The Briers obtained from hedges need planting 6 inches to 9 inches deep, and should be trodden up firmly. It is of the utmost importance that these be got in during the present month, any delay after November often meaning the difference of a bad instead of good take. Whatever state the Briers may be in, it will do no harm to immerse them in water for an hour or two previous to planting. Having spoken of rooted stocks, let us turn for a short time to the preparation of a few for another season. Both Brier, Menetti, and De la Grifforaise, also such strong growing Roses as Polyantha simplex, Dundee Rambler, and others, will all root freely if cuttings are made as follows: I may also note that the Polyantha stock and cutting Briers are decidedly the best for all-round purposes. Choose the growth of this summer and cut it into lengths of 9 inches. Make the lower cut just beneath an eye, and trim out all the eyes below the two or three near the top of your cutting. Now insert them quite three-parts of their length in sandy loam, and after making them firm, cover over with a little rough litter. This is also much better if not left later than the end of the present month. If you have no wood of the various stocks I have named, there is a method

why a few shoots from any extra strong-growing Rose should not be sacrificed to the same end, and the resulting plant will make excellent foster roots for any Rose you may choose to work upon it. P. U.

4831.—**Rosess pegged down.**—The wood of those which bloomed during the past summer should be cut away as far as possible without removing the long maiden growth of this season. My own plan is to do so early in the autumn, and then draw the remaining growth up to a stout stake, thus preventing any whipping and swaying by wind. Whether protection be needed or not will depend a great deal upon the position they occupy and the locality. If exceptionally cold or low I would protect with a few pieces of bracken tied around and among the branches upon the approach of severe weather. By pruning and tying up as I have described there is a good opportunity offered of applying manure and working the ground between the plants. Weeds can be cleared off, and the whole got ready for next year's pegging down.—P. U.

When Roses have been pegged down they form roots from the portions under ground, and require no tying up in the winter. It is a good plan to place a good mulching of manure over the roots and around the stems of the plants, especially if they are Tea Roses.—J. D. E.

4855.—**Rosa "Jean Ducher."**—The manner in which your plant behaves is characteristic of this variety. It is only now and again that we get a season when Jean Ducher is good out of doors, and although the warm, dry summer just passed might have been thought most suitable to so double a flower, it has not been so with me. If it refuses to open with you, dig it out and plant Françoise Krüger, a Rose of somewhat similar colour, and always opening well. Jean Ducher is grand under glass, but its petals are too thin in texture and far too numerous to open well during an ordinary summer.—P. U.

This is a magnificent Rose when it opens to perfection, but alas! in most seasons for one good bloom twenty buds fall to the ground or rot on the plant in a vain attempt to expand. I should not think of recommending this Rose to any amateur; but if "E. S." would like one that has a similar variety of lovely and indescribable tints in the flower, that grows with amazing vigour, flowers with equal profusion, and never fails to open every bud it produces, filling them with lavish fragrance, such a Rose exists in Dr. Grill. It is not an exhibitor's Rose, and will rarely be seen at the shows; but all who care for Roses and can grow the most refined and most beautiful of all the Teas should be sure of having Dr. Grill. Its flowers are like lovely sunset in the wealth, richness, and variety of tints.—A. H.

I have silently borne with the same behaviour in this Rose as you complain of, because I thought that in some way my treatment of it was not quite right—either the soil did not suit it or the position was too cold; but seeing that the plant grew freely and showed plenty of flowers which never opened I thought it might improve. But now "E. S." in the adjoining county of Devon finds it behaving the same, even when given a wall, I fear it must be classed as one of those Roses that cannot always be depended upon to open its flowers properly. This is the more provoking, because in some cases it is quite satisfactory. The only consolation I can get out of its behaviour is that there are others like it. I can never get in my own garden a good flower of Gobault or Camoens. Amongst the H. P.'s, La Francoise, Violetto Bouyer, Queen of Quoons, and Heinrich Schultzeis behave pretty much in the same way. The best advice I can give to "E. S." with regard to Jean Ducher is that to discard it and plant Catherine Mermet in its place.—J. C. C.

4841.—**Standard Rosess.**—As the situation is bleak and cold, and the soil stiff on a clay bottom, I would certainly not plant standards. Plant Hybrid Perpetuals worked on the seedling Brier. I consider the seedling Brier the best stock, not only for Hybrid Perpetuals, but also for the Tea-scented Rosess, which are more perpetual than the others. Of course, in such soils draining is indispensable, and I would advise raising the ground where the Roses are to be planted 6 inches or even a foot above the surrounding level of the garden. I practice

this very successfully, not only with Teas but also Hybrid Perpetuals.—J. D. E.

The Brier stock is certainly the best for your soil, but tall standards are not adapted for a bleak situation. You had better get dwarf plants on the cutting Brier stock, and choose such varieties of Hybrid Perpetuals as Magna Chartre, Earl Dufferin, Merveille de Lyon, Charles Lefebvre, Mrs. Jowitt, Paul Neron, Marquis de Castellaine, Mlle. Eugénie Verdier, Captain Christy, Mme. Charles Wood, John Hopper, Gustave Pigancan, Etienne Levet, Dupuy Jamain, Alfred Colomb, and Antoinette Ducher.—J. G. C.

You ask for the names of standard and bush Roses suitable for a very bleak place. I may say at once that standards are almost hopeless in such a position. If you must have them in this form, choose from the following: Baronne Prevost, Gloire de Dijon, Françoise Krüger, Jules Margottin, Henry Bennett, Captain Christy, Homère, and La Reine. As for dwarf or bush Roses, there are so many good varieties that I could not possibly name them. In addition to those advised for standards, the following will make a fair collection of various colours: General Jacqueminot, Baroness Rothschild, Ulrich Brunner, William Griffiths, Madame de Tartas, Mrs. John Laing, Dupuy Jamain, Marie van Houtto, and Bonlie de Neige.—P. U.

I should certainly not advise you to grow standard Roses in a bleak, cold spot. They are never good in such positions, and high winds play considerable havoc with them. It would be far better to confine the kinds to bush plants, which are not so influenced by weather. I have noted the following kinds as good in such places, and they would form a very interesting selection. Of Hybrid Perpetuals Duke of Connaught (deep crimson, a very good flower), Dupuy Jamain (crimson-cherry colour), John Hopper (of a lilac tone), Mme. Clemence Joigneaux (rose shade), Mme. Gabrielle Luizet (rose also, touched with a silvery tone), and Merveille de Lyon (white); whilst of Teas, very good are Françoise Krüger (a charming flower, with its copper colour, flushed yellow and salmon), Jean Ducher (one of the finest of the Tea section, and exceptionally beautiful this year), the Bourbon Mme. Isaac Perière (carmine-rose), Mme. Lamhard (peppery-rose, but very variable in colour), and the well-known variety Homère. Such favourite sorts as Aimée Vibert I have seen do well in cold localities, and it makes a beautiful standard, and, of course, the old Gloire de Dijon may be mentioned as one of the hardest of climbers. You must plant at once. November is the best month of the whole year for Rose-planting.—C. T.

4831.—**Climbing Rosess in a bleak place.**—If you have a south aspect to your house, such Rosess as Reine Marie Henriette, Climbing Victor Verdier, and Cheshunt Hybrid will do doubt be sufficiently hardy, and they are of different shades of red. Lemarque (white) will do on the same aspect. For the worst side you may select Gloire de Dijon (fawn), and Sir Joseph Paxton (rose). None but very hardy Rosess are likely to do well on the east side. These may be Félicité Perpétuelle, Dundee Rambler, and Williams' Evergreen.—J. G. C.

Here again, similarly to your query 4841, you are wishing to grow Roses in a spot altogether unsuitable for them. "A very bleak place; nothing to shelter whatever" does not sound very promising for Rosess. A house wall so exposed as yours cannot possibly do climbing Roses well, and I would strongly advise you to try something else—say Virginia Creeper, Ivies in variety, or something else equally hardy. I willingly name a dozen of the hardiest climbing Rosess I know: Gloire de Dijon, L'Idéal, Aimée Vibert, Gloire de Bordeaux, Charles Lawson, Sir Joseph Paxton, Emilie Dupuy, Madame Burard, Kaiserin Frederich, Reine Marie Henriette (rod), and Dundee Rambler (white).—P. U.

The Ayrshire Rosess (white and bush or pink) and the Bourbon varieties (crimson and rose) will be found better adapted to such a position than any others, and are tolerably sure to do well.—B. C. H.

4861.—**Rose Souvenir de la Malmaison.**—You need not hesitate to plant this Rose on the Brier stock, as I have known it to live for many years as a standard, although hard pruned every year; but the more freedom you give the growth, whether on its own roots or the Brier,

the longer it will live, and the more flowers it will produce. A friend of mine who grows Roses for the Bristol market cuts hundreds of this Rose every autumn from dwarf plants that get no other pruning but the removal of the growth with the flowers, and he has a line of plants many yards long.—J. C. O.

— This will do very well on the Brier-stock. I saw several splendid bushes in Essex this year all on this stock, and also on own roots. It is a very fine old Rose.—C. T.

— You may take it that this grand old Bourbon Rose will do well upon the Brier-stock. Although it does well on its own roots, it is by no means so essential as Doan Hlo states. I have some old plants on own roots, Manetti, and Brier, and I will defy anyone to choose between them. If planted at a proper depth—viz., a couple of inches below the collar of the plant, they can go off upon their own roots if so inclined, and will thus obtain additional support.—P. U.

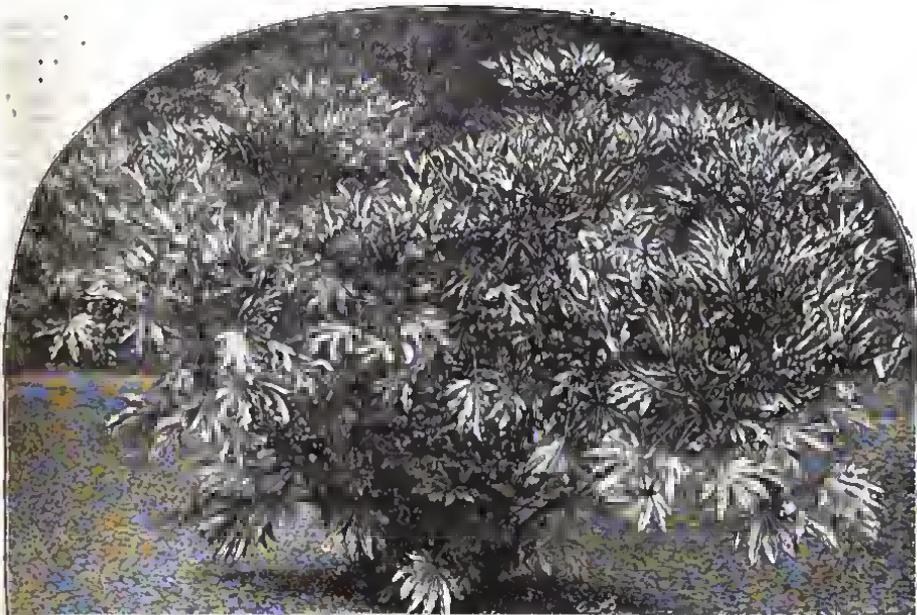
4810.—Treatment of Roses.—Your Roses have behaved similarly to many more during the remarkable season we have just passed through. As they are growing so strongly, I conclude they are varieties suitable for pegging down in the spring, and I would advise your retaining the long growths you speak

shoots one-third, and then peg the whole of the growth down to the soil, allowing a space of 9 inches between each shoot as they rest on the ground. I expect this is the first year after planting. If so, it is not unusual for the plants to make vigorous growth if they are well attended to, and it is not likely that they will grow quite so strong another year. If you cannot see your way to peg down the long growths you had better shorten them back one-half now, and in the spring leave the straggles 15 inches to 18 inches long, and the weak ones half that length.—J. C. O.

FATSIA (ARALIA) SIEBOLDI.

It is surprising how much effect and how much pleasure may be obtained from very slender materials, if only they escape being commonplace, and it is some compensation for many fruitless struggles to win success when one realises that a garden with a marked characteristic may be more satisfactory than mere variety. In many parts of the kingdom there is such an abundance of material that the very fact of their being so great a mixture somewhat confuses the effect, and so we lose the thing we sought for. Some years ago, when riding by the sea in

only satisfactory alternative to the too ubiquitous Aucuba, also a native of that quarter of the globe. It is much to be regretted that, owing to this Fatsia soon suffering both from sun and frost, it has not been considered sufficiently hardy for general seaside planting, and no one who gives it a trial will repent his experiment. Iris foetidissima, a native evergreen Iris that grows abundantly on the south coast, and is well known there for its handsome capsules full of bright-orange berries that glow in the winter sunshine, thrives and fruits just as freely under cultivation on the north-east coast, and makes a very pretty edging to a bed or plot of Arelia. Used as a hedge to keep off salt wind from low-growing plants, it is especially welcome as being ornamental as well as useful. There is a variety with clear silver variegation running all down the leaves, which is very pretty, particularly in the shade, and as it never berries like the wild form, one loses nothing by planting it in such situations. This variety is useful also for winter bedding, and looks extremely well with some dark shrub behind it and Lilac Primroses in front. There is also a very handsomely variegated form of the Fatsia, with creamy-white blotches and irregular edgings, which is larger and more massive in foliage than the type, and stands better in the open than that does; but it is not so healthy in deep shade, so that there is a place for both. Combinations of these materials with shrubby Veronicea and yellow winter-flowering Jasmine are exceedingly bright and pretty in mild seasons, and give a winter effect as pleasing in character as more extended plantations. E.



OUR READERS' ILLUSTRATIONS: Aralia Sieboldi. Engraved for GARDENING ILLUSTRATED from a photograph sent by Mr. O. Major, Holmwood, Paignton, Devon.

4812.—A garden at Leyton.—Unless the question is answered by someone who has practical experience of Leyton, I fear you will get little good from any notes you may receive. It is quite impossible to advise you with any degree of accuracy; but your best plan is to get friendly with someone who is enthusiastic in gardening, and lives in the neighbourhood, or watch what is grown in other gardens. If the soil is poor, Roses will not grow, but if prepared properly they should prove a success at Leyton, as it is a good way from the City. Such things as Achilles, Anemone japonica alba and the rose-coloured species, Aquilegia, Michaelmas Daisies, Campanulas, Coreopsis, Delphinium, Erigeron speciosum, Funkia, Galega officinalis alba (White Goat's Rue), Perennial Sunflowers, Day Lilies, German Irises, Perennial Lupines, particularly the white one, Evening Primroses, Rudbeckia speciosa, Sedum spectabile, Pansies, and hardy

of, and treating them in this manner. The method of pegging down has been described in GARDENING so often that there should be no need of further instructions. However, as several will doubtless be asking questions relating to this system of cultivation, I will give a short note upon it in season; probably early in the spring. At present I would recommend you to secure the long shoots from awaying and injuring one another during the coming season.—P. U.

— As the Roses have made such very strong growths, this would show that they have really good soil underneath them; however, it is usual for Roses to make strong shoots in the autumn, and to make them flower well the following season I would advise that these strong growths be not cut down too closely. It will be a good plan to give the surface of the ground a dressing with some manure. Old hot-bed-manure does well; this protects the Roses from the effects of frost, which often kills Tea Roses down to the manure, and if intense will injure the Hybrid Perpetuals.—J. D. E.

— If the plants are dwarf ones, you have an excellent opportunity to test the merits of the pegging-down system of Rose growing, and I advise you to adopt it. Some time in the months of December or January shorten back the long

Japan, not far from Yokohama, I noticed how well this Aralia, or, as is perhaps more correct, Fatsia Sieboldi, grew under the shade of trees when so exposed to the sea winds that they themselves were much out by storms. As a window-plant that will endure much hardship, we all appreciate its value in England, but as an outdoor plant it has not as yet its proper value, for it is generally planted in some sunny and sheltered situation where it will not thrive. On returning to England I took the first opportunity of planting any old stumps that had been exhausted by ill-nage indoors under the shade of trees, and, spite of some of the intensely severe winters, I was pleased to see that they pushed out healthy new leaves that withstood both winter storms and the nipping frosts that they had to endure. In a garden where Hollies not unfrequently drop most of their leaves after severe gales, and refuse to live under trees where fully exposed to the east blast, where no Conifer, Laurel, or Yew will even exist through two winters, is just the place where this leathery-leaved shrub should be planted. It enjoys a strong and moist soil, and dislikes the full exposure to sun and frost as much as the most delicate lady could do; but planted in shade more or less deep, the vigorous, its handsome, Fig-like leaves is quite striking, and it is most welcome, as being the

bulbs of various kinds, as Daffodils, should thrive if the soil is something better than builder's refuse.—C. T.

Two good garden flowers.—Two of the best hardy plants for the garden are Rudbeckia speciosa and Erigeron speciosum. I have had the former in bloom from the summer until now, and the plant is very compact in its growth, the flowers produced on sturdy stems, and deep yellow, with an almost black disc. It is very hardy, free-growing, and makes a dense mass of bloom of this very effective association of colour. The Erigeron is just as free, the flowers of a light purple colour, borne in clusters, and charming to cut for the house. It keeps up a succession over a long season. For gardens near large towns both these are suitable, and are useful for amateurs. Good colonies of them in large gardens give beauty to bed or border during late summer and autumn.—V. C.

A good variegated plant.—One of the best variegated hardy plants for town or country gardens is the variegated Dactylis (D. glomerata variegata), which grows very fast, and makes a dense tuft of leafage. The leaves are narrow, quite Grass-like, and almost white, but striped with green. A few bits I put in last spring grew into quite large plants before the end of summer, so that it can be broken up again readily for increase of stock.—T. C.

FRUIT.

LATE PLUMS.

LATE Plums do not receive nearly sufficient attention from growers of all classes. I think the best late autumn Plum in cultivation is Coe's Golden Drop, which will keep good for weeks if gathered before it is overripe. I have had good fruit of it for dessert in December by keeping it in a



Fig. 1.—Italian Prune (Quetsche d'Italie).

dry room. It grows and fruits freely on both east and north walls. I have had no experience of it as a standard, but the tree has a good constitution, and would, no doubt, do well in that form. The Italian Prune or Quetsche d'Italie (Fig 1) is also another very excellent late dessert Plum, having somewhat the same characteristics as the preceding, with the exception of colour, which is a deep purple. The flesh is yellow and very rich, rendering it a most desirable variety to cultivate. The Blue Imperatrice is a Plum but seldom seen, but it bears freely generally, and if allowed to hang until the fruit shrivels, it is delicious. Coe's Late Red is another late Plum worthy of every consideration. The value of the Yellow and Black Bullaces (see Fig. 2 on this page) is often overlooked by those who have space for standard trees in garden or orchard. These Bullaces hang a long time, are amazingly prolific, and make most excellent tarts, &c. B.

4837.—**Hardy fruits.**—Get the holes prepared at once, and if any builder's rubbish or other rough stuff could be easily obtained dig the holes out at least 4 feet in diameter and 2 feet deep; place 9 inches of rough stuff in the bottom, ram it down, and raise a little mound where each tree is planted. In cold, heavy, clay land the thing to guard against is deep planting. In such land if there is a depth of 15 inches to 18 inches below the surface for the roots to work in a further 6 inches or 8 inches can be obtained by forming a mound above the surface, and the trees under such conditions will do better than if thrust deep down in the land, where the temperature will be lower, in consequence of being beyond the influence of solar heat. As regards varieties, the following generally succeed under unfavourable conditions. If possible, I should plant the Apples on the broad leaved Paradise, and have some, at least, of the Pears on the Quince. Apples (kitchen): Keswick Codlin, Stirling Castle, Rohioville Seedling, Warner's King, Red Hawthornden (or Yorkshira Beauty), Stone's Apple, Bramley's Seedling, Lane's Prince Albert, Batty Geeson, Tower of Glamis, and Northern Greening. Apples (dessert): Beauty of Bath, Irish Peach, Yellow Ingestrie, Cox's Orange Pippin, King of the Pippins, Braddick's Nonpareil, Mannington's Pearmaio, and Allen's Everlasting. Pears: Beurré Superfin, Bon Chrétien (Williams'), Doyenné du Comice, Louise Bonne of Jersey, Marie Louise, Pitmaston Duchess, Fertility, Souvenir du Congrès, Beurré d'Amalois, Beurré Diel. Plums (kitchen): Cox's Emperor, Diamond, Ashbourne's, Pood's Seedling, Orleans, Prince Egglebert, Victoria, and Cluster Damsons. Dessert Plums: The Czar, Monarch, Transparent Gage, Belgian Purple, and Old Gage.—E. H.

4788.—**Pears on a clay soil.**—Pears, as a rule, do well on clay soils if they are worked upon the Pear-stock; but good cultivation is necessary, and the land must be drained. A novice in the culture of fruit-trees may ask what is understood by good cultivation? Draining, if it has not been done, and also providing an outlet for the water. Next loosening up the soil to a depth of 18 inches; but keeping the

subsoil in its place, merely forking it up, and keeping the 9-inch subsoil in its place, and the top soil stirred up with a digging fork. If the soil is in good condition no manure would be required to be worked into it; but after the trees have been planted a dressing of manure should be placed around the roots. This keeps the moisture about them, and in various ways promotes their growth during the winter. When the subsoil is poor, and the surface soil light, the Quince-stock is best, as it is surface rooting, and the trees can be fed by surface dressings of manure. I had charge of a garden for many years where the subsoil was nothing but gravel and the top soil very light; but by putting some clayey loam around the roots to give the trees a good start I obtained exceedingly good fruit from all the varieties which thrive on the Quince-stock. A few were double grafted.—J. D. E.

4848.—**Peaches and Tomatoes under glass.**—If the Tomatoes are thinly trained. Peaches would on the back wall. Success would in a great measure depend upon the management. The dangers to be guarded against would be red spider on the Peaches and mildew on the Tomatoes. These evils may be avoided by careful watering and judicious ventilation.—E. H.

— It may be just possible to obtain a fair crop of Peaches on the back wall of a lean-to Tomato-house, but I have never seen them do much good in such a position. Of course having the full light (or nearly so) until the end of July makes a great deal of difference, and on the whole it may be worth a trial. Procure an early variety, such as Alexander or Hele's Early (the last is far superior in point of flavour), so as to get the fruit ripened before the trees become shaded.—B. C. R.

4860.—**Plum-tree not bearing.**—It appears somewhat strange that such a healthy tree should not bear something, especially as it blooms so well. All I can suggest is to root-prune it, cutting any strong, deep-lying roots right through. This should be done at once. If this fails you might try cutting it back hard, and grafting or budding some of the shoots with a reliable variety (the present tree may be of an inferior kind, or possibly a worthless seedling), but the worst of Plums is that if pruned hard they generally bleed or gum badly, disease sets in, and you lose your tree.—B. C. R.

4849.—**Large Apple-trees.**—If the middle of the trees was sufficiently fruited with bearing wood after you had taken away the centre branch, it is very clear that they would soon get too much crowded again if you left any of the young shoots you allude to. You had better cut away at once the whole of the young growth on the out-back branches. Lord Suffield is an Apple that is very liable to get crowded with growth, especially if the soil is not very good, and then the fruit is small, and very often badly deformed.—J. C. C.

4844.—**Canker in Apple and Pear-trees.**—This usually appears upon trees that are planted in unsuitable soil. If the roots run into a wet cold subsoil canker is almost sure to follow. To prevent it the roots should be encouraged to grow near the surface, and if the soil needs draining see that it is done, and as soon as canker shows upon the young trees lift the roots up nearer to the surface, and put some good garden soil amongst them. If the growths and branches have become badly cankered, the diseased portions must be cut out, and in most cases they will come right again.—J. D. E.

— Some varieties are more subject to canker than others, but as there are plenty of free-bearing kinds not subject to canker if fairly treated, the sorts predisposed to canker should be got rid of. Canker is mostly found where the soil is wet and, consequently, cold, and where the roots are too deeply buried; deep planting generally leads to canker, and it has been found that by lifting a cankered tree and laying its roots near the surface the disease has been stopped, and the tree has afterwards made healthy growth.—E. H.

— Surely "Beta" must be wrong in attributing the unsatisfactory condition of the Apple and Pear-trees to canker. In the first place Pear-trees are not nearly so much subject to canker as Apples. Then "Beta" speaks of the lumpy excrescences as the result of

canker. If that is so, it is a form of canker that I am not acquainted with, although canker, as I know it, is painfully evident on a Ribston Pippin Apple-tree I have. If I am not very much mistaken, it is the "American blight" that has attacked "Beta's" trees, and it is these insects which cause the lumps on the hrenoeae. There are some hopes of getting rid of "American blight," hot cooker, never. Touch each of the affected parts with paraffin-oil, applied with a small brush. This may be done at once, but as the insects are not so much in evidence at this time of the year as in the months of July and August, the trees must be carefully gone over at that time next year and the same remedy applied. Anything like painting the branches must, however, be avoided, or it will certainly kill them. A light touch with a brush that has been dipped in paraffin will kill every insect it touches. If the insects are numerous, the trees will want going over three or four times from June to September. A safer remedy in inexperienced hands is a solution of 6 oz. of Gishurst Compound to 1 gallon of water, if applied in the same way as I have advised for paraffin.—J. C. C.

4833.—**Paint for fruit-trees.**—There is a good deal of misconception about painting the stems of fruit-trees; evidently many persons do it without knowing the reason why. To paint the stem of a tree that is free from insects and lichen, as many do, is doing more harm than good, because the material used has a tendency to stop up the pores in the bark and so check growth. Here, however, is a description of the ingredients used by many fruit-growers in Somersetshire and Devonshire. It is used for the purpose of destroying Moss on the stems. Three parts fresh slaked lime and one part fresh collected cow-manure, which is mixed together to the consistency of thick paint, and applied with a fairly soft birch or Heath broom. The materials are mixed in a wheelbarrow and applied to the trees at once. This has the effect of keeping the stems of the tree quite clean, but, strange to say, the large branches are left uncoated for, although frequently covered with a mossy growth.—J. C. C.

ANNUAL FLOWERS DURING THE PAST SUMMER.

AMATEURS who have been so disappointed with the annual flowers this year must not think them valueless on that account. This has been a sorry year for them simply through the exces-

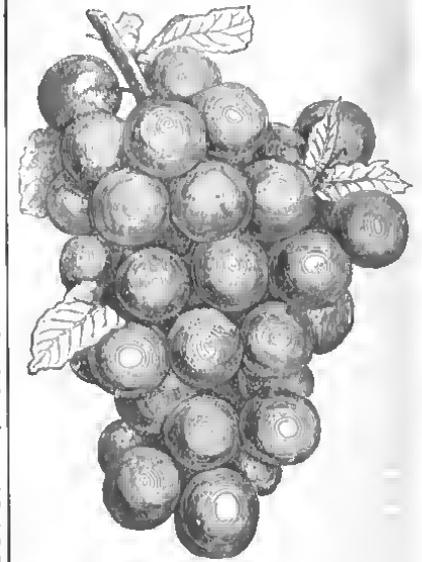


Fig. 2.—Black Bullace.

sive drought, which played havoc with other things than annuals. Such plants as Zinnias have done remarkably well, but the majority of annuals, especially Sweet Peas, have distinctly failed. There is no doubt that bad management is responsible for much of the mischief, and the summer is blamed when really the fault is with the sower. On badly prepared ground

it is hopeless to get a sturdy growth, and by sowing three times as much seed as necessary the young seedlings are crowded up, and become leggy and weakly. Much good seed is lost through sowing too deeply, especially fine seed which needs only a light covering of soil. Very pleasing this year has been the well known Canary Creeper, which is delightful to train over a trellis or to hide unsightly spots.

AUTUMN-SOWN SEEDS of the hardier annuals give excellent results, but, of course, the plants make good growth when the seeds are sown in the spring, if the sowing is not delayed beyond the proper time. Let each plant grow to fullest perfection, and after the seedlings appear above the growth thin vigorously to enable each plant to develop to its utmost capacity, which it will do, and surprise those who sowed thickly with a dense profusion of flowers and sturdy spreading growth. A great point in hardy annuals is to select varieties which bear flowers of distinct colour, and this is more necessary now, as some of the newer additions are of magenta shades, which are abominable, producing a dead, unpleasant effect. There are many decidedly coloured annuals, the flowers white, crimson, and rose, or shades of the same, as a rule, and a bed of the White Godetia, for instance, is of great beauty. Those who are sowing now should think of this. This leads me to say that in distinct blocks the several varieties are best seen, applying the idea of massing to annuals as to hardy perennials to get rich and beautiful effects, or the seed may be sown as a groundwork to other plants. Roses and Mignonette go happily together, and amongst tender annuals a bed of Crimson Celosia is richly attractive. One of the prettiest effects I saw this year with annuals was a mass of Malope grandiflora and its white variety growing amongst some Apple-trees.

ANNUAL AND BIENNIAL PLANTS grown well are capable of giving much pleasure at comparatively little cost, if the proper varieties are selected. The Sweet Pea, for example, has undergone within the past ten years much improvement, both in size of flower and so in variety of colouring, without sacrificing its bloom or sweet fragrance. A few of the finest I made note of in the collection in the Chiswick garden this year were Captain of the Blues (very rich blue), Mrs. Sankey (white), Mrs. Gladstone (a lovely pink, delightful for cutting), and, of course, the rich self forms, as scarlet, white, and pink, which are effective in masses. In the case of very new varieties, of which there is possibly very little seed, the wiser plan is to sow in pots, planting out into well-prepared ground at the end of March, taking care that before they are put out the growth is thoroughly well hardened. This treatment helps the plants, and they give a finer return in flowers. What I have already said about thick sowing applies strongly to the Sweet Peas, which are invariably sown too thickly, the result being that the haulm becomes crowded, weakly, and the display of flowers poor. The once common style of sowing annuals in clumps in the borders or in long lines is not the best to show off the individual beauty of the respective varieties. Annuals are often fleeting, looking shabby when thus treated after a comparatively short time, but when used amongst Roses the effect is delightful. White Asters, for example, planted amongst such dwarf Roses as the China Cramoisie-Supérieure being decidedly pleasing, or the colouring may be reversed, white-flowered Roses with Crimson Asters. The great thing is to get away from set rules, which were the chief feature in carpet-bedding, and annuals are a happy style of plant to use. I saw once a large bed of Standard Roses made in a sense pleasing by smothering the surface soil with Poppies, quite an easy thing to do and costing little. At the foot of Standard Roses, which are seen in many gardens, sow Mignonette, or some other annual, and extend the plan in every possible way. I alluded to Roses, but it is not, of course, necessary to restrict the association of annuals to these. In a Surrey garden a large Araucaria imbricata occupied a rather conspicuous position, and sentiment only prevented its destruction, but the bad effect of the unhealthy lower branches was in part obviated by sowing French Poppies, which gave a wonderful variety of colour. Phlox Drummondii is a delightful flower for sowing with Roses

or herbaceous plants, and with a little foresight there need be no dulness in the garden or unsightly corners. I saw this year a dry, sunny bank smothered with Nasturtium in such varieties as Empress of India, these throwing up their flowers well above the profusion of leafage.

In thus associating Roses and other hardy plants with annuals, it is necessary to take care that the annuals are not overdone to the injury of the plants by being permitted to crowd amongst them, whilst there is no need to prepare the soil especially. Mixtures, as a rule, are not good unless managed with extreme taste, and, therefore, it is always better to keep the various kinds quite apart—a row of White Sweet Peas, for example, having a much prettier effect than several sorts mixed up together. Another point is not to try things because they are rarely seen: It would be, of course, folly to plant a garden with annuals only; but I once saw a public place in which they were used to the exclusion of practically all other things. This was at Scarborough, where, on the western cliffs, was a garden of annuals sloping down to the sea, the walks winding in and out, and the whole sheltered from the full blast of the ocean. The months in which this garden was required in full beauty were August and September, and at that period



Waterer's Double-flowered Cherry (*Cerasus Watereri*).

It was a blaze of colour. A complete representative of annual flowers, which, when in beds of irregular shape, as in this case, are charmingly free and natural. V. C.

FERNS.

4854.—Maiden-hair Ferns.—Your query does not afford much information. It is possible you have kept the soil too wet, or they do not like the constant change of temperature. I could have advised better if I knew the names of the Ferns, as perhaps the sickly one is more delicate than the others. During the winter Ferns are not so fresh looking as in spring or summer, and require much less water, neither is shade necessary. The sickly aspect may be due to a want of sufficient nourishment in the soil through getting pot-bound. Keep this plant in the greenhouse, or send its name; one can advise better. There are many kinds of Maiden-hair Ferns, and some require much more heat than others, and are more delicate.—C. T.

—These are not good Ferns for room decoration; they feel the change from the moist warmth of a greenhouse to the dry stuffiness and half light of a room. You would do better to grow a few *Pteris tremula* or *Ribbon Fern* (*Pteris caudata*) for indoor decoration.—A. G.

TREES & SHRUBS

SHRUBS FOR FORCING.

A GREAT many shrubs forced into bloom are employed for greenhouse decoration during the spring months, and where they are required for this purpose and are not grown in pots, they should be lifted early in the autumn—just before the leaves fall. Treated thus, the plants get partially established before winter, whereas if potted late in the season they may flower just as well, but the blooms have not so much substance and do not last so long in beauty. In selecting plants for forcing, only those that are of good shape, with well-ripened shoots and plenty of flower-buds, should be chosen. Where a number of shrubs are forced every year it is a good plan to have a couple of sets, giving each set a season to recoup itself. Some people keep the shrubs for forcing in pots, others plant them out, this last method giving the least trouble. Many of the Ericas are suitable, as they possess the advantage of forming a dense mass of fibrous roots, and they can be lifted and potted at almost any season of the year without injury. Besides the endless forms of Rhododendrons and hardy Azaleas, there are two varieties of Andromeda—*floribunda* and *japonica*—that flower beautifully under glass, as also do the different *Kalmias* and the pretty little *Xenobia speciosa*, of which there is a variety (*puberulenta*) with bright silvery foliage, which under glass is remarkably striking. The little *Erica carnea* or herbacea, which in mild winters commences to bloom in the open ground soon after Christmas, is very bright and cheerful in the greenhouse for the first two months of the year. A great many rosaceous plants are also forced into bloom, but the majority of them will not bear so much shifting about as the Azaleas and things of that class, although they are extremely beautiful when in flower. Of these may be mentioned the Almonds, Peaches, *Charicia* (the one here figured, Waterer's Double-flowered, is very beautiful), and Thorns, especially the double-blossomed kinds, as they last longer in bloom than the single forms.

CYDONIA JAPONICA and its numerous varieties that flower so early are also available for the purpose, and so is *Pyrus Maulei*, whose peculiar orange-red blossoms supply a very distinct shade of colour. *Pyrus Malus floribunda*, too, I have also seen forced into bloom, and very pretty it is in the shape of little standards, with long, graceful shoots. *Spiraea Thunbergi* is very pretty, and can be forced into flower readily. It has little white Hawthorn-like blossoms, which are borne on slender, arching shoots. *Prunus triloba* and the double-flowered form of the dwarf, much-branched *Prunus sinensis* are both very easily forced, and remarkably showy when in bloom. *Deutzia gracilis* is one of the first plants to be obtained when shrubs are needed for forcing, as it readily lends itself to such treatment. Besides this, the double-flowered form of *Deutzia crenata* is very beautiful, but it cannot be had in flower so early as the single form. Lilacs are commonly forced, and give but little trouble provided suitable plants are obtained. For small bushes the Persian Lilac is the best, but both the double and single-flowered forms of the common kind may be forced just as readily. *Hydrangea paniculata grandiflora* is now largely grown in pots and brought into Covent-garden Market in considerable numbers during the season, but it does not naturally bloom till the end of the summer or in the autumn. *Berberis*, especially *viridissima*, may be grown into neat bushes, and they are valuable for flowering under glass, as blooming naturally early in the season, they will expand their blossoms in the temperature of a greenhouse. *Berberis stenophylla*, though rarely used for the purpose, will do well forced, as also will *Styrax japonica*, a neat growing shrub with slender branches, from the underside of which depend its pure-white, drooping, bell-shaped blossoms.

STAPHYLEA COLCHICA must be included in the list, but though very pretty, it is difficult to get good bushes of it. The Snowball tree (*Viburnum Opulus sterilis*) will flower well if not brought on in too high a temperature, and good sized plants should be chosen for the purpose. I have succeeded very well in forcing some of the hardy Magnolias—viz., the Yulan (*M. campanulata*), *M. Louisa*, and the pretty double-

flowered *M. stellata* and *Halleana*. As the Magnolias greatly dislike to be shifted, the plants are grown in pots and plunged outside during the summer, when they set their buds for the next year's display. *M. stellata* is especially valuable in this respect, as it retains its neat, compact habit for years and flowers freely every season. *Weigela rosea* and some kinds of *Ceanothus* will flower well under glass, though they are but seldom employed for the purpose. Another subject rarely seen is the *Laburnum*, whose drooping clusters of golden blossoms are



Fig. 1.—Broad-leaved Saxifrage.

very effective. One thing to be borne in mind in the case of forced plants of all kinds is that when the flowers are over they should not be turned out-of-doors at once, but should be gradually hardened off. In the case of *Azaleas* that are forced every year they go to rest earlier than those that are in the open ground, and consequently they may be had in flower earlier in the spring. H.

4846.—**Transplanting Laburnums.**—You could not have a better time than the present for transplanting these things. They ought not to require much pruning, but, if necessary, you can either trim now or in the spring. Any good garden soil will suit them. Put a little well-rotted manure in round the roots when you plant, and do not forget to heel them well in. More trees and shrubs are lost through neglect in this particular than from any other cause.—A. G. BUTLER.

—You can do the work now—this is, in fact, the best time—or from now until this spring. Do the transplanting carefully. It is not necessary to have any special soil, and do not go hacking the shoots about with a knife; let the trees develop their own characteristic beauty. A *Laburnum* is very beautiful, especially in spring, when its branches are laden with golden blossoms. In transplanting, take care to get a good ball of roots with the trees, and make a hole sufficiently large to receive them. Spread out the roots carefully, and work in a little of the finer parts of the soil amongst them. Tread firmly, and make the soil also firm as you proceed. If necessary put in a good stake, to prevent the trees rocking about in the wind.—G. T.

—Transplant now, and do what pruning is required in spring. Long straggling shoots may be shortened back now.—E. H.

4836.—**Planting Poplars.**—The Lombardy Poplar is the only variety of this tree that is at all suitable to make a hedge only 6 feet in height. It is better adapted for a height of 20 feet than 6 feet. If you decide on using it you had better get plants about 4 feet high, and cut off the tops of the leading shoots as soon as they reach the required height. You may plant at once, and if you want a hedge quickly you must not set out the plants more than 2 feet 6 inches apart. *Opulus Lawsoniana* would be very suitable for the height you want, and the plants would not cost but a few shillings more, and you would have an evergreen hedge in three or four years.—J. C. C.

—I suppose the Lombardy Poplar is meant, as this is the kind usually planted to form hedges. If plants which have been grown thinly, so as to feather down to the ground, are selected, and planted 4 feet apart, there will be a hedge of the required height at once, and all that is required is to tie and trim it into shape. Plant at once.—E. H.

The Siberian Crab.—This is very beautiful this year. It will grow well near large cities, and is suitable for small gardens, at least gardens where the larger growing tree are out of place. The tree is graceful in growth, leafy, pretty when in bloom, and very bright through

the winter, as it is laden with small, brightly-coloured fruits, which make good preserve. This year the Crabs are fruiting usually freely owing to the warm summer. Such kinds as *Fairy*, and others which are not always so free, are carrying good crops of the pretty fruit. The *Fairy Crab*, or *Apple* as it is sometimes and more aptly called, is a firm, crisp, juicy, and pleasant flavoured fruit, worth growing only on that account. The *Siberian Crab* is the best of the family for small gardens, and a tree on the outskirts of the lawn is pleasing to look at through the whole year.—E.

HOUSE & WINDOW GARDENING.

CHRISTMAS ROSE BUDS.

AMONG the many ornamental aspects of the early Hellebores, whether growing or out for indoor enjoyment, perhaps the beauty of the flowers in the bud stage is hardly enough noticed or appreciated. The flower is bold and beautiful in all states, but is singularly graceful when drooping in early bud and in its younger half-expanded bloom. This is most noticeable in the varieties that are pure-white outwardly, and whose buds are long and slender. Our engraving (Fig. 2, p. 567) draws attention to the grace of bud form of this noble winter plant, both as growing and as a little handful gathered for room decoration, grouped with a leaf or two of the Broad-leaved Saxifrage (see Fig. 1), whose warm winter tints set off the pure-white flowers charmingly. The leaves of the Christmas Rose are too precious to cut, and in many soils they are not in good order at blooming time. It is worth while to grow some plants of the common *Helleborus foetidus* (easily grown from seed and doing well in any out-of-the-way corner) for its fine supply of handsome leaves to accompany the Christmas Rose flowers.

A good room plant.—A plant one does not see very much in rooms is called *Ophiopogon Jabnan variegatum*. It is a very strong grower; the leaves creamy-white and green, the variegation not spotty, but boldly marked. Such plants are useful to mix with other things, green-leaved, and it stands the heat, varying temperature, and neglect that life in a room entails. Of course, there should be no neglect; but it is so, and that is the reason why there are so many complaints of window and room flowers failing. The *Ophiopogon* produces also very pleasing deep-hine flowers in spikes, which show well against the variegated foliage.—E.

4859.—**Out blooms for the house.**—I presume you mean hardy flowers. *Achillea* the *Pearl*, *A. mongolica*, or *A. ptarmica* fl. pl., are all useful for cutting, blooming in the summer. The first and last have pure-white double flowers, those of *A. mongolica* longer, but single. All are really first-class border kinds. *Anemone japonica alba* for late summer and autumn is indispensable. Then also amongst white flowers have the *White Snapdragon*, very charming in the summer, *White Canterbury Bells*, *Chrysanthemum Leucanthemum duplex*, *White Pinks* (June), *Funkia grandiflora* (September), in a warm, dry spot; *White Everlasting Pea*, *White Lily*, *Lupinus polyphyllus albus*, an easily-grown plant for the summer; *White Pheasant's-eye Narcissus* for the late spring; *White Pyrethrums*, but of various colours, the pink ones are very pleasing. Other plants of service to you are *Anemone coronaria*, *A. falcons*, *Michaelmas Daisy*, especially the more graceful varieties, such as the varieties of *Aster levis*; *Delphiniums*, *Paeonia*, *Pentstemon*, which bloom from summer through the autumn; *Primula japonica*, *Erigeron speciosum* (pale-purple), *Cornflowers*, *Centaurea coccinea* in variety; *Iris*, particularly the German kind; the *Blue Salvia patens*, *Wallflowers*, *Coreopsis lanceolata* (yellow), *Rudbeckia speciosa* (autumn), *Gaillardias*—plant in spring in light soil; *Perennial Sunflowers*, particularly such graceful kinds as *Helianthus argyleus*; *Iceland Poppies* (yellow and white), and various kinds of spring-flowering bulbs.—G. T.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruits and vegetables for drawing. The drawings so made will be engraved in the best manner and will appear in due course in *GARDENING ILLUSTRATED*.

ORCHIDS.

INDIAN CROCUSES (PLEIONES).

THESE appear to have been blooming very freely with "Mr. J. Woodhouse," for he says he has ten panfuls of them (in three different kinds) all in blossom. Now, "Mr. J. W." wants to know if he can grow any other kinds, and what he is to do with them after the blooming season is past? Well now, what I should like to impress upon him and my readers is that they should try to keep these Pleiones from blooming too soon, because this will defer the growing time, and it will also tend considerably to increase the strength of the bulbs, and thus will give finer blooms, and these in greater quantities. The plants flowering now should not be excited with too much heat, so as to induce the new shoots to push too forward; therefore, I like to give them a slightly cooler place immediately after blooming, and to keep them in this position some three weeks or a month before putting, but they must be carefully watched during this time to prevent any injury befalling them. If, however, the young growths seem inclined to come away they should at once be potted and be placed in more warmth. Now, these plants grow naturally under such conditions that we cannot think of imitating. However, they succeed well under cultivation. The pots or pans must be exceptionally well-drained, and the soil used for them should consist of good fibrous peat and *Sphagnum Moss*, mixing in a little dried cow-manure. This should be made sandy. This soil should not rise up quite to the rim of the pot, for if left below the pot's rim there is better chance of the bulbs getting a larger supply of water during the growing season. This water supply must be given moderately at the first potting, or the season's growth may be spoiled through the roots rotting, but as they continue to grow and to root more liquid may be given. When about half grown many people give them an occasional supply of liquid-manure, but I do not like the application of manure-water at all to any Orchids. When the bulbs have fully formed, less water must be given, and as the leaves begin to turn yellow and to fall off the supply must be gradually diminished until it nearly ceases, only just enough to keep them in a plump and sound condition is all that will be required until the flowers begin to show up, when a little extra moisture will be necessary. Some like to suspend them in hanging-pots or pans; but I like better to stand them upon a shelf in the Cattle-house, close to the glass, and to shade them from the hottest sunshines, because their leaves are thin, and they quickly lose their beautiful green colour if too fully exposed to the influence of that luminary, so the plants should have a thin shading upon them during the middle of the day. The following kinds may be grown by anyone having the accommodation of an ordinary stove-house; indeed, I have seen the species grown and flowered in a much finer manner in a mixed plant stove than I have ever seen them in an Orchid-house pure and simple, and I have frequently remarked that the Orchids when grown specially by themselves do not make such a good atmosphere in the house as do some plants of other tribes when mixed with them.

P. ARTHURIANA.—This plant was named by Reichenbach in honour of the late Mr. Arthur Veitch, and it comes from the mountains of Burmah, although by some it is considered to be a variety of *P. maculata* from the Khasia Hills, and in various other parts of Northern India. In general appearance it is somewhat smaller than *maculata*, and the flowers are also of a more diminutive size. The petals have a marginal band of lines of rosy-purple, and the front lobe of the lip is bordered with purple.

P. HOOKERIANA.—This, although introduced here, is the rarest of the species, and it occurs at a greater elevation than many of the kinds, and the leaves remain green until after the flowers have fallen. These are rosy-purple, with a much lighter lip, which bears sundry blotches of brownish-purple.

P. HUMILIS.—In this we have a very handsome kind, which also grows at considerable elevations. The colour is soft lilac, the lip being fringed with long hairs. It is white, spotted with purple.

P. HUMILIS TRICOLOR is a variety sent out, if I mistake not, by Mr. Wm. Bull some few years ago. It differs from the typical plant by having the lip more or less blotched with orange.

P. LAGENARIA.—This is one of the most beautiful flowers in the whole genus; the sepals and petals are rose coloured, more or less striped with deep-lilac or purple. The lip is beautifully frilled by numerous raised lamella, the colour being purple and white, streaked and blotched with red.

P. MACULATA.—Another beautiful kind, having white sepals and petals, the white lip being streaked and splashed with rich purple, and bearing several raised lines or fringes.

P. REICHENBACHIANA.—A larger and stouter growing plant, found growing at considerable elevations in Burmah; the flowers, too, are somewhat larger than many of the other kinds. These are rosy-lilac, with purple spots, and a few fringed plates on the lips.

P. WALLICHIANA.—This is a large flower, the sepals being much broader than the petals. These are a dark rosy-purple, the lip about the same colour, with a fringed edge. There are a few more kinds known, but the above are the chief species in cultivation, and all may be readily obtained, saving P. Hookeriana, which, I think, is still very rare in the collections of this country. **MATT. BRAMBLE.**

THE SMALLEST CATTLEYA (CATTLEYA LUTEOLA).

This is a very pretty Orchid, which I am asked to say a few words about by "J. Holmury," who brought some plants of it from Para; this locality is not its natural home, but it would appear to have become naturalised and acclimatised in the gardens of Para, for it is found growing in the trees in the open air, and it likes the situation amazingly. It is a continuous grower, and it is seldom without flowers during the whole year. This Cattleya appears to have been originally introduced in this country by the Messrs. Rollisons, of Tooting, who then had a famous nursery business at that place, and they had received the plants from the banks of the River Amazon, where it grows in great profusion upon the shady side of the trunks of trees that grow near, and from whence the plants which now are so prevalent in Para originally came. It appears to be the smallest species of the genus Cattleya known, and it produces pale yellow flowers which have the side lobes of the lip in some varieties lined with reddish-purple, and the front lobe of the lip is slightly crisp and toothed. It is not a showy plant, and it does not attract by its perfume, for it is quite destitute of scent. The slender peduncles bear several flowers which each measure some 2 inches across. These, being of a soft citron colour, render it very attractive, and moreover they last a long time in perfection if properly cared for and kept from the effects of the damp. It is a plant which has gone out of fashion considerably, for now that we have such plants as C. Warroqueana from M. Linden, and the true old C. labiata from Mr. Sander, and the superlatively beautiful C. Bowringiana, introduced into this country by the Messrs. Vetch, there are very few that would deign to look upon the modest little flower of C. luteola, but it is an exceedingly interesting plant, and worthy of note because it is the smallest flowered species known. It should be securely fastened upon a block of wood with a little peat fibre and Sphagnum Moss, and it should be well supplied with water through the growing season, and it is best not to dry it at any time of the year. But much less water will be necessary in the dull months after the flowers are past. The best method of watering this plant through the summer season is by taking it down every other day and dipping it, and it may be sprinkled over with the syringe when the other plants are done. It may be grown through the summer months in the cool-house, but in the winter-time it likes the extra warmth obtained in the Cattleya division. **MATT. BRAMBLE.**

OUTDOOR PLANTS.

TULIPS AND THEIR CULTURE.

It is now about the time to plant out the late Tulips, and those who intend growing these beautiful old-fashioned flowers should have previously prepared the ground for them. The old growers used to make up their beds with very great care, sparing no expense if they thought that the flowers could be improved in quality. Very seldom, indeed, was a Tulip-fancier satisfied with the natural soil of his garden by merely digging or trenching such garden soil as he had, and adding sand or manure as it might be required, he could have obtained a delightful bed of Tulips; but his fancy was to dig out this soil to the depth of 18 inches, and afterwards fill this space up with decayed fibrous loam, leaf-mould, manure, and sand, thus entailing an unjustifiable expense. This Tulip will grow in any good garden soil which has been well worked to the depth of at least 1 foot, and a good dressing of manure applied to the beds. This should be dug in to the depth of at least 6 inches. The right thing is to see that this soil is well exposed to the air by frequent turning over, and this ought to be done when the weather is dry. During wet weather it is much better to leave the ground alone; but after rain, and when the surface is dry, it ought to be stirred up with a digging fork lightly, or it may be run over with a Dutch hoe. This preparation of the ground is merely trenching it in the first place, and exposing it to the air up to the time of planting by hoeing it or forking it over. I had an idea that the Tulips did not do well after Carnations, and am rather confirmed in this belief by reading a paper on the Tulip in "Gossip for the Garden," published in 1857 by the late Mr. Richard Hoadly, of Stapleford, in which it is stated that a Tulip grower in Cambridge attributed the loss of his collection to planting them in the soil wherein his Carnations had been grown the previous season. For several seasons I planted the Tulips on ground which had grown Carnations during the summer, and I never was satisfied with them when thus planted. My idea was that the Carnations not being removed until October, there was not time enough to get the ground into good condition for planting by the first week in November, especially if the weather was stormy and the ground wet. If much snows in producing fine blooms is expected, the preparation of the ground should be seen to as early as possible in the autumn, so that it may be got into a nice friable condition. I have frequently experienced the disastrous effects of

BADLY PREPARED SOIL not only for Tulips but also for Gladioli, as these classes of bulbs are more sensitive to bad soil than any other bulbs known to me. When the soil is not in good condition some finely sifted loam from the potting-bench, which is found in most gardens, may be used to put around the bulbs; if the siftings are from heavy loam some coarse sand may be added to it. My plan is to draw a deep drill with a hoe, and fill it up with this dry, fine soil; and with a trowel plant the bulbs to the required depth, pressing the dry and fine soil under and over the bulbs. This system of planting should be adopted whenever the weather is wet at the time of planting, and in truth the soil is more often in a wet than in a dry state in dreary, dull November. It was a very absurd practice of the old growers to delay their planting until a certain date in the second week in November. This seems akin to the old superstition of sowing and planting when the moon was in a certain stage. About the end of October, if the Tulip bulbs are examined, it will be found that they are bulging out a little at the base; this is caused by the roots beginning to push out, and the sooner they are in the ground after they have arrived at this stage the better. A careful, sensible cultivator will look at his bulbs and plant them at once, when the roots show signs of moving; if planting is delayed until the roots have pushed outside their brown covering, it is almost impossible to get them into the ground without injuring the bulbs. Some effort must be made to get the varieties which have a tendency to grow to the same height into the same rows. The old plan, which I do not think can be improved upon, was to plant seven rows in a bed 4 feet wide. The

lowest plants in the centre row, and the next tallest in the two rows next to it, and the dwarfest Tulips were planted in the two outer rows. The Tulips were sold as first row, second row, &c., up to the fourth or centre row flowers, and the classes were mixed, beginning with the rose-coloured varieties, flamed or feathered, and planting alternately with them the bizarres and hybloemens. To those unacquainted with the show or amateurs' Tulips, I would remark that they are arranged in classes—viz., bizarres, hybloemens, and roses, and these are subdivided into flamed and feathered varieties. Another class is the "breeder" or self Tulip. "Why breeder?" someone may say. The name arose in this way: Nearly all the seedling Tulip flower for the first time in a self-coloured state—that is, the roses and hybloemens are rose, scarlet, purplish, maroon-purple, or lilac-purple, with a clean white base. The bizarres are red, crimson, or chestnut-coloured, with a clear, deep yellow base after a few years, sometimes as many as ten years. The self Tulip will break into flame or feather, and if the bulbs have been distributed before they break the process may take place in different gardens the same season, hence arises the word "strain." One grower in Kent may get a break, another in Sussex, and yet another in Surrey; and thus we read of Hardy's strain, Horner's strain; and the late Mr. Barlow was celebrated for his good strains, which he used to purchase. Some of the

ROSE AND SCARLET TULIPS in the self state are beautiful exceedingly, and one would rather that they did not "break" either into flame or feather. But there is no accounting for it; it is a freak of nature, and the result cannot be hastened or delayed by any process of culture. In January the Tulip plant appears above ground, and this need to be the signal for the fancier to get out his apparatus for covering, the more simple being a series of iron hoops bent over the bed at intervals of 3 feet or 4 feet, and mats were thrown over the hoops whenever bad weather set in. A dry frost is not injurious, nor does wet injure bulbs or plants; but frosts after rain are certainly to be guarded against, for the axils of the leaves hold water, and when this is allowed to freeze the delicate outer coating is ruptured, and disease will sooner or later follow in the wake of these frosts. The bent hoop and mat coverings will not do to protect the plants when in bloom. The best arrangement is a light canvas covering



Fig. 2.—Buds of Christmas Rose. (See page 506.)

that will admit light, but will also throw off the water from rain, hail, or snow. I have seen an unprotected bed of Tulips in flower covered with snow, and also bent double by sharp frosts so late as May. Therefore, if Tulips are to be of any use, or give some degree of pleasure to their owner, it will be necessary to protect them. To save all the trouble and mess of temporary shading, one of the best growers has built a glass structure to cover his Tulip-beds; it is glass to the surface of the ground, and amply provided with ventilation; and it is an uncom-

4800.—Fence behind border.—The wire-netting will do very well if the situation is a sheltered one. But Clematis and other creepers are not so successful generally as an open fence as on a close one, the reason being the wind cuts through often with considerable force. A draughty place is not suitable for anything of a tender nature.—E. H.

mon treat to a Tulip fancier to see the handsome foliage of the Tulips under glass, spotless, immensely large, and glaucous, as if silvered. The glass-roof is an effectual protection against all weathers. I have seen these Tulips grown in flower-pots; but they were not altogether satisfactory, and I would certainly not recommend their culture in this way. As border flowers they are in their place, and make a rich and varied display at but little cost. J. D.

4847.—Sowing perennials.—There is not much gained by sowing perennials at this late season. Many of the seeds would be likely to perish during the winter, and very few of those which grew would flower next summer. Gaillardias might flower late in summer, but Delphiniums, Campanulas, and Columbines will hardly do so. Better sow the perennials in March or April in a nursery bed, and fill in the border next year with annuals.—E. H.

— With the shortest and darkest days of the year fast approaching it is out of the question now to think of sowing seeds of perennials with the possibility of their making much progress towards flowering next year. If the query had appeared in the month of June "Perseverance" might then have realized his wish. I should advise relying mostly upon annuals for next year, and at the same time raise a stock of perennials for planting when the annuals have finished blooming. Even among annuals "Perseverance" will find types belonging to the families that are particularly desired. For example, among Lupinus nothing could be prettier than a mass of *Lupinus nanus*, which is easily obtained by sowing the seeds where the plants are required. It grows about 18 inches high, has long spikes of blue and white flowers, which come in succession for a long period. *L. Hartwegi* and *mutabilis* are other good annual forms. Perennial Delphiniums are not to be thought of for next summer, but annual types of the Larkspur are a host in themselves, rich in variety of habit and colour. Of *Campanulas*, *C. carpatice* raised early is a perennial kind that might be relied upon to bloom abundantly in late summer and autumn. It occurs in blue and white forms, and is easily raised from seed. Among annual kinds *C. macrostyla* is curious and pretty, a beautiful thing not often seen, and *C. Lorenzi* with blue flowers grows freely from seed. Gaillardias raised early would give a wealth of bloom if strong when planted out. A charming annual I can strongly recommend for a sunny bed or border is *Sphenogyne speciosa*. It should be sown where it is to bloom, and the plants thinned so that each has nearly 2 square feet of ground to spread on. The plants hide the ground with a mass of graceful foliage and flower in wondrous profusion. The flowers are Daisy-like, about as large as a penny *Lemna*, and orange yellow in colour, with a black base forming a ring in the centre of the flower. When open in the sun it has a brilliant effect, and if allowed room it goes on growing and blooming for at least three months. Iceland and Shirley Poppies, too, sown in spring, would give abundance of bloom in a variety of pretty tints.—A. H.

4857.—*Tropaeolum speciosum*—This is hardy, and may be left alone. I like to see it best wandering about through shoots, or sending its vermilion-flowered racemes through a hedge. It would do well, I should think, against a trellis, and requires a good position and a rich, moist soil. If to be planted out, the spring is the best season for this, and lot it alone to go its own way. It is beautiful hanging over a ledge on the rockery, or mounting up into a shrub. I wonder how a splendid creeper is not more grown in gardens. There is an impression it is tender, but such is not the case; but it must have moisture.—C. T.

— This is a hardy plant, and if occupying a fairly sheltered position will be quite safe. The summer was too hot and dry to suit it, and the plants, at any rate born in the south, made but little growth, as you say, until recently. This *Tropaeolum* enjoys a cool, moist, and shady, yet not too much exposed, position, and a light rich soil, and then grows and blossoms profusely with a minimum of care.—E. C. R.

4806.—*Convolvulus minor*.—Dwarf Nasturtiums are the same thing as *Tropaeolum*. You cannot have anything better for a smoky garden, but the tall kinds frequently do better than the dwarf, partly because

they are of stronger growth and do not need such good soil, partly because they can run up more into the light and air. *Tropaeolum Lohbianum* is a very showy (climbing) variety, and *T. Fireball* is also excellent, indoors or out. Minor *Cucurbitals* will flower fairly well; but *Phlox Drummondii* and *China Asters* will give splendid masses of rich and varied colouring, and *Cornflowers* and *Chrysanthemum coronarium* (annual) will both do well and be found useful for cutting.—B. C. R.

CHOICE LILIES.

LILIUM BROWNII.

This origin and early history of this Lily appear to be obscure, for by some it is considered of garden origin, while by others it is regarded as a native of China and Japan. This I should consider very doubtful, for among the vast numbers of Lilies sent here from Japan during the winter months I have never found the true *L. Brownii*, though the nearly allied *L. odorum* or *jeponicum* is imported from that country in quantity. *L. Brownii* is a remarkably beautiful and striking Lily, belonging to the tube-flowered section, forming the *Eulirion* group of Mr. Baker. The flowers, which are large and massive in texture, are ivory-white within, but heavily tinged with chocolate on the exterior, especially if they are in a position fully exposed to the sun, as where heavily shaded the marking is less pronounced. The bulbs of this are very distinct from those of any other Lily, being narrow at the base, widening towards the centre, with a peculiarly flattened top, the entire bulb being tinged with reddish-brown. Its flowers have an agreeable perfume, which is not so powerful as in many other Lilies. The foliage is very dark-green, while the stem, especially towards the base, and the leaf-stalks are tinged with purple. When the blossoms are fully expanded the dark-brownish anthers stand out very conspicuously against the ivory-white petals. *L. Brownii* is, especially when dormant, very impatient of an excess of moisture, as the scales of the bulb are liable to decay just at their base, and sometimes the bulb, which at a casual glance appears to be sound enough, will fall to pieces on being handled. Though by no means a rare Lily, it must be regarded among the more uncommon kinds, so like *L. Leichtlinii*, *Hansoul*, *Neigherense*, and others, it always commends a good price. It is thought to be named in honour of Mr. F. E. Brown, a nurseryman of Slough, near Windsor, in whose catalogue it was published about fifty years ago, so that it is not new. The only Lily with which *L. Brownii* can be confounded is *L. odorum*, known also as *L. japonicum*, and in auction catalogues, during the winter frequently called *L. japonicum Colchesteri*. Though a good deal of confusion has existed between the two the points of difference are so well marked that there is really no excuse for it, as commencing with the bulbs those of *L. odorum* are whitish, and in shape more like those of the *longiflorum* section, that is broader at the base than in *L. Brownii*, while the centre is somewhat raised. In all stages the stems of this are green, the leaves much broader and thinner in texture, while they are throughout of a dull pale-green, very different from those of *L. Brownii*. The flowers, too, are somewhat shorter and rather more widely expanded at the mouth, while the exterior is much less deeply tinged than in *L. Brownii*. This Lily is said to have been introduced early in the present century, but was soon lost to cultivation, and it is only within the last few years that the constant importations from Japan have made it comparatively common. It is, however, not a good traveller, the bulbs being liable to decay just at the base, as mentioned in the case of *L. Brownii*. On this account freshly-imported bulbs need to be closely examined before purchasing them. It is somewhat difficult to understand the specific name of *odorum* being applied to this Lily, as so many other members of the genus are quite as fragrant. The above two Lilies may be easily grown in pots.

H. P.

4888.—Poultry destroying garden.—You must not kill your neighbours' wife, as they can sue you for their value, but having given them warning, you can send them a demand for damages to say reasonable amount, and if the money is not paid, take out a County Court writ, and you are almost sure to get the money.—B. C. R.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in *GARDENING* free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on the reverse of the paper only, and addressed to the Editor of *GARDENING*, 37 Southampton-street, Covent-garden, London. Letters on business should be sent to the Postmaster. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as *GARDENING* has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be given, and those who reply would do well to mention the facilities to which their experience is gained. Correspondents who refer to articles inserted in *GARDENING* should mention the number in which they appeared.

4876.—Roses for pegging down.—What are the best kinds of Roses for pegging down over a sunny bank?—B.

4877.—Moving Apple-trees, &c.—Is it too early to move Apples and other trees, to leaves on which are still green?—E.

4878.—Outdoor plants.—Which is the better time to transplant perennials with a view to forming a herbaceous border, now or in the spring?—H. P. H.

4879.—Pegged-down Roses.—Will "J. C. O." kindly say what are the best kinds for above, and the best time to plant them in warm garden, west coast?—H. B.

4880.—Fuchsias from seed.—I wish to know how to grow *Fuchsias* from seed, as I have a prize plant which I cannot rear a slip from, and I am afraid I shall lose it.—A. WATKIN.

4881.—Foliage Begonias.—Will someone kindly give me the names of a few of the best foliage Begonias with their colours, and also where they could be obtained?—J. B. R. P.

4882.—Treatment of Rhubarb.—I should be grateful for information respecting the best treatment for Rhubarb at this season to produce abundance of stalks next spring?—M. C.

4883.—Plantains, &c. in a lawn.—Will someone please be so good as to say what should be done to get rid of large numbers of Plantains, Dandelions, &c., in a lawn?—WOODLANDS.

4884.—*Ostrowskya magnifica*.—Would someone kindly inform me what kind of soil and what situation best suits *Ostrowskya magnifica*? Any hints for its culture would be welcome?—F. E. THOMPSON.

4885.—A Virginian Creeper.—Will "A. H." who gives particulars of a new Virginian Creeper called *muralis*, kindly tell me where such plants can be procured, and if best to plant in autumn or spring?—M. C.

4886.—*Primula obconica*.—I have a splendid lot of *Primula obconica* in greenhouse, and I am told they are very poisonous plants, and dangerous to grow. I should like an opinion on that?—CONSTANT READER.

4887.—Destroying ants.—Will someone kindly give me the best mode of destroying ants? They are in an out-house adjoining the kitchen. I have tried paraffin oil, but it only drives them to another place.—R. M.

4888.—Violets in winter.—Should the runners be cut off Neapolitan and Marie Louise Violets in winter? They have been out all summer when the plants were in the open. The plants are new in a frame.—PETERIC.

4889.—Semi-double white Ivy-leaved Pelargonium.—Is there a semi-double white Ivy-leaved Pelargonium as good as *Mme. Crouse*, also a lilac-tinted variety? If so, should be glad of names of such.—O. N. P.

4890.—*Pteris* not thriving.—I have a specimen plant of *Pteris* major in a 12-in. pot. It has not done well this year. It will require potting early next. What kind of compost suits this family best? It is about five years' old.—J. B. R. P.

4891.—*Chrysanthemum M. G. Grunerwald*.—Reply to *GARDENING* of 7th October, page 430, will "J. G. W." kindly tell me where cuttings can be obtained? My efforts to secure them since the above date having been unsuccessful.—J. L. R.

4892.—Treatment of *Dianthus*.—Will any person kindly let me know how I should grow *Dianthus*? I want to have a large bed next year of mixed colours. Is there any difference between the Indian, Japan, or Chinese *Dianthus*?—ENGLAND.

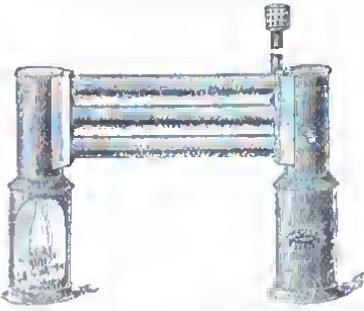
4893.—Eucharis and Amaryllis.—May I keep these in a Cactus-house, night temperature, 55 degs to 60 degs, and day, 65 degs to 70 degs, for flowering? Should water be freely supplied, and when may they be expected to flower?—W. N. G. L.

4894.—Mealy bug on a *Tausonia*.—My *Tausonia* is infested with mealy-bug. Will someone kindly advise a remedy—cheap and effectual? Syringing is not practicable, as I have flowering plants underneath. Is there any other method of destroying the filthy pest?—O. N. P.

4895.—Trees and shrubs.—Will "A. H.," who answered question No. 4783, in No. 704, kindly tell me where I can procure plants of the *Ampelopsis* miracle mentioned by him? I have enquired for it of several florists without success. Is it the same as *A. japonica* Hogg?—H. P. H.

4896.—Camellias losing their buds.—Will anyone kindly inform me the cause of the buds on expanding, but having only one or two open, and in some cases dropping. The temperature of house is, night, from 55 degs to 60 degs, and day, 60 degs to 70 degs, kept moderately moist at roots, but not in a moist heat.—W. N. G. L.

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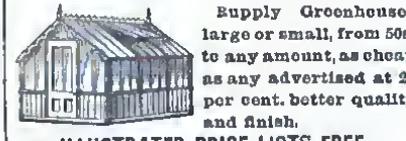
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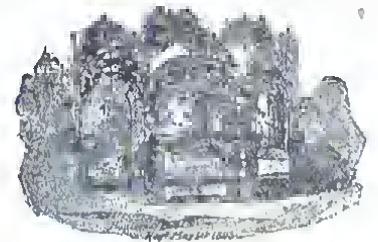


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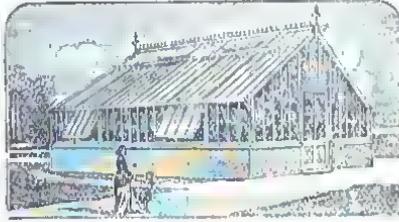


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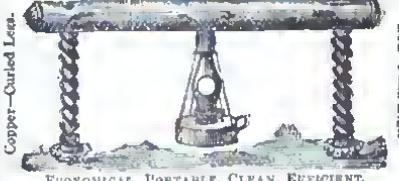
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No. 767.—Vol. XV.

Founded by W. Robinson, Author of "The English Flower Garden."

NOVEMBER 18, 1893.

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ROSES.

ROSES FOR SHOW.

There have been several queries in GARDENING recently that have referred to the above heading, I thought a few notes upon the subject might be welcome. The first point should be the securing the varieties capable of producing a bloom with the qualities an exhibition flower is considered to need. There are many good roses for general culture that are not capable of throwing a show bloom, or at least do so very seldom. As a guide, I name twenty-four H.P.'s that are likely to produce a large percentage of exhibition flowers, provided the plants are grown as I will endeavour to describe later on. H.P.'s; A. K. Williams, Alfred Colomb, Camille Bernardin, Charles Lefebvre, Comtesse d'Osford, Gustave Figueau, Honoré Vernet, Mme. Gabrielle Luizet, Marie Beaumont, Maurice Bernardin, Mrs. John Laing, Princes of Waltham, Prince Arthur, Suzanne Marie Buissonville, Victor Hugo, General Jacqueminot, Baroness Rothschild, Duke of Edinburgh, Duchess of Bedford, Prince Camille de Rohan, Marie Verdier, Louis Van Houtte, Etienne Levet, and Dupuy Jamain. These should be aided by the following good Teas: Anna Ollivier, Catherine Mermet, Comtesse de Natchillur, Ernest Metz, Edith Clifford, Inventive Flora, Madame Hoste, Niphetos, Souvenir d'Elise Vardon, Souvenir de S. A. Prince, Souvenir d'un Ami, and The Bride. One Bourbon, Madame Isaac Periere; and three H. Teas in Caroline Testout, La France, and Viscountess Folkestone will make up a list of very reliable varieties, and with the exception of former Vernet, Duchess of Bedford, C. de Nadaillac, and Souvenir d'Elise Vardon, all are also good for general culture; so that I can strongly recommend the above collection. A very generous treatment, with considerable attention, is necessary to secure well finished blooms. The pruning needs to be harder, quality instead of quantity being the object. Immediately the buds are visible, all but the centre one need removing. Unless this be done very early I would leave the buds to help the appearance of the bloom. Some few judges do not like to see a "truss" where "blooms" are specified in the schedule. My own taste goes for a more natural truss, the surrounding buds greatly improving the stand in my opinion. A high state of cultivation without coarseness is the great desideratum. There is also much art in cutting and choosing the blooms, some varieties needing to be cut very much younger than others, if they are to travel well and be in a uniform state when staged. I would advise staging being left until the exhibition ground is reached, but by all means arrive early. Good Moss, clearly-written labels, and taste in arrangement helps the exhibit very much. Many things have been tried in the water in order to make the flowers last fresh for a longer period, but I have found nothing better than fresh water (hard preferred) and cutting off the bottom of the stalk with a sharp knife. If the

flowers are left in water for any time, especially if the latter is not perfectly clear, the pores of the stem are soon choked with impurities, and the bloom fades. The smallest portion cut off leaves a free course again, and it is often very surprising to note the difference in a bloom so treated. The art of exhibiting ran only come from experience, but I trust these few notes may be of some little nil to beginners. P. U.

ROSE W. A. RICHARDSON.

FROM paragraphs appearing now and again in GARDENING it seems that the above Rose does not always turn out to the satisfaction of those who plant it. I have a bush which has yielded me a quantity of good button-holes, although only planted on the 18th of October last year, in a heavy brick earth loan on a subsoil full of flints. A good-sized hole was dug out and made much deeper than was required to take the roots; the bottom portion of the soil was returned after having been mixed with a little decayed manure and road-grit. The remainder of the soil taken out was lightened by the addition of road-sweepings. The roots of the tree were carefully spread out by hand over the bottom of the hole, now partly full of the returned soil, mixed with decayed manure, top soil or so in contact with the roots being only soil and road-grit, the remainder of the soil, lightened by the addition of road-sweepings, returned, and all trodden down firm. A stake or two to the principal branches must not be omitted, and as cold weather approaches thrust a handful or two of straw or horse litter into the heart of the Rose so as to protect the collar from frost. About six inches of the highest shoots were taken off at planting time, and a few frosted pieces removed in the spring. The flowers are cut with good long stems down to firm wood, and they have been assisted with a few waterings of sulphate and nitrate of soda in weak solution, to which they quickly respond. Mulch heavily in hot weather, and keep a look-out for earwigs. Any results as to pruning, so as to secure the greatest number of buds, and cultivation under glass, either in pots or planted out, will be acceptable.

G. H. W., West Brighton.

4879.—**Pegged-down Rosses.**—The best kind of Roses for pegging down is the strong-growing Hybrid Perpetuals, although for rather a large bed such vigorous-growing Teas as Gloire de Dijon, Mme. Bernard, and Mme. Lambert do very well. The kinds of H.P.'s to be avoided are those which make short, sturdy growth, like Merveille de Lyon, which we may accept as the type of those not suitable. On the other hand, we may choose such as Charles Lefebvre, Duke of Teck, and Magna Charta as admirably adapted to the purpose. Some good growers amongst those loving light or rose-embowered flowers will be found in Ulrich Brunner, Mme. Gabrielle Luizet, Duchesse de Vallombrosa, M. Nonan, John Hopper, Mlle. Eugénie Verdier, Hippolyte Jamain, Etienne Levet, and Jules Margottin. Some good red and crimson flowers will be found in the following: General Jacqueminot, Mrs. G. Dickson, Eclair, Earl Dufferin, Alfred Colomb, Dr. Andry, Marie

Charles Wood, and Marshal Vaillant. With regard to planting, you had better get it done at once if the weather continues open.—J. C. C.

—In reply to query 4876, I give a few names of suitable varieties; but all free growers are suitable. As to the best time for planting, by all means let it be done as soon as possible. You will find it better to prune your plants rather harder than usually advised for strong growers, as the wood, not being upon established roots, will be unable to carry many blooms the first year, and still produce good growth for the succeeding summer. After the first year pruning will consist mainly in cutting out the older wood and thinning out the weakest of summer growths.—P. U.

4902.—**Marechal Niel Rose.**—The Rose is in just the condition it would be in after careful management. The lower leaves falling is quite natural to it at this time of the year. The long shoots will flower at every eye their whole length if the wood is well ripened. To secure this latter condition you must keep the house well ventilated both by the top and bottom ventilators, and only give fire-heat to keep out frost for the safety of any other plants there may be in the house, as the Rose itself would be better without fire-heat up to Christmas unless the frost were very severe. I find I have to allow a period of ten weeks to get this Rose in flower by the beginning of March. For the first six weeks the forcing must be very gentle; in fact, it must be slow until the flower-buds are formed, or the young shoots will continue growing instead of forming flower-buds. I used to commence fire-heat about the 20th of December, but it was such an anxious time, preventing the young shoots growing on, and the temperature had to be regulated with such nicety to get the flower-buds to form, that I now wait until the advent of the new year before commencing forcing. Some growers cut off the soft tops of the long shoots, but I never do, although at the present time I have plenty of them over 20 feet long. I start forcing with a temperature of 50 degs., rising to 60 degs. when there are a good many flower-buds to be seen.—J. C. C.

—I have little doubt that your Roses are in a house of mixed subjects. If so, they will commence growing in ample time to produce bloom at the period you desire. The lower leaves turning yellow is only the result of your rods ripening, and unless the growth of last summer is matured, you will fail to get a good crop of bloom from it. You might stop the points of growing rods, if they seem inclined to push too freely, from the tip, instead of breaking from below. You will not get bloom from the end of long rods, these being produced from axillary or lateral growths upon the 8-foot shoots you mention.—P. U.

4876.—**Roses for pegging down.**—A sunny bank, such as you describe, is one of the finest aspects for this style of Rose-culture it is possible to have. All strong-growing varieties will do, but it is best to choose those which produce blooms upon upright stems. Unfortunately, the catalogue states whether a Rose has this characteristic or not, so I will name a few of the best (white Moss),

Chloire Lyonnaise, Bonquet d'Or, Ulrich Benner, Gabrielle Luizet, Mrs. John Laing, General Jacqueminot, Abel Carrière, Climbing Perle des Jardins, Chloire de Dijon, Henriette le Beauveau, Charles Lefebvre, and Dupuy Jannin.—P. U.

I have just completed the planting of a sunny bank with Roses similar to what yours appears to be. In this case, however, the soil is extra good and deep, and the situation sheltered from rough wind, so that I had no difficulty in making a selection of choice Roses. The sorts included Chloire de Dijon, Réve d'Or, Madame Bérani, Safrano, Marie Van Houtte, W. A. Richardson, Climbing Victor Verlier, and Madame Gabrielle Luizet. If in your case the position is an exposed one you had better select one or two of the China Roses. Cramoisie-Supérieure would make a brilliant show both in early summer and autumn. Others of a more hardy and rambling character will be found in Danilee Rambler, Félicité Perpétuelle, Ruga, and Williams' Ecargreue.—J. C. C.

4906.—Roses and their treatment.—I am always glad to help any amateur to the best of my power, and it is gratifying to receive your thanks. L'Idéal is much more of a perpetual flowerer than the majority of strong climbers, and I think if you remove the weakest wood only, you will secure a ground crop upon the remainder by March. Bring them under cover at once now, and prune all of them in the usual way. If kept cool for a few weeks, and then introduced into the temperature you name—say about Christmas, or a trifle earlier—they will bloom in March.—P. U.

You appear to have treated your Rose L'Idéal in a very practical manner so far. With regard to pruning the two long shoots to which you refer, if you have room for them trained under the glass in your greenhouse they may remain their whole length, or at most only the soft top removed. If there are any short shoots in any part of the long ones, they should be cut back at once to the second bud from the base. In the matter of pruning those you have in pots, they should be dealt with at once if they require it, but the harder you cut them back the bigger it will take them to start into growth. In my own practice I prune Tea Roses in pots for early forcing in June or July, if there are any unruly branches, and in November I merely take off the soft tops of any shoots that do not appear to be well ripened, but if the plants are dealt with in the summer for the purpose of pruning them into shape, they do not require but very little done to them in the winter. If you can only command a temperature of 50 degs. you had better not introduce them into the greenhouse until the beginning of January, and then it will be the end of March or middle of April before they flower. I may mention that I like to repot the plants within a week or ten after they are pruned if they require it.—J. C. C.

GARDEN WORK.*

Conservatory.

If Chrysanthemum blooms are to be kept as long as possible the house must be freely ventilated on fine, mild days, with a little air left on all night when not raining or freezing; and these must always be just a little warmer in the pipes to keep up damp and render the atmosphere fresh and buoyant. These conditions will also suit all other flowering plants. The least damp, for instance, will spoil Zonal Pelargonium and Bourdardias. Tree-Cactuses must have a light position near the glass; they associate well with Zonal Pelargonium. Plumbago repens, having now pretty well finished blooming, should be pruned back and receive less water at the roots; this plant blooms freely in small pots, and cuttings strike freely in heat in spring. Keep Freesias on shelves in a light position; give a little weak liquid-manure to the earliest plants, which are approaching the flowering-stage. It is time the Lily of the Valley, Spiras, Solomon's Seal, and other forcing plants were potted now and plunged somewhere in a cool-house. Put Tuberoses in single pots as soon as they arrive; they will flower well if started in a greenhouse. Water once to settle the soil, and then keep on the side of dryness till there are signs of growth. I can sometimes tell to keep these things dry till they begin to grow; but there cannot be any growth without some moisture. Tea Roses which have been pruned, top-dressed, and rested a bit may be placed in a temperature of 50 degs. to get a start. The best possible place for starting Roses is a low, span-roofed house or pit, the pots plunged in a bed of loam where there is a little ventilation—just enough to cause a mild heat. This will set the roots in motion and the buds will break strong, and the growth will come as clean and healthy. Should insects appear

spring with a decoction of Quassia-chips, mixed with a little soft-soap; but there are plenty of liquid insecticides to select from that will kill insects without discolouring the foliage. Lately I have been using Sunlight soap, about 3 ounces to the gallon, for dipping and scrubbing purposes, and find it both effective and cheap. Fickler's White and other early-flowering Azaleas may have a little warmth now to start the blossoms. If there are signs of thrips on the leaves either dip or syringe.

Unheated Greenhouse.

Frost, if severe, will spoil the blooms of the Chrysanthemums, but a canvas blind which can be rolled down at night will be a great protection; the upright sashes (at least the glazed portion) may be matted up as long as the frost continues. Use as little water in the house as possible, and ventilate early of every favourable opportunity; remove all dead or discoloured leaves, as they tend to encourage damp, and damp is quite as destructive to flowers as frost. Foliage will be prominent in this house. Several of the Fan Palms, such as Chamaerops excelsa, are hardy enough to keep in health sheltered by a glass roof, especially if canvas covering is placed over the roof on frosty nights, and such plants will take no harm if the covering is not removed for a week or even longer. Good Italianum, and other florid, Jasmium nudiflorum are valuable now, and good-sized pans filled with Stranbergia lutea are very effective. Clumps of Heliconia niger and its varieties are among the most charming plants for a cool-house. I have recently seen large clumps of H. niger maximum growing in tubs giving promise of producing hundreds of blossoms by-and-by. These give little or no trouble, and in summer hang about outside. Well-grown bushes of the variegated Eranthis have a fresh, brassy appearance, and some of the hardy variegated Grasses may be used for edgings to the border.

Stove.

The store Aralias may be grafted on seedling plants of Aralia Sieboldi. The grafting is a simple process; a slice is cut off the stem of the plant near the bottom, leaving a tongue at the bottom of the cut; a corresponding slice is cut off the side of the scion or graft, and the two are then fitted together and tied firmly with soft matting. The plants are afterwards kept in white cloths in a propagating-case for a time till the union is completed; the head of the stock is then removed, and the graft becomes the main plant. Very handsome are the tropical varieties of Apparagus, and so useful for many decorative purposes. To obtain seeds, set out a plant or two in a border and train under the roof of a cool store or intermediate-house. I saw a small house planted with A. plumbeus a short time ago; the roof was completely hidden, and there was a growth of stuff in such abundance that it was not easy to see a plant to propagate from cuttings; but with good seeds a stock may soon be obtained.

Cucumber-houses.

Do not encumber this house with plants in pots if it can be avoided. It may be used to bring on bulbs and to grow on young stuff in such a way that it will be ready to be grafted in a very serious matter if green-fly or thrip were introduced. Winter Cucumbers are not difficult to manage. A steady night temperature of 45 degs., with a comfortable bottom-heat of 25 degs., will give all the heat required. Humidity in the atmosphere is necessary, but not to the same extent as in spring or summer. Pinching the growing shoots one day beyond each trill is a cardinal point in Cucumbers, and must be done in winter, and the pinching should be done when merely nibbling out or pinching the terminal bud will suffice. It is also important that frequent top-dressings be added to the borders; half an inch at a time will suffice. This top-dressing not only encourages the roots, but its tendency is to prevent stagnation in the atmosphere.

Cold Frames.

Where properly prepared Viols will now be flowering freely, Marie Louise being one of the best. Remove everything in the nature of heat from the frame, and ventilate very freely, even going to the extent of drawing off the lights when it is fine and mild.

Window Gardening.

Bulbs that were potted or placed in glasses each may now be taken from the black rellor or cupboards, but should not be placed in the full light all at once; this should be a gradual process, lasting a week or so. Primulas are fairly hardy, but must not be exposed to frost. When frost is expected take all the plants from the window to the centre of the room and cover with the newspapers.

Outdoor Garden.

The frost has come at last, and destroyed the brightness of the outside garden. A few things are still fresh and beautiful, notably the pretty yellow autumn-flowering Anagallis, or Sternbergia lutea. The Christmas Roses are on the move, and where as largely grown as they ought to be a good deal of interest will be inspired as the blossoms unfold. An amateur friend who has rendered clumps in his garden covers them as soon as the flowers show some faint hints of light. In cold winters I advise the Christmas-Roses never to have suffered from the drought of the past summer, especially where exposed to bright sunshine. A heavy mulch of leaf-mould is good for Christmas Roses, and such things as Hepaticas and Hardy Cyclamen. If any bulbs remain out of the ground get them in at once. Groups of Chionodoxa Lucida near the front of the border will be charming next spring, and the bulbs are cheap now. Every year there is a greater demand for effective hardy plants that will do for a couple of flowers; and even now are the Perennial Guillardias, of which a grand display may be taken as the type. Another plant that everybody should secure for next year's cuttings is the White Everlasting Pea. I have seen it trained over a wire arch and up the stems of Apple and Laburnum-trees, and in all positions it was effective; it should have plenty of nourishment. It is always possible, by a rearrangement of the furniture of the room, to make the room more interesting. The same thing occurs in the garden. Put down some of the cutting-occasions, Lilies and Luteals, and introduced things of better character.

Fruit Garden.

The open weather continues push for and the plants and pruning of fruit-trees. No one should neglect young trees. The reason why so many old fruit-trees are

tolerated is, it would take so long to get up a young tree to fill up the blank; but a few coning trees, selected so as to keep the collection of fruits well up to date, were planted every November, there would always be trees of a bearing size to fill up blanks; and the lifting of coning trees has always a beneficial tendency as regards fertility. As regards Pears, it is generally admitted that Marie Louise and Docteur du Conice stand in the front rank. They bear good fruit, and have constitutional vigour, and are both so ready to make headway under the changed conditions of soil and climate to which we are exposed. These two kinds had made a reputation, and in the long list of varieties catalogued there are plenty of good Pears that will come time in the future, when better known, be largely grown. There is, I am convinced, a future for Pear-growers where the soil and climate are suitable. I was in a garden a short time ago where long lines of cordon Pears stretched across the garden, six feet high, and laden with fruit of the best kinds. The stocks had been planted in rows, and the Pears limbed upon them, and nothing could have been simpler, cheaper, or, I might add, better. Stocks are cheap enough, and on heavy soils, if the Quince is planted but close to the ground, in a short time the trees will be on their own roots. The same course may be practised with the Pear-stock, and as the trees shoot up strain some wires along, and in a few years there will be bearing trees.

Vegetable Garden.

The autumn has to a large extent made amends for the summer, and vegetables of all the usual kinds are very plentiful. Cauliflowers are splendid. Brussels Sprouts, where planted early enough, are a good thing, and sown with button-like sprouts, as tender as marrow, become quickly grown. Peas, at the time of writing, in some gardens are coming both green peas and blossom, and Turnips and all kinds of roots sown for use in winter have done well. After the rains came copiously vegetables came on by leaps and bounds, and the gardens now overflow with vegetables. The earth, when well cultivated and cared for, will always respond generously to the efforts of the cultivator. Gather up all the tree-leaves every where, and store them for making hot-beds. A heap of fermenting leaves, placed round Rhubarb or Seakale stools, will speedily start it into growth, and hot-beds will be ready to be sown for Potatoes, Carrots, Apparagus, and other things. Scarcely anything in the solid way equals a steadily-grown lettuce from a gentle hot-bed. French Beans must have genial warmth; 60 degs. to 63 degs. at night is not too warm. Stake the Beans before the plants fall over, and when maintained in an erect position they grow better. Vetch's Autumn Self-protecting Urve oil should be in every garden. The leaves fall closely over the heart, and with frost a great deal of protection, even frost will, of course, spoil the hearts, but up to the present they are all right, but before frost comes very sharp have them laid in a trench, where a ruler of dry Fern or some such can be laid over them. Cucumbers will have water at the roots when hot pipes are used for bottom.

E. HONNAY.

Work in the Town Garden.

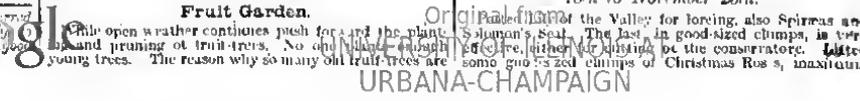
Two or three sharp frosts have at last cut off the Dahlias, Begonias, and other tender plants, except in exceptionally sheltered places, which have until recently been so gay. The roots or tubers of all such tender subjects should now be lifted out stored before they can be injured by frost of sufficient severity to penetrate the ground. The best way to treat Dahlias roots is to lift and treat them most of the earth, cutting down the tops 10 inches or 12 inches of stem, to which the labels should be secured with wire; then lay them out in a shed or loft for a week or two to dry, and finally store them away for the winter in a cellar under the stage of a cool greenhouse, or in any other place from which frost is excluded, and which is neither very damp nor excessively dry. Both these extremes are injurious to Dahlias roots, as well as to those of the Tuberoses Begonias, which, in the whole, should be treated in the same manner; but in this case let them become tolerable dry before cleaning off the loose earth, especially if this is of a tenacious description, or the skin is liable to come away too, and this should be avoided. Gladioli should be taken up, cleaned, dried to a moderate extent, and then stored for the winter in paper bags or on shelves in a dry room. Roots of Salvia patens, the Marvel of Peru, and the tall or hideous Lobelia keep best with a moderate amount of half-moist earth round them, and those of the handsome Tiberias must never be allowed to become quite dry, or, though they may survive and grow, they will not flower the following season. It is high time now for Hyacinths and others to be grown in pots or glasses to be got to work, and, indeed, this would have been better done a month ago, at any rate for early or moderately early blooming. Put a bit of charcoal in each glass for Hyacinths, which will greatly aid in keeping it sweet, and place the glasses in a cool dark place—not in a warm one, or the tops will start before the roots and the flowers come to nothing. A pretty and easy way of growing these, Philips, Norvich, and other tuberos subjects for window or room decoration is in damp or rather wet sand or Moss; this is chosen that soil and just as effective, and the bulbs may be accommodated in any number in pots, pans, bowls, boxes, or the like. As soon as Gloriosa die down the tubers should be shaken out of the soil, rained, and then stored, with some half-moist, fresh Cocoa-nut-fibre among or round them, in large pots or bowls, placing these where a temperature of not less than 45 degs. to 50 degs. is maintained, and avoiding extremes of both wet and dryness. Chrysanthemums under glass are now in full beauty; prolong the life of the flowers by means of a cool yet genial, buoyant, airy, and moderately dry atmosphere. Begin inserting cuttings of naturally early varieties towards the end of the month.

B. C. R.

THE COMING WEEKS' WORK.

Extract from a garden diary from November 18th to November 25th.

On 18th I planted the Valley for forcing, also Spiras and S. Jannin's Seed. The last in good-sized clumps, in very close, either by planting in the conservatory, or in some good-sized clumps of Christmas Ros, in a situation



variety. They were fitted with as little disturbance of the roots as possible, and placed in large pots, and will be brought gently, without much heat, as the blooms will not be required before Christmas. Dipped Cinerarias and Bonvardias of which a few files had assembled in a solution of sulphuric soap, two ounces to the gallon, one ounce of T. d'oree-powder being added to three gallons of the solution. I had this quite effectual in destroying green-flies on plants generally, and is much cheaper than imitating when only a few plants are attacked. Finished pruning Gooseberries and Currants, and dusted them with soot and lime. I should dress them with the soot and lime even if I had no fear of birds, as it brightens and cleanses the bark, and when the bark is freed from parasites the trees are healthier. Planted more Calceolias and Lettucers. Potted a few roots of Chicory and placed in Mushroom-house. Made up another Mushroom-bed. I never allow a bed-space to remain long empty at this season. Took up Senkale for forcing. This is generally taken in quantity now, and laid in thickly on the north side of a wall, where it will be ready for moving to the forcing-bed as required. Will be covered with litter if frost sets in. Placed some old manure round the stems of Globe Artichokes; shall cover with litter when frost comes, just a forkful over each stool. The mould round the stools would probably be a sufficient protection most winters, but when badly frozen they are so late in starting, hence the value of a forkful of litter. Unnailed Fig-trees from walls, and tied the branches close together, to be ready for covering up when frost sets in. I do not believe in covering hill hills is necessary, but five minutes' work and a few mats will save the crops if the winter should be severe. Potted off Tomato seedlings. These will be sown on gently near the glass. A lot of robust plants are required for planting a house first week in January. Ham Green Favourite is the chief variety I have grown, also Criterion, Conference, and the old Bird. The last named is a good seller and cropper, but its shape is not liked, and Conference and Criterion are rather too small. I think bad setting is frequently due to errors of management. Too much or too little water, deficient ventilation, or mild draughts will cause the flowers to drop instead of setting. Tomato-houses should never be altogether closed, except in very cold or windy weather; and the same thing may be said of all plant-houses, except the stove and the forcing-houses. The houses where Chrysanthemums are staged are left open at night, and the flowers in consequence keep much longer.

4794.—*Erythrina Crista-galli*.—This is a very old garden plant, and I have in a quint "T. A. F." can obtain it from my nurseryman who deals in greenhouse plants. It is a native of Brazil, and was introduced into this country about 120 years ago. It is often called the Coral-tree. In the South of England it is almost, or quite, hardy, forming at the ground a stout root-stock, from which the shoots start each spring, dying back again in autumn, as it is biheraceous in character. The finest plant that I know is in a southern garden. It is in a border at the end of a glass-house, and has been there close upon thirty years. It never fails to flower freely, and this year has been magnificent, owing to the excessive heat. The only winter protection it gets is covering the crown with ashes. It can be used with good effect in the summer flower garden, and when employed in this way the plants are lifted and stored away from frost in a cool-house. If "T. A. F." has the convenience he may raise his own plants, as seed is procurable from some of the leading seedsmen; but it must be sown in heat. The plants will not grow very large, however, the first year. Although old, it is not common, and its effect in flower is so striking that I had many inquiries concerning it a few years ago when I used it among the summer bedding plants. It was formerly well grown at Battersea Park, and perhaps is still.—A. H.

4804.—*Double and Single Violets*.—There is no better plan than picking off the affected leaves as they begin to turn yellow. You may, however, try syringing them with soapy water in the morning when it promises to be a dry day, but Violets are so susceptible of damp in the winter months that syringing is a doubtful remedy. You cannot do better than remove the affected leaves. You had better try and get a clean stock next year by allowing the runners to remain upon the plants from this time, and early in the spring peg the runners down on small pieces of turf about 2 inches square, or else on the bed of soil. By the time it is safe to plant them in the open the runners will be well rooted. Meanwhile choose a shady border if you can for the plants to occupy next summer, and place a thin layer of manure about 3 inches under the surface. The roots will soon find their way down into it, and the growth under such conditions will be so vigorous that it will in great measure be able to repel the attacks of red spider. If your plants occupy a pit or frame that is heated by hot-water pipes, a little warmth from the pipes in cold, foggy weather will do good, but an ordinary hot-bed is not at all suitable unless you have a number of plants in pots. In that case you may make up a bed with tree-leaves 3 feet

high, and after placing a frame upon it, plunge the pots to their rims in the leaves, and within 6 inches of the glass. The warmth from the leaves will be just enough to keep the plants steadily growing in fairly good weather.—J. C. C.

HOGARTH HOUSE, CHISWICK.

WILLIAM HOGARTH'S house is one of the many good examples of domestic architecture scattered over the home counties, particularly in South Middlesex, through the old suburbs of Fulham, Hammersmith, Chiswick, Brentford, and Isleworth. They date from the end of the 17th Century. Some say that Hogarth never owned the house, but the Prebendal Court Rolls show that he acquired the copyhold on September 13, 1749, while he was living in Leicester-square or Fields. It was then that the Earl of Burlington built old Chiswick House. Hogarth House was also planted in the fields about a quarter of a mile northward, and midway stood Tunnel House, long since pulled down. In Burlington House stood The Cedars, Fairfax House, and Boston House, and between these and the Thomes, Corney House, now pulled down, and which gave its name to that part of the river. Like nearly all that class of house, 9-foot high walls were built round the grounds, which were

ture of about 80 flegs. A little basket of hay in the kitchen is a good place for a tortoise in winter, when they are mostly asleep; but when they wake up they should be supplied at once with food and a little warm milk. Clean, fresh water, too, should always be within their reach. They live for years under kind care, and sometimes lay eggs during the summer.—L. L. R.

WHITE FLOWERS FOR AUTUMN.

IS gardens of any extent the demand for white flowers is an all-the-year-round one, and unless care and forethought are exercised in growing hardy plants, that flower late in the season, there is a great deal more required from the tender plants under glass, and at this period of the year there is not so great a variety of plants to select from. I find the following hardy plants give us great help in maintaining the supply up till the time that severe frosts cut off all exposed blossoms:

ANEMONE JAPONICA HUNGARICA JOBERT is of the easiest culture, and flowers for a long period, as it continues to throw up flower-spikes from the base until stopped by frost, and as the individual flowers have footstalks long enough to allow of their being used for many decorative purposes there is no need to cut the whole stalk at once.

CHRYSANTHEMUMS of the early-flowering section are invaluable aids to the autumn flower basket. Mme. Desgrange and the beautiful Lady Fitzwygram begin to flower in July, and continue to do so until October, for if old plants that have been kept in pots or boxes in cool frames during the winter are planted out in April, and not pinched in at all, they will come very early into flower, while those grown from cuttings and pinched back once will not come into flower until September, and will continue the supply until many of the second early whites are in bloom. As an instance of the effect of hastening or retarding varieties, I may mention Mme. Lacroix as one of the finest whites at our early autumn show, yet it is one of the best for very late blooms.

CHRYSANTHEMUM MAXIMUM, one of the largest of pure-white Daisy-like flowers, although one of the best of white flowers at midsummer, keeps on flowering right up to November if mild weather prevails; and it is well worth giving the plant a partial cutting down in August when there are plenty of other white flowers, and encouraging these to make a late growth.

DALIAS are not very reliable, owing to their liability to get cut off by early autumn frosts; but on the sea-coast they flower even better in October than during such scorching summers as we have just passed through, when Dahlias did not at all come up to their usual excellence; but up to quite lately the White Cactus and Pompono varieties have been very beautiful.

MARGERITES (white) are nearly all the year-round flowers, and planted out in good soil they continue to grow and flower as long as any bloom can reasonably be expected. I am still cutting from plants that have bloomed for months past, and they still appear full of buds.

PYRETHRUM VILGINOSUM is one of the finest of all hardy autumn flowers, sending up spikes of bloom 6 feet high, crowned with heads of large white flowers. It is specially effective in autumn floral decoration. It requires deep, rich soil, plenty of manure, and transplanted every year. It is not nearly so much grown as it merits as a cut flower until it to



Hogarth House, Chiswick. Engraved from a photograph sent by Mr. Alfred Dawson.

and still are very tasteful and dignified old gardens. In these places fine trees were much patronised, Cedars of Lebanon and Mulberry-trees being favourites, and the fine effect of these old specimens is well seen at the present time. The well-known Mulberry-tree here shown from which William Hogarth doubtless often plucked fruit is one of them, and with the necessary bit of lawn underneath it forms the best possible set-off for such a house. The place has been recently acquired by Mr. Alfred Dawson, who has carefully restored it and repaired the injuries done to it during the last twenty years of neglect.

4820.—*Tortoise in a garden*.—There are two distinct kinds of tortoise, which are both sold in large numbers in the streets of London. The web-footed kind, or water-tortoise, eats worms, fish, and a little raw meat, and this should be supplied to them when they need it in winter. The land-tortoise, whose feet are not webbed (and the shell is higher and more steep), eats green food, such as Lettuce, Dandelion, Cabbage leaves, Grass, and Clover, which he cannot supply for himself in winter. Either kind needs a warm place in winter, though they have been known to do well in an unheated greenhouse, certainly they will die if exposed to the garden in winter. They should have a tempera-

be. On good soil it continues to branch out and produce its feathery white flowers for months, but it needs a late sowing to produce plants to flower in September and October.

J. GIBSON, *Co. port.*

OUTDOOR PLANTS.

PERENNIAL CANDYTUFTS (IBERIS).

In reply to several inquiries, evergreen plants, such as the Iberises, Dwarf Vaccinium, and the like are indispensable to a rockery. They should be planted as much with an eye to effect in the dead of winter as when they are in full flower



A Perennial Candytuft (*Iberis gibraltarica*).

in spring. The hardy species are all evergreen, and as they mostly form dense, healthy green cushions, these take the bareness of the rockery in the dull months as well as contribute to its beauty in spring and early summer. They are, however, most effective where they can hang over ledges, such as down the face of old walls, rocky banks, &c., and here, too, the more tender sorts would be much safer than if planted in the ordinary way or in the border. As spring bedding plants they are extremely useful, and they may be increased from cuttings in any quantity.

Iberis nummularia. This (here figured) is a native of Gibraltar, and was introduced into this country about 1732. It is one of the most popular of the genus, and with its variety *hybrida* is in great demand for winter flowering. It grows about a foot or so high, closely branched and tufted, with leaves and flowers much larger and more ornamental than those of any other species. It is, unfortunately, not perfectly hardy, unless the plants when young are established in an old brick or stone wall, and even here they are apt to suffer, especially in wet seasons. It may, however, be easily kept in a cold frame or greenhouse, where it will continue in flower throughout the winter. As greenhouse subjects both the species and variety are invaluable, their compact habit, fresh green leaves, and abundance of lilac and creamy-white flower-heads come at a time when most required; indeed, they may be utilised at almost any time, as they are rarely out of bloom. Plants well hardened might be tried in warm nooks of the rockery, and with a small piece of glass in ward of excessive moisture they might do well. It is a good greenhouse or summer plant, however, that this species proves most useful, and as it is increased from cuttings or layers with the greatest facility, no fear of losing it need arise. The variety is more compact in habit than the type, with large bunches of creamy-white or rosy-purple flowers.

I. Purrrr is a native of Sicily, and one of the most beautiful and useful of the hardy kinds for the rockery or border. It is little inferior indeed to *I. gibraltarica*, with the advantage of standing our severest winter. The flowers, of a pure ivory-white, are produced in abundance in compact corymbs, and continue from early May until July. The stems are shrubby, of the size much branched, and rarely exceeding 9 inches

in height. It is nearest to *I. Tenoreana*, but the leaves are smooth, not ciliated, and the flowers pure-white, not purplish, as in that species. It is a really useful species for the rockery, where it should be planted in gritty soil and facing east.

I. SAXATILIS, widely distributed in Southern Europe, is the dwarfest of all the species in cultivation. The stems are procumbent or trailing, not ascending, as stated in many books. It forms dense tufts of very dark-green, narrow leaves, quite entire, with somewhat ciliated margins. It is very free blooming, producing small bunches of pure-white flowers from early April until June. It was introduced about 1740.

I. S. VAR. CORREIFOLIA is supposed to be a hybrid between *I. saxatilis* and *semperflorens* or *Garreixiana*. It is a very neat, shrubby plant, taller and not so densely matted as the above, and producing its flat heads of white flowers from May to June. It is very easily propagated from cuttings or layers, and is often used as an edging for walks, &c. It is very neat and effective when in flower.

I. SEMPERFLORENS is an autumn and winter-flowering species, and unless in southern counties is not of much use as a hardy plant. The flower-heads are large, the flowers pure-white and sweetly scented; the leaves quite entire, smooth, and dark-green. It is a native of Sicily and Italy. *I. humilis* is a synonym.

I. SEMPERFLORENS.—This fine species is the common perennial Candytuft of our gardens, and with its variety *Garreixiana* is the species commonly met with in small places. It is quite as popular as the yellow Alyssum, and deservedly so, as it requires little attention and is attractive in winter as well as summer. It is evergreen, half shrubby, spreading, and will be found useful for old walls and such-like places where plants can get a foothold. It grows about a foot high, and seems to flower more freely in a gritty soil than in any other. There are several garden forms, the best of which is *asperula*, a really charming variety, free and effective. Greece, &c.

I. S. GIBREXIANA is a much dwarfier plant than the above, with smaller heads of white flowers, and a very useful rock plant. It flowers from April to June, and is a native of the Tyrenes, &c.

I. TENOREANA.—A common species in Italy, Spain, and Portugal, and known in some gardens under the name of *I. petrea*. It differs from all the other species excepting *gibraltarica* in the colour of its flowers, which it produces in profusion throughout the summer months. Like *I. gibraltarica*, it is not to be depended upon as a perfectly hardy plant, and when left out some little protection should be given to it. In a well-sheltered nook and in free well-drained soil it does well in the south, where its mass of purple flowers is always welcome, but in any case it can be easily treated as a biennial or even as an annual by striking cuttings in late summer and planting out in spring. It is well worth the trouble and is really effective when well grown. D.

4892.—**Treatment of Dianthus.**—They are all forms of *Dianthus sinensis*, and form a very charming group of flowers. I saw a bed of them in the Zoological Gardens this year which was quite a picture of colour, varying from white to crimson, through many intermediate shades. One can get a host of named kinds, and also mixed. The *Bride* is snowy white, with dark centre, and *Purple King* deep-crimson; but you may obtain a good selection of your own by saving seed of the best forms. The seed should be sown early in the year in pots under glass and placed in moderate heat. Pot on, and gradually harden them off to put out in May. They soon begin to bloom, and maintain a succession through the summer. Another way is to sow out-of-doors in August, and the plants will be stronger and more compact than those raised later.—C. T.

4900.—**Ribbon border.**—I had hoped that the taste for ribbon borders had quite died out. I have grown and turned out thousands of plants into ribbon borders, but though bright enough in its way it did not yield satisfaction for the enormous amount of labour required. The following plants will afford contrast—Back row *White Dahlia*, *White Bedder*. Second row *Saxa patens* and *Calceolaria amplexicaulis*

mixed. Third row: *Scarlet "Geranium" Master Vesuvius*. Fourth row: *Pink "Geranium" Mrs. Miles*. Fifth row: *Variegated "Geranium" Flower of Spring*. Sixth row: *Iresine brilliantissima*. Seventh row: *Golden Feather* or *Crystal Palace Gem "Geraniums"*. Eighth row: *Lobelia Crystal Palace compacta*. A border 7 ft wide will require right rows of plants.—E. H.

Your border is too wide for a ribbon border, which signifies rather a narrow strip wherein Alternantheras, bedding Lobelias, and similar things are arranged. Of course, you can fill it with Pelargoniums and the usual run of bedders, but nothing in this way will succeed under the shade of trees. Such a border affords splendid scope for getting together a really first-rate display of hardy flowers, such as Achilleas, Adonis vernalis (spring-flowering), Alstromeria aurea (summer), a free-blooming plant, Anemone japonica alba (autumn), Hepaticas (spring), Michaelmas Daisies in variety (autumn), Campanula persicifolia (summer), Coreopsis lanceolata (the same season of flowering), also Delphiniums, the Fraxinella, Erigeron speciosum, Sea Hollies for the drier, summer spots, Galega officinalis alba (the White Goat's Rue), Irises in rich variety, Gypsophila paniculata, Day Lilies, White Lujine, Lychnis Haageana (flowers of various colours), Lythrum salicaria roseum, Oriental Poppies (splendid in bold masses), (Anothera frutescens, Rulbeckia speciosa, Sedum spectabile (autumn), and a host of beautiful bulbs for spring—Anemaris, Daffodils, Tulips, Lilies (summer), Squills, Hyacinthus candidus (August), Crocuses, and Fritillarias. I hope you won't make a blushing-out affair of it. In the shadier spots you can get Solomon's Seal in perfection.—C. T.

THE HEMP-PLANT (CANNABIS SATIVA).

The Hemp-plant, a tall and graceful member of the Nettle family, is generally believed to be a native of Asia, although cultivated for centuries nearly all over Europe and also in Africa. It is in northern climes that its fibrous qualities or bast tissues are best developed; but



Hemp (*Cannabis sativa*).

in India it is largely grown for its resinous narcotic products, such as Gunjah, Bhang, or Hashish. The Hemp-plant is diocious, a fact long known to agriculturists who have grown it as a fibre-yielding crop. Thus Threlkeld in 1727 especially tells us that the more attentive husbandmen observe that, in a fat soil you have more male plants of Hemp, and in a lean soil

more of the male. The use of Hemp-seed in the fattening of poultry is not so well known as it deserves. It is a matter of history that Queen Elizabeth used a milk-like emulsion of Hemp-seed, and so escaped the markings of small-pox, and the oil of the seed is a specific for burns. In the garden, however, we are mainly concerned with Hemp as an ornamental plant, of which there is a giant form, but even the ordinary attains a height of from 5 feet to 10 feet in good rich soil. As shown in the illustration on p. 514, it is a plant of elegant habit, and a good group of it serves admirably as a background for more showy flowers, while its light feathery growth contrasts well with Castor-oil plants, or with the stiff-leaved Yuccas and Dragon-trees, Arahis, or Ficus during the summer months as used in the open air. Hemp is a robust annual plant, very easily raised from seed. Sown in a gentle bottom-heat, strong young plants may be had for planting out about the middle of May, and as the plant grows very rapidly, it is peculiarly effective and distinct from most other annuals commonly met with in the open-air garden. The engraving also well illustrates the grace and beauty of a good-habitual plant as well placed near a suitable background of shrubs, instead of being mixed with other things. B.

4884. — *Ostrowskya magnifica*. — Almost any soil and situation will suit this great Oriental Bell-flower, but it prefers a deep sandy loam. It is a striking plant, and must have good culture to bring it to full perfection. Its long fleshy tuberous roots descend into the ground for quite 2 feet in depth, and this fact indicates the necessity of having a soil that has been deeply worked for growing this plant. The soil should, therefore be broken up to quite this depth, and if it needs manure, some that is well decayed may be incorporated. Its long fleshy roots are very much like those of that charming though little-grown biennial *Mischocixia campanuloides*. When planting, the roots need to be carefully handled, as they are decidedly brittle and easily broken. They may then be left alone, as though commencing to grow early in spring, the plant is absolutely hardy and does not need the slightest protection. It is a comparatively new plant, but is now easily obtainable, as it seeds freely. Seeds can be bought, but those who raise their own plants will have to wait two or three years before they are rewarded with flowers. — A. H.

— I don't think this at one time promising plant is of great garden value. Its flowers when in full beauty are very handsome, but they are never to be depended upon. The best species I have seen were those that were shown a few years ago, but since then I have never seen it well grown. It appears to be like the New Zealand Forget-me-not (*Myosotidium mobile*), described in GARDENING a few weeks ago — pleasing enough to look at, but terribly hard to grow. — C. T.

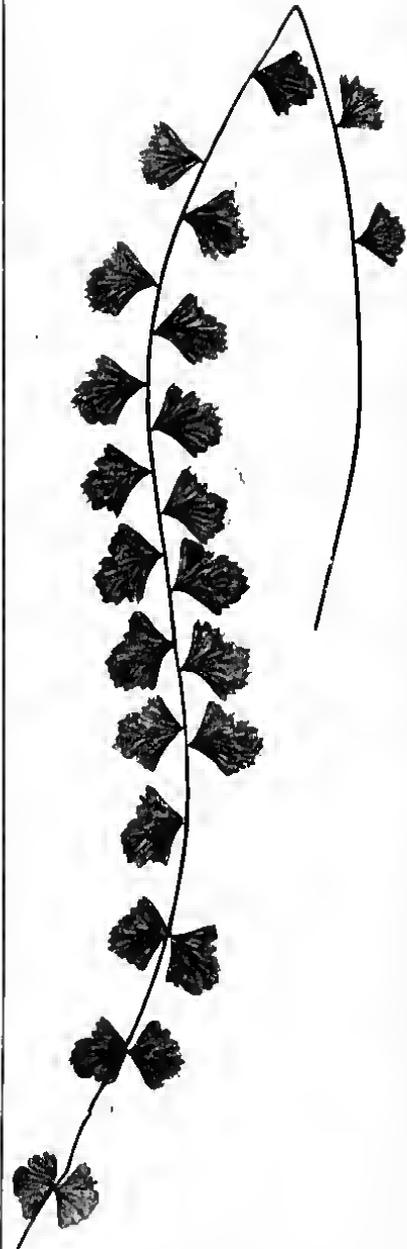
4881. — *Plantains, &c., on a lawn*. — There is no better way than digging them out. It is a tiresome business, but if a good boy can be captured a moderate-sized lawn need not cost much. In very bad cases it may be as cheap to cut up the turf, dig over the ground and pick out the roots of the weeds, and then weed the turf and lay it down. Roots of Dandelions are difficult to get up, as they descend so deep in the earth. Lawns are more ready than usual this autumn, especially where much burnt up in summer. The Grass itself and the weeds took possession. — L. H.

4878. — *Outdoor plants*. — All spring and summer-flowering subjects of a thoroughly hardy nature ought to — and, indeed, must be — planted in the autumn if they are to flower to any extent next season. Those of a comparatively tender or delicate nature, such as *Peutemous*, *Lilastrum*, and others had, however, better be left until March or April, especially where the soil is of a heavy or damp description. *Chrysanthema*, *Mischocixia*, *Daisies*, *Antennaria*, *Phloxes*, and other late-flowering plants are also best removed in the spring, just as the fresh growth is commencing. But, as a general rule, autumn planting is decidedly preferable for the majority of this class, particularly where the soil is fairly light and well-drained. — B. C. R.

FERNS.

SMALL BASKET FERNS.

I AM asked by "C. P." and others to name about a dozen small Basket Ferns that will succeed and make handsome specimens in a stove, together with some hints as to their management. The baskets must be well finished, and the soil in them must be solid and firm. The plants must never be allowed to become dry at the roots, the



A good Basket Fern (*Asplenium filifolium*).

heat must never fall below 60 degs., and there should always be a slight moisture arising from below. This will allow of a neat growth and prevent the pinnae of the older fronds from becoming browned and disfigured. The baskets may be of galvanized wire, and the soil should be composed of good light turfy loam and fibrous peat in about equal parts, the whole made sandy. The drainage I should advise to consist of charcoal, because of its lightness. This should be covered with a layer of Sphagnum Moss. The varieties I should recommend are as follows: —

GYMNOGRAMMA GLORIOSA is very handsome when grown as a pot specimen, but when seen as a basket-plant it is far better. The fronds, which are very finely cut, are of a light-green, sowing a little white farinose powder at the base of the stem.

ADIANTUM DOLABRIFORME. — A plant with thin dark-brown or black stems, which throw out young plants from the ends of the fronds. The pinnae are entire and somewhat in the form of *A. lunulatum*. This plant is superior to *lunulatum*, inasmuch as its fronds remain green throughout the year.

LUZIOLEPIS FILOSELLOIDES. — This makes two kinds of fronds; both are entire, the fertile ones being linear, pale-green on the upper side, below furnished with large reddish-brown sori; the sterile ones much broader, but, like them, pale-soft-green in colour.

DRYINARIA MUSEIFOLIA. — This is a somewhat larger grower than the other kinds, with entire fronds, which are so exquisitely beautiful in their venation, that it must perforce find a place. The fronds are pale-green with dark-green veins.

ASPLENIUM LABELLIFOLIUM (see cut). — Although this plant is a native of Australia, it will be found to grow well in the stove. It has neat little lobeliate fronds, which are dark-green and the streaks of sori on the under side render it very handsome.

NEPHROLEPS TRICHOMANOIDES. — This plant makes pendent fronds which are each from 1 foot to 18 inches long. The pinnae are very deep-green on the upper side, below covered with white scales, and have a continuous row of jet-black sori round the margin.

PLEKOPETIS STIGMATICA depends for its beauty upon its exquisite venation, which is much added to when fertile.

DAVALIA PYRMAI. — A charming plant, making stout rhizomes densely clothed with large silvery scales and deep-green fronds, which are very thick and fleshy.

GONIOPTERIS GRACILIS. — A Fern with pendent fronds some 18 inches long, the pinnae being of a rich deep-green.

DRYINARIANUM FILOSELLOIDES. — A singular little Fern from Japan and the East Indies, which is well adapted for this particular purpose. Its fronds are of two kinds, the fertile ones long and narrow.

HYPOLEPIS DISTANS. — The fronds of this are from 6 inches to 1 foot long. They are finely divided and deep-green in colour. J. J.

DIPLAZIUM.

This is a very beautiful family of Ferns, which a reader signing himself "C. Wickie" inquires about. I do not make any doubt but the various kinds of which he sends specimens are all of them species of *Diplazium*, but then they are so poor, and the fructification (when present) is so old and worn that it is quite a task to decipher them correctly, and I would fain take the second part of his letter in hand in the first place and tell him something of these Ferns, and name a few that are worthy of a place in every collection of stove Ferns. They for the most part are large branching plants similar to the *Aspleniums*; indeed, they differ but very slightly. They begin to fruit when quite young, and these fronds differ so widely from the fronds upon the same plant when mature that the names get quite confusing; then another cause is through their being large growing plants, and perhaps the fronds have only been dried in halves, so that their natural form is quite hidden. They are Ferns that thrive well if planted out in the stove fernery. They like an abundant supply of water during the summer months, therefore they require ample root drainage in order to carry it away quickly, and during the dull months of winter it must be given more judiciously. The following kinds will be found most distinct and attractive. More might be added, but these will be found quite enough for most purposes. *Diplazium arborescens*, *D. brevitorum*, *D. costale*, *D. celtidifolium*, *D. coarctatum*, *D. Francoeni*, *D. grandifolium*, *D. juglandifolium*, *D. lanecum*, *D. plantagineum*, *D. Thwaitesii*, *D. zeylanicum*. J. J.

Original from
4890. — *Ferns not thriving*. — The past summer has been very trying to Ferns, unless carefully and frequently watered, shaded, etc.,

CHRYSANTHEMUMS.

SEASONABLE NOTES.

PREPARING PLANTS FOR CUTTINGS. — No sooner have the blooms faded upon the plants than a start must be made for next year's display. The preparation of the plants for giving a supply of sturdy cuttings is an important detail in culture too often neglected by the amateur, I fear. If the cuttings are not sturdy and clean, I fail to see how a proper foundation is to be laid to ensure future success. Some varieties are notably shy in producing cuttings at all, and especially the right kind. Those most desirable push through the soil a few inches away from the stem, for the reason that the growth is not inclined to run prematurely to the production of flower buds, as in the case of those growths coming direct from the stem. Still, where the variety is scarce, it is better to have stem cuttings as none at all. The objection to stem cuttings is that they, as previously stated, are apt to form buds instead of growth. No difficulty would be experienced in striking these banded cuttings, but the chances are that before they had grown beyond an inch or two, other bloom buds would form instead of growth shoots. The proper way to manage the plants that have flowered that are known to be shy producers of cuttings, is to cut them down to within 2 feet of the soil. Those that throw up freely from the base, like the "Queen" family, for instance, should be cut down to within a few inches of the soil. Place the pots containing the old roots or stools in any end-hous, sash-frame, or at the foot of a south wall, providing the frost is kept from them. Ainery or Peach-house at rest affords a good situation where plenty of light is available consequent upon the leaves having fallen from the fruit-trees. Place them as near to the glass as possible to induce a stocky growth. Cold frames answer very well, but there is the trouble of covering them in the case of frost, the young

growths being tender at this stage, consequent of their having been gnawed a long way from the glass prior to cutting down. In the case of those varieties that have cuttings several inches long at cutting-down time, if these new growths are left by the time the cuttings are required, they will have become drawn up weakly and rendered useless as cuttings. It is better in such cases then to remove the tallest at once, allowing more space for those coming through the soil at the time. A better class of cutting is obtained when required by this means. In the case of reputed shy producers of cuttings means must be taken to induce them to grow more freely. Examine the drainage to make sure the plants are not waterlogged, and remove any manure from the surface used for top-dressing, if the roots have not run into it. Replace the manure with loam and leaf-mould in equal quantities, adding sand freely. Cover the roots with half an inch of this compost and avoid anything like keeping the roots wet. With the plant cut off and no growth at the base, but little water will be required. It is wise to keep such plants on the dry side at the root for a time until a better action is apparent. Syringing the stems during bright weather is a means of encouraging new growth. Those starting freely should have all the air available to ensure a robust growth. Those that are sluggish in this respect would be all the better for a gentle bottom-heat, if available, or be placed at the warmest end of the house. Greenfly occasionally attacks the joints of the young shoots, and should be got rid of quickly for fear of its crippling the young leaves, thus causing a check to the free growth. Where fumigating with Tobacco-smoke is not practicable the affected points should be dusted with Tobacco-powder, vigorously syringing the points the next day with clean water to remove the cuttings of both powder and fly.

E. MOYLENA.

4891.—**Chrysanthemum M. G. Grunerwald.**—There should be not the slightest difficulty in getting this variety. Any good Chrysanthemum nurseryman, such as Mr. Davis, of Lilford Road Nurseries, Camberwell, or Mr. Jones, of Hilder Green-lane, Lougham, will supply you. It is a closely early variety, probably a seedling from Mme. Desgrange, the

But very likely it will grow all the more strongly next season, especially if the plant can have a little extra warmth when starting into growth, with a nice moist atmosphere. Good fibrous loam, mixed with a third of leaf-mould, some sand, and a small quantity of "ballast," varying in size from a Pea to a Hazel-Nut, will grow these Ferns well. —B. C. R.

—Pterises are so easy to grow that I never care to keep old plants, as young specimens are more effective. In the present case, if it is intended to restore the old plant, keep it rather dry till February or March, then shake away most of the old soil, and divide the plant into two or three, and pot in rather small pots, shifting on as more space is required. All this family will grow well in loam and leaf-mould in equal parts, with some sharp sand to keep the soil from getting too close, the sand to be used liberally if the loam is heavy, and less if the loam is sandy. The loam found round London is the best for Ferns. —E. H.

—Evidently the plant requires repotting. It has thoroughly exhausted the soil, but wait until early March, when take the plant out, divide it, and use for a soil a mixture of loam and peat, with sufficient sharp silver-sand to keep the compost fairly open. Provide ample drainage, and place in moderate heat to encourage quick formation of roots. Water very carefully for a few weeks. If newly potted things get too much they rarely succeed. —C. T.

ORCHIDS.

ODONTOGLOSSUM BLANDUM.

I AM in receipt of a spray of flowers for a name from the Leeds Orchid Company, which certainly does appear to be of this species; but it is too far gone for accurate recognition; consequently, I am compelled to simply guess at the name, which is a thing I do not like doing, because it may lead to error, but I do think this Orchid is *O. blandum*. This plant was first found by the collector for Messrs. Low and Co., now some thirty years ago, but the assignment went home to that firm were all dead, and so from time to time the plants sent over here by numerous collectors all arrived in a similar condition, and so this state of things continued; thousands upon thousands of these plants were sent home, but all arrived in a putrid condition. This caused a severe rebuke from Reichenbach and others, and, indeed, we were told that the Orchid was becoming extremely rare, and that it appeared to be soon becoming an extinct plant, and that fears were entertained that we should never see it in our collections in anything like the beauty exhibited in its native home. Now what was the cause of the sad destruction of the plant, and why did it come home in such a bad condition? Well, this was the fact—this *Odontoglossum* grows naturally in a very wet climate, and the collecting it in such great quantities, and packing them closely in boxes, only led to their decomposition on the journey home, and it was not until greater care was exercised in their transport that we began to see it at rare intervals in our collections. It remained scarce for some time, but now I see it is more plentiful, and I find it about in many collections where *Odontoglossums* are well done. It is a plant that was at first thought to require a very cool atmosphere; but I have found it to thrive well in the same temperature as the *O. Alexandrine* in the summer-time; but I like to remove it to a house just a few degrees warmer in our winter months, but it must always have a good supply of water, and also be kept in an atmosphere well charged with moisture. This species is found in New Grenada, growing at from 5,500 feet to 6,600 feet altitude, so that it does not reach so high as *O. Alexandrine*, this plant growing up to 8,400 feet elevation; consequently, *O. blandum* thrives better in a little extra warmth in the coolest months of the year. It is said to be constantly moist, and to be nearly perpetually in bloom, so that we have something yet to learn in the cultivation of this beautiful sweet-scented plant. It, like all the Orchids, is a lover of a free circulation of air, and by a judicious arrangement this can be accomplished in a much better style than the Belgians grow their Orchids on open stages, and which they see to claim so much credit for, by putting the air taken into the houses below the pipes and

some ventilating caps on the roof, and if these are kept constantly open a delightful fresh atmosphere is maintained. I should like the Leeds Orchid Company to spare me one more flower from their plant in order that I may be sure of the name. I do not require more, and perhaps it would be as well if they dried it before sending. Now, a few more words in respect to its management. I have before stated the temperature I have found it to thrive in best. It is a plant that enjoys shade, so I like to keep it near the glass in a north-house, where it does not get any sunshine. The pot should be well drained, and the soil consist of good brown peat-fibre, and fresh and sweet Sphagnum Moss, and great care should be exercised in keeping any sour or stale stuff lying about it. MATT. BRAMBLE.

ODONTOGLOSSUM CERVANTESI.

A FINE spike of this beautiful old plant bearing five large flowers comes to hand from "James Brylen," asking if it is not *O. Rossi*? To which I must answer it is not, *O. Rossi* being a larger and bolder flower, its lip is longer, and the colour at the base of the sepals and petals is not displayed in such concentric rings as in the case of *Cervantesi* flower. This is one of the oldest species of *Odontoglossums* known, but yet it has not been grown as a living plant in our gardens more than about fifty years, having been first sent home here from the neighbourhood of Oaxaca, in Mexico, from whence it is found southwards into the neighbouring country of Guatemala, and the plants that come from the latter country thrive better with a little more heat than the same species coming from Mexico. It varies somewhat in colour, but the best named varieties which I know are *decorum roseum* and *punctatissimum*. The first-named plant has the lip of the flower deeply lobed and profusely streaked with purple; the sepals and petals are broader, and dotted with purple. This is a beautiful form, well deserving every attention, as also is the variety *roseum*, which has the colour of the sepals and petals of a soft rosy-purple, whilst in the variety *punctatissimum* the whole of the flower is spotted more or less with reddish-purple. In the flowers before me from "J. B.," the colour is of a uniform pure white, having a broad concentric ring at the base of the sepal and petals of reddish-brown spots. Now I suppose this plant flowering at the present time is caused by the wonderful season we have passed through, for I should imagine from the strength of the spike it had produced flowers before in the spring of the year (?) which more frequently is the time of its flowering. But, never mind; I have heard people say frequently that fruits and flowers are always prettier and more valued out of season, and I am sure that is so then *O. Cervantesi* will not lack admirers. This, as well as many others of the small-growing *Odontoglossums*, succeed best planted in shallow earthenware hanging pans, which should be well drained, and the plants should sit on a little mound of soil, which may consist of about half and half chopped Sphagnum Moss and peat-fibre, the whole to be pressed down firmly. The present species and its varieties enjoy good exposure to the light, therefore I used to hang them up near the glass in a north house; here they could remain all the day without shade, and in such positions I always found them to increase and to grow well and flower profusely, and to all of my readers I say—"Go thou and do likewise." MATT. BRAMBLE.

4886.—**Primula obconica.**—Handling these plants does, I believe, irritate the skin of those predisposed to skin diseases, but I imagine the number of these must be few. I have grown them for years, and find them most useful, both in the greenhouse and in the room, or for cutting, and I have never yet noticed a case of so-called poisoning by coming into contact with either plants or flowers. —E. H.

4877 and 4885.—**Flowers beneath trees.**—Try *Gaillheria Shallon*. It grows and spreads most rapidly under trees and shrubs, and is a handsome evergreen plant. Any soil but chalk or limestone suits it. —A. B.

4893.—**Nitrate of soda on a lawn.**—This must have been carelessly used, probably also in larger quantities than is necessary. About 5 lb. or 6 lb. to the square rod would be a heavy dressing. Though the Grass may be killed brown it is not likely to be killed. The roots will be damaged beyond use, and be decayed. No harm is done unless the nitrate has been rashly used. —E. H.

flowers of an exquisite rose shade. It is exceptionally free, and worth growing both outdoors and under glass.—C. T.

— This fine variety can be obtained from Mr. H. J. Jones, of Hither-green, Lewistown, who holds a large stock of this and others of the same class.—B. G. R.

EARLY AND LATE CHRYSANTHEMUMS.

If anyone is going in for Chrysanthemum culture with an idea of making a profit of the blooms he must look well after the flowers for the two extremes of the season—viz., the very early and the very late ones; not that they are better, or even so good, as the mid-season ones, but simply from the fact that there are so many of the mid-season ones grown for exhibition, decoration, &c., that everyone seems surfeited with Chrysanthemums, and no one appears to think of buying them. It is, however, quite different with the early and late sorts. This year, owing to the great heat and drought, there was a great scarcity of white flowers in September, and the early White Chrysanthemums like Lady Fitzwygram, Mme. Desgrange, &c., came in most opportunely; but mid-season sorts are so very numerous that one requires considerable forethought to time them to come in when they can be sold. But not so with the very late kinds, which are with us now plumping up fine buds, and any quantity can be sold at Christmas, and, as a rule, at very much more remunerative prices than can be made during November. It is rather singular that with almost all other flowers a month in advance of their usual season of flowering, the Chrysanthemum shows very little difference, and our late kinds still out-of-doors are only in the bud state. Similarity is with me the latest of all sorts, either new or old, one of the purest whites, and of the best and dwarfest habit of growth. There have been numerous additions to this useful class of recent years.

J. G., Gosport.

DEEP CULTIVATION.

It would be difficult to find a stronger argument in favour of deep cultivation than that afforded by the appearance of crops growing side by side during the summer drought, the one on deeply cultivated soil, and the other on such as has been merely dug over one spit deep; the one would be drooping, while the other would be vigorous and apparently enjoying the heat and drought, for the simple reason that the roots could penetrate in the deeply cultivated soil and find abundant moisture long after those growing in the shallow cultivated soils had exhausted their supplies; and this is the sole reason why allotment holders get so much heavier crops than the very same kind of soil yields when only ploughed over. And I would strongly insist all that have vacant land, which is not required for cropping until the spring, to deeply trench as much of it as possible; any kind of garden refuse can be utilised for burying at the bottom of the trenches, and no better use of cleaning one's land that has been allowed to get into a wretched state can be adopted than by trowling. Green crops are especially beneficial to hux in the soil, and old Strawberry beds are especially liable after many autumn rains to get weedy; but if the whole mass is turned in two spits deeps there will be no fear but that any crop put on next season will show good results, and after rapid cropping and frequent manuring, trenching is absolutely necessary to restore land to its fullest capabilities.

J. G., Hants.

HOUSE & WINDOW GARDENING.

CUT-FLOWERS IN THE HOUSE.

WINTER NOSEGAYS.

Our worst winter season gives us from a fairly stored outdoor garden much that a tasteful person can make beautiful use of. A charming bunch of winter flowers can be made up of the small and ordinary Christmas Roses, the brownish leaves of Ivy, a truss of Pyreanthin, a deep fringe of the large-leaved Saxifrage, and a few bits of the small silvery Eranthis and Laurustinus—all open garden materials easily got. In mild sea-coast districts, too, Anemones and other flowers that open during mild seasons are available, and if loosely arranged in a vase, as shown in the annexed illustration, they form a charming ornament to any room.—B.

— "E. Cooper" omits to say what arrangements he proposes to make for warmth in winter, without which cut-flowers for the house are not easy to procure from this time until spring arrives. Chrysanthemums can be made to yield plenty of bloom, if any sort of shelter, such as a south window, or a glass

taller old-fashioned kind, Brompton Stocks, Single Pyrethrum (excellent for decorative work throughout the summer), Malmaison Lilies, Irises (both English and foreign), White Pinks (Mrs. Shikins being the finest kind to grow), and Iceland Poppies (most useful with their soft yellow tints). Roses, Carnations, and the host of summer blossoms will supply June and July, with plenty of Mignonette, Sweet Peas, Blue Cornflowers, Marguerites (both white, pink, and yellow), Gladioli, and Lilies in variety. August is the month for Asters and Dahlias, both of which should be grown in variety for cut-flowers, the

SINGLE AND CYCLOS DALLIAS being the best in cases. There should be a continuous supply of Shirley Poppies from early spring until frost begins, and this is easily secured by sowing seed in autumn as well as in spring, with successive leads to be sown in May, June, and at the end of July. These last will bring a blaze of colour into the garden during September and October, and be most useful for cutting when other things begin to fail. The writer has bouquets of them in the drawing-room at this date (November 4th), contrasting most charmingly with Pure-white Chrysanthemums from seed sown late in July. These Poppies need to be picked

early in the day and when only half open; their delicate beauty will then be preserved in a cut state for several days, and few flowers are so light and elegant for table decoration, while their tints are singularly varied and pure. Japanese Anemones (both pink and white) are useful in September, especially Honore Jobert (pure white, which, when well established in a shady spot, brings a great quantity of pure ivory blossoms, exquisite for decoration). The early Chrysanthemums (Madame Desgrange, G. Wernig, La Vierge, &c.) can now be had from old plants, divided in spring and put into a sheltered corner with rich soil, and these with Dahlias, Pyrethrum, Asters, &c., will supply plenty of cut-flowers. After the middle of October Nicotiana glauca become valuable for cutting, and the ordinary run of Chrysanthemums, Pansies, and others, give a wide range of colour for cutting until Christmas, with slight shelter. In growing flowers for decorative purposes it should not be forgotten that suitable greenery is much needed to display them, and a few suggestions as to this may not be out of place. English Ferns of many kinds are very valuable for this purpose, especially Asplenium Adnigrum (nigrum) for small vases, as it is evergreen, and therefore available in winter, with Hart's-tongue (Scolopendrium vulgare), and the Common Polypody (Polypodium vulgare), which, however, needs damp wood in the soil to do well, as it grows on the branches of trees. An excellent substitute for Maiden-hair Fern may be had in the Common Yellow Fumitory (Corydalis lutea), with sprigs of delicate greenery, very Fern-like in effect, which last well in water, however. Even the more Common Purple Fumitory (Fumaria officinalis) is not to be despised in floral arrangements, the flowers being removed from the light, crowd-like sprays of foliage before using it. Plenty of ornamental grasses, too, should be grown, with a few good ornamental shrubs from which larger greenery may be cut when needed. Aucuba japonica, Berberis (Mahonia) Aquifolium, and Laurustinus are useful for the background of large vases with froths of hardy flowers in the country can often find lovely sprays



OUR READERS' ILLUSTRATIONS: A bouquet of winter flowers. Engraved for GARDENING ILLUSTRATED from a photograph sent by Mr. J. McWalters, Antrim, Ireland.

pond even (without heat) be available, lasting from October to Christmas, if both early and late kinds are grown. Without shelter they cannot be reckoned on after the first severe frost sets in. The only hardy blooms which can then be found in a garden are those of the Laurustinus, which is now in full bloom, and will continue to blossom throughout the winter in mild weather. Cava Violets, too, if grown in a sheltered spot under a wall, will bring many blossoms before Christmas, and the Yellow Jasmine (Jasminum nudiflorum) and Christmas Roses will also open in December after a mild autumn. January is usually quite flowerless outside; but in February the first bulbs appear, Snowdrops being better than Crocuses for cutting. March will bring plenty of Wallflowers (in a sheltered corner where cold winds do not blow), with Yellow Anemone, early Van Thed Tulips, Erica carnea, Anemones, Primroses in warm corners, and White Abyssians. In April the earliest open-air Dahlias (Narcissus) open, with Forget-me-not (Myosotis dissitiflora), Wallflowers in the open, Hyacinths, alpine Auriculas, and White Violets; the Devonshire Violet being one of the best of these. "May is the time of the year when the sweetest scented blossoms, Lily of the Valley, and with Narcissus in great variety, Tulips of the

ing until Christmas, with slight shelter. In growing flowers for decorative purposes it should not be forgotten that suitable greenery is much needed to display them, and a few suggestions as to this may not be out of place. English Ferns of many kinds are very valuable for this purpose, especially Asplenium Adnigrum (nigrum) for small vases, as it is evergreen, and therefore available in winter, with Hart's-tongue (Scolopendrium vulgare), and the Common Polypody (Polypodium vulgare), which, however, needs damp wood in the soil to do well, as it grows on the branches of trees. An excellent substitute for Maiden-hair Fern may be had in the Common Yellow Fumitory (Corydalis lutea), with sprigs of delicate greenery, very Fern-like in effect, which last well in water, however. Even the more Common Purple Fumitory (Fumaria officinalis) is not to be despised in floral arrangements, the flowers being removed from the light, crowd-like sprays of foliage before using it. Plenty of ornamental grasses, too, should be grown, with a few good ornamental shrubs from which larger greenery may be cut when needed. Aucuba japonica, Berberis (Mahonia) Aquifolium, and Laurustinus are useful for the background of large vases with froths of hardy flowers in the country can often find lovely sprays

of greenery with plenty of lily-like Grass and light berries for autumn decoration. The demand for these things is now so great that they may be bought in most good town markets; but if they have to be grown the various Barberries, *Skimmias*, *Amelans*, *Hollies*, the Snowberry (*Symphoricarpos*), the Winter Cherry (*Physalis*), *Cotonegus Pyreanthi*, and *Cotoneaster micranthylla* will supply excellent substitutes for flowers during the colder months of the year. —L. R.

1854. — **Malden-hair Ferns.** — These Ferns will not keep their foliage in winter in an unheated greenhouse, and would be sure to become shabby under the change from a warm room to a cold greenhouse at this time of year. If "Perseverance" means that they get no water from the time they are brought in until the week's end, this is probably another cause of failure of foliage. Ferns should never be very dry, especially when in a dry, warm atmosphere, such as that of a sitting-room, although at the same time they should not be soaked with water when the surface soil is damp. They also object to a draught, and should be placed in a sheltered corner, not too near the fire, when needed for decoration in a room. But they would be far better out of the room at night, an amount of the dust and draught which they must go through in the early morning, when the housemaid attends to the room. Delicate Ferns suffer greatly from the icy blasts which then go through the place for its necessary airing, with accompanying dust. The best plan is to remove the plants at night (before the lights are lit) either into a warmed greenhouse, where they can stand on a damp floor, or else into a bathroom with hot-water pipes, or a warm bedroom, covering them with a newspaper shelter, easily made with wire, paste, and double newspapers, of a size and shape to suit the plants. In a dry atmosphere they do best if a large tray or flat bath be laid on the floor for them at night, with a little water in it, and the pots are placed on inverted saucers, so as to stand over the water, but not with their roots in it; a paper cover placed over this will keep in the moist air, and save them from dust, too. Ferns feed much through their fronds, and never flourish where there is no moisture in the air, but they can be kept in health in this way, and may be used for decoration during the afternoon, if removed before the drying effects of the lamps or gas do them injury at night. —L. R.

TREES AND SHRUBS.

4885 and 4886. — **A Virginian Creeper.** I do not know if this is obtainable in England, but I see the name is in the "Tree and Shrub Catalogue" of Messrs. J. Veitch and Sons, Chelsea, and possibly they may have it. I do not know *A. japonica* Huggi, but as *A. japonica* is synonymous with *A. tricuspidata*, the kind popularly called Veitchi, I should say that it was different from the one I have under the name of muralis. "M. C." may plant it as soon as ever he can get it anywhere during winter or spring, as it is quite hardy. The few that I had planted on walls have been so beautiful that many more which were planted to climb trees but did not make much progress there have been taken up and planted against the wall. In case "M. C." and "H. P. H." cannot obtain the kind in England they will be able to get it from the same source, as our plants came from the great nurseries of Tramon Brothers, Orleans, France. —A. H.

I see that the variety muralis is advertised in Messrs. Veitch's catalogue. Their address is King's-road, Chelsea. This is the only nurseryman that, as far as I can see, embraces it in their selection of climbers. This is a good time to plant, and onwards to the end of winter. It is perfectly hardy and vigorous, but give the plants a good start by letting them have fairly good soil. —C. T.

1901. **Clipping Conifers.** — I think it is a mistake to clip Conifers at all. They look best when allowed to grow naturally. Especially is this true of *Cypripedium macrocarpa*. But if Conifers must be clipped, the best season is in May, and then the young growth will escape the spring frosts. —E. H.

Spring would be the best time; but why clip and hack the shrubs about as you propose to do? You do not see the natural beauty of the shrubs which you are to improve, by pruning. —C.

FRUIT.

APPLES FOR SMALL GARDENS.

The time is more and more at hand for making selections of fruit trees for various purposes for planting during the coming autumn. Although it is yet too early to think of planting the trees, it is not too soon to order them. Nurserymen, as a rule, execute their orders in rotation, therefore those that order early stand a good chance of getting the best trees, as I do not suppose the worst trees are sent out first. There is now such a large number of varieties to choose from that there is not the slightest excuse for having those sorts that are worthless or even of moderate quality. As much space is required to



Apple "Red Calville."

cultivate an inferior variety, and very often more, because worthless sorts of Apples are frequently good growers. Where but a few trees can be accommodated they should be of the best kind, not only as to their individual quality when cooked or in a dessert state, but their merits as croppers ought to be taken into consideration. I have here growing over one hundred varieties, therefore can speak with a little authority on the subject. There are some varieties of Apples that will not succeed in certain kinds of soils, no matter how the planting is done, which renders the selection of sorts more difficult for universal acceptance. However, a safe plan to follow is this: Select those kinds that will succeed in congenial soil, and rest assured that those sorts will flourish in soil that is generally regarded as satisfactory for Apple-culture. In making these remarks I ought, perhaps, to name the two kinds of soil I take exception to. In the first place soil that is insisted to Apple culture



Apple "White Calville."

is that which is heavy in character, but not absolutely clay, yet retentive of moisture, and consequently cold during the winter and spring, and liable to come canker very quickly where there is the slightest disposition to this evil in Apple culture. Canker, in my opinion, is mainly caused by the frost affecting the non-ripened shoots of the previous year's growth, thus injuring the tender bark as a commencement of the trouble. Without experience of soil it is a most difficult as well as a risky thing to make a selection of varieties, but by following the practice advised of planting those sorts that flourish in congenial soil, but few mistakes are made. It is very annoying after spending time and money for half-a-dozen years

to find then that certain sorts are useless for a particular site. Soil favourable to Apple culture is that which is generally termed heavy loam, meaning soil that is slightly above the medium in point of adhesiveness, or, in plain words, more inclined to clay than sand. I purpose to place the varieties in their order of ripening somewhat, so that intending planters may be better able to select, according to the season they require much or little fruit. Opportunity is then given of reducing or increasing the number of trees of any particular section. Dessert varieties: Irish Peach and Devonshire Quarrenden, August; Lady Sudeley and Worcester Pearmain, September; King of Pippin, October; Cox's Orange Pippin, November; Bannan's Red Reinette, December; Sturmer Pippin, January; Fearn's Pippin, February. Kitchen varieties: Lord Grosvenor and Duchess of Oldenburgh, August; Bellinville and Stirling Castle, September; Frogmore Prolific, Golden Spire, and Warner's King, October; Lane's Prince Albert and New Hawthornden, November; Bismarek, December; Brandley's Seecilling, January; Newtown Wonder, Sandringham, and Alfriston, February; New Northern Freezing, March. In sunny and cold districts Apples are worthy of a place against a wall or even under glass, and good kinds for these purposes would be the Red and White Calville (here figured) Ribston and Cox's Orange Pippin, or any of the Nonpareil type. S. P.

4905. — **Apple and Pears in a greenhouse.** — Yes, with free ventilation both Pears and Apples may be permanently grown and fruited in a cool green or orchard-house with perfect success, though if the trees can be removed to the open air for a few weeks after the fruit has been gathered so much the better. As far as I have seen, the most successful results are obtained, at any rate in dealing with Pears, by planting single cordons along one or both sides of the house, and training the stems on wires 10 inches or 12 inches from the glass. If the house is sufficiently wide, a central bed may be occupied by bush trees of Apples, Peaches, &c., in large pots or tubs, or even planted out. Still, they will do very well as bushes or pyramids in pots or tubs. Two excellent Apples for this purpose would be Cox's Orange Pippin and Lane's Prince Albert, and two fine Pears Knills d'Herst and Doyenne du Comice. — B. C. R.

4903. — **Gooseberry-caterpillar.** — The present is a good time to take away the soil from under the bushes. It should be removed to the depth of 3 inches or more, and fresh earth put in its place. It may interest this correspondent to know that at South Hill Park, only a few miles from where the inquiry was written, the gardener has laid the short Grass from the lawn under the Gooseberry and Currant-bushes in preventative, and I never saw a caterpillar on them. The Grass was used for this purpose from the commencement of the mowing season until the close. Mr. James, the gardener, never claimed for his practice a cure for the destruction of these insects; all he knew was that since he commenced laying down the Grass he had never been troubled with them on bushes so treated. It would appear that there is something in the denying Grass that is unpleasant to the caterpillars if there be any there. We must, however, remember that these insects appear to possess a kind of migratory character, as they are very much in evidence one year and absent the next. — J. C. C.

Now is a good time to prune the bushes, cutting away any weak branches, so giving more space to those that are stronger. Especially thin out the middle of the tree, admitting light, air, and sunshine to that part. Any shoot of last year's growth not required for furnishing the tree in the future with branches should be cut back to one or two eyes at the base. If the trees are beyond eight years old remove 3 inches of the surface soil for about 2 feet from the stem all round, replacing it with fresh. If the trees do not make much growth add decayed vegetable refuse, partly rotted manure in a sixth part, mixing with it some quick-lime. Next February paint the branches entirely over with diluted cow-dung and clay, in about equal parts, worked into the consistency of paint, adding at the time of using the mixture some fat from the

healthy and prolific Tomato-plant growing in well-drained and not too deep border, box, or even pot, demands, especially under the tropical sunshine of the last summer months, is almost incredible, and, indeed, under the circumstances named it would be difficult to afford too much. With reference to the peculiar and apparently unaccountable "flagging" disease, or rather affection (for I am now of opinion that it is not a disease) which has been mentioned more than once in GARDENING, and of which several other instances have come under my notice during the last two or three years, I may say that I have suffered from it rather badly the last two seasons, and believe that I have at last arrived at the cause, which is simply to be found in the quality of the water employed. I meant to have written this on the subject some weeks ago, and, indeed, commenced to do so, but have not had time to finish until now. However, farther experience and observation have developed my then somewhat crude ideas into almost positive certainty, so I trust they will be by so much the more useful. Being here a good many miles from any water-works or mains, where in rain falls for more than two or three weeks at the outside, and the supply of soft water fails, we have to go to the neighbouring ponds, brooks, or springs for the necessary fluid. Ever since I came I have noticed that after having this kind of water for any length of time, the indoor plants of all kinds did not grow as freely as they should and usually do, and after a time assumed a white and starved appearance, but until quite recently I never thought of connecting this fact with the way in which many of the

TOMATO-PLANTS FLAGGED under the influence of a hot sun, and after a time in many cases collapsed entirely. Thinking it might be the fault of the soil, I tried them in earth of all descriptions, both light and heavy, rich and poor; tried keeping them comparatively dry and watering heavily, and also the result of almost all the manures and stimulants extant, but all to no purpose, so at last noticing that whenever a few showers or a thunderstorm enabled us to use rain-water for a time things began to improve in appearance all round, I came to the conclusion that the water, and this alone, was to blame, and this is now proved beyond a doubt. I have since been treating the water with a chemical preparation, with the result that a quantity of fine, slimy, yellow deposit is precipitated from even apparently perfectly clear and pure fluid. This I take to be clay in a finely-divided state (we are on a wide belt of solid clay of the heaviest description), with probably iron in some form as well. In passing through the soil, which acts, of course, as a filter, the water leaves this finely-divided and evidently poisonous matter behind, and it chokes and cripples the roots, with the result already described. A still farther proof is that I never had, or even saw, this affection until this and last year, when of both the spring and early summer were dry, and in 1891, when it rained frequently or constantly throughout, I had in the same house, and under the same conditions, a splendid crop, although the plants were not put out until May, and had no fire-heat whatever. Wherever this affection occurs growers should look to the quality of water employed, and, if possible, get it analysed. I am glad to see that at least some amount of attention is being paid to the quality and flavour of Tomatoes, in which respect the different varieties vary to an extraordinary extent. I have always studied this point carefully, and for some years past have been endeavouring to obtain a Tomato that would combine the prolific and free-setting qualities of the old Large Red with compact and short-jointed habit of growth and superior substance and flavour. Up to the present Perfection is, all things considered, the nearest approach to this happy combination, but then the growth is so very long and strung as to render it unsuitable for low houses or frames, while unless happily circumstanced and skilfully treated it is certainly not the best of setters. Conference is extra dwarf, free, an excellent setter, and of good substance and flavour, but the fruit is rather too small, both for market and home use, to meet the taste of most consumers. A local variety called *Sixes Beauty*, of which I don't know the parentage, is good all round, but not quite up to my standard, and the American variety that I have seen in the

obtain are in my experience more or less useless here, whatever they may be in the climate of the States. Considered from this point of view, many of the most prolific varieties, and notably King Humbert, also known as Chiswick Red, are wretched things, devoid of both substance, weight, and flavour. Challenger (which appears to be very similar to the old Tennis Ball, possibly slightly improved) is but little better. I think that when judging Tomatoes at shows, the adjudicators should cut some of the fruits across, so as to show the substance, or want of it, even if it is not tasted, as in the case of Melons. I may, perhaps, be allowed to add that one or two of my seedlings exhibit an unusual amount of solidity, with very few seeds and a rich, sweet flavour, while the habit is extremely short, and the fairly large fruits freely produced. Of one I have a golden character from a large Jersey grower, to whom I sent a few seeds for trial. Owing to the circumstances described above I had only a limited quantity of fruit, and that was late. Much the finest crop of Tomatoes I saw this year was in a nursery in the south of London (that of Mr. H. J. Jones, of Lewisham), where the plants were a perfect picture, being laden with large fruit of perfect form and finish. Every bloom had set, and each plant, I was told, would produce between 20 lb. and 30 lb. of fruit by the end of the season. The variety chiefly cultivated is an improved form of Perfection.

B. C. R.

ONIONS FOR WINTER USE.

THESE are in great demand in winter with all families, large and small, and therefore must be



Onion "Pear-shaped Spanish."

had in good condition. The great point is to thoroughly ripen and harden the bulbs by full exposure to sun and air after lifting. The weather in September of this year was excellent for that purpose. Where they were taken in roughly to be cleaned on wet days, proceeded with, and finished so far as seems possible, all would be well. Any with thick necks, or that made a second growth, and which seem to be in consequence almost in two parts, should have been put in one side for immediate use, as they will not keep until spring. Others of extra large size may also be placed amongst these, for it is only medium-sized bulbs of good form and great soundness which should be stored away for use in spring and early summer. The common flat White Spanish types, though otherwise excellent, are not such long keepers as Bedfordshire Champion, and a good strain of the Pear-shaped Spanish Onion, such as James' Keeping, which should always be left to the last. I rarely ripe any of my Onions. They look well in that way, but that is all. I find they keep equally well without the trouble of tying if simply laid out in a thick layer on shelves, or on the floor of a dry, cool room or shed. Properly stored Onions do not decay readily, and they are not injured if exposed to a few degrees of the frost if perfectly dry. Mine hardly fail in that way until they begin to grow, which is not until April or thereabouts.

specimens of this were shown last season weighing 30 lb. Golden Ball, fine globe-shaped variety and splendid keeper. Cranston's Excelsior, grand globe-shaped; for weight and shape, combined with keeping qualities, this Onion has no superior. Trebons, a fine large exhibition variety, equally good for autumn or spring sowing. Magnum Bonum, grand distinct variety. Bedfordshire Champion, oval-shaped, and Giant Zittau, both good varieties and splendid keepers. Sow the seed under glass in January. In March prick off to boxes, and in April plant out in land which has been deeply trenched and heavily manured the previous autumn. If you find the grub attack them, as is often the case, sprinkle the bed with coarse salt, which will not only prove beneficial, but also act as a manure to the roots.

—E. J. P.

1893.—Treatment of Rhubarb.—The best treatment for Rhubarb at this season is to touch round the circumference of the roots with good manure, adding a forkful of manure rather longer over the crowns. This covering makes the crowns dry earlier, and it is ready to gather a week or ten days before anything can be had from the unprotected crowns. —E. H.

THE HOLLYHOCK AS A GARDEN FLOWER.

ALMOST every cultivator of the Hollyhock could speak or write about the difficulties he has had to contend with in dealing with this, the most stately of the hardy flowers that adorn the garden in autumn. Some timid amateurs are overcome with the first signs of disease on the plants, and have not energy enough to make anything like a strenuous effort to overcome it. I find a great deal depends upon the weather. The year before last the disease was very troublesome. I had to give a lecture on this flower that year in August, and at the time some of the plants were quite covered with the fungus, many of the leaves being totally destroyed, others far gone, and the entire collection diseased to a great extent. I have grown some of these plants this year, others were added to them, and they have flowered splendidly. Although the disease appeared in the spring, it did not spread after May, and the plants are practically free from it. I made no attempt to destroy the fungus, and yet, owing to what I may fairly term the incidence of the season, a good bloom was obtained, and the plants now seem as if they might be propagated freely for next season's flowering. I have not yet touched the plants; they still remain in the open border, but in October or November they ought to be lifted and planted in flower-pots of a suitable size, or what answers us well, plant them out closely together in an ordinary garden frame, and give them sufficient attention in the winter to prevent the leaves from damping off. I cannot severely winter my Hollyhock plants unless I get them under glass in some way. I find even in frames, with the continual fogs now London, the leaves are constantly dying off, owing to mould getting upon them through their being almost constantly damp. If the plants are putted up and flower-pots placed on shelves near the glass roof of a house from which frost is merely excluded by artificial heat, they are not injured in the least; but here, again, we have to face the readiness with which the plant is attacked by the disease under these somewhat artificial conditions, and again, comes the time of propagation, when the plants, or rather the cuttings, have to be placed in a forcing-house, and the chances are that even if there were no traces of fungus before it will appear now. We cannot help ourselves; the cuttings must be put into heat, and the addition of bottom heat, with a rather close atmosphere, is necessary. We may expect the appearance of the fungus, and I saw a good specific for it is sulphur stirred up in soft-soapy water, about 2 oz. of soft-soap to the gallon of water; too much soft-soap injures the leaves; 4 oz. of sulphur may be used. The sulphur has a tendency to sink rapidly to the bottom of the water, and must be constantly stirred when the leaves are being dipped. Another plan which has been found quite as effectual in removing the parasite is to dress the affected parts with Cundy's fluid, using a soft brush to apply the liquid. When the cuttings are rooted they must be taken out of the hot-bed and be placed on a shelf near the glass in the same house; this causes the leaves to become more crisp, and if the cuttings have been placed in the hot-pots they may be

reotted into 3-inch pots, and when the plants have taken hold firmly of the new potting-soil they may be removed to a much cooler house, and subsequently to a cold frame. The propagation of the plants and preparation for planting out are important parts of their culture, and the point to attend to as of most importance is to keep the leaves clean, free from the fungus, red-spider, and thrips, as it is only by thus caring for the plants that they can be kept steadily growing. Care must also be taken not to allow them to receive any check at the time of their removal from the warm-house to a greenhouse (temperature or from the greenhouse to an ordinary garden frame.

Some cultivators of hardy plants may wonder that it is necessary that so much pains should be taken with a plant comparatively hardy. To this I reply that although the Hollyhock is a much hardier plant than the Dahlia, it cannot be so freely propagated. The cuttings take longer to form roots and growth is slower afterwards, and unless the spring cuttings are propagated as advised, they would not form roots in time to give good flowering plants, or they might not bloom at all. The preparation of the ground is also of much importance, and this should be seen to in the autumn. The Hollyhock is a gross feeder and requires a deeply worked soil with a good dressing of farmyard-manure, and when the ground is trenched up in the autumn the winter weather prepares it for planting in April or early in May. The young Hollyhock plants should have been well inured to the open air before planting them out, and the operation of planting should be performed when the weather is mild and the ground dry. The permanent sticks must also be placed to the plants at the time of planting out; indeed, it is much better to drive the sticks firmly into the ground before planting, and dig out a hole at the front of the sticks into which should be placed some prepared soil, such as is used to pot Pelargoniums, to give the plants a start. The plants must be tied to the sticks as soon as they have grown a little, and it is a good plan to mulch around the roots with a little decayed manure; this keeps the soil moist, preserves a more equable temperature over the roots, and the plants will make a much better growth. As the season advances, dry weather will set in and water at the roots will be needed, but it will also be desirable to syringe well underneath the leaves to keep off red-spider. The first appearance of the fungus is the signal for an attack upon it; if it is taken in time some good may be done, but when it has spread widely over the entire collection of plants, the case is hopeless. It requires a good stout stick to hold a well-grown Hollyhock plant in position, and as the spikes advance in growth, they must be securely fastened to prevent their being snapped over in a high wind. A good strong plant will throw out many side growths, and it is usual to remove these so that all the strength of the plants may be thrown into the centre spike. Upon the side growths there are also numerous flower-buds, but at the base of each there are a few leaves with leaf growths at their axils; all these may be taken and cut out as Vine eyes are treated for propagation, and if inserted singly in a small flower-pot, they will soon form plants in a very mild heat if covered with a garden frame. The dead and decaying flowers should be removed from the plants, as they not only have an untidy appearance, but they also cause the seed-pods to decay. Seedling raising is also an important and interesting part of the cultivator's work. I sow the seeds in May, and they form strong plants for flowering the following season. They may be sown out-of-doors, or, what is better, in a frame over a hot-bed. The seeds are more likely to vegetate well in that position, and the seedlings can easily be pricked out into boxes to be transferred to the open borders as soon as they are large enough. They ought to be planted where they are to flower in good time so that they are well established before the winter. Seedlings are seldom injured by frosts. J.

poired over them will kill all its touches. Pieces of raw meat or bones from which the meat has been cut has a wonderful attraction for them, and the bones could be dipped in hot water occasionally, when the insects are crowded upon it. Poison is sometimes used. Arsenic mixed with treacle is effective; but, then, such mixtures are extremely dangerous. Carbolic acid will kill them, and a strong solution of Sunlight soap, 6 oz. or 8 oz. to the gallon, will destroy any insects. —E. H.

GARDENS IN JAPAN.

There is in Japan a calendar of flowers, and each month has its festival. In March it is that of the pink Plum-blossoms; in April the Cherry-trees are in bloom; in May all the hillsides are aldaze with the Scarlet Azaleas, and the Wisterias are hanging their long lilac blooms over trellises in the Tea-gardens, or from the trunks of trees in the woods; in June the tall Lilies and Irises (see illustration) are scenting the air; in July the Peony-gardens are visited for the sight of the exuberant blooms; in August the lovely Lotus covers all the muddy pools with splendid flowers and leaves, and laddens the heavy air with sweet perfume; in September the Maple reddens the mountain-sides; later the Chrysanthemum heralds the winter, which is also not devoid of flowers, for before the frosts and snows have disappeared the red Camellias, growing on



Irises in a Japanese garden. Engraved from a photograph sent by Mrs. Ernest Hart.

trees as large as our Hawthorns, are brightening the woods with their ruddy blooms. (Of this p.

WISTERIA-GARDENS I must say one word. It was in May, the month of months all the world over, when I went one brilliant Sunday to Kanmibu in Tokio to see the famous Wisteria-gardens. These gardens are situated on the confines of the temple grounds, which are always the scene of the happy innocent amusements of the Japanese, their religion and their worship not being of the kind to induce to gloom and apprehension, but leading them to make the best of everything in the best of all possible worlds. A bridge, which describes more than a semicircle, and which it is one of the mild jokes of the place to traverse, connects the temple grounds with the Tea-gardens. The bridge spans the narrow neck of a pool or pond, around and overhanging which are set the booths where the happy people picnic. The garbled and twisted branches of the ancient Wisteria-trees form the roofs, and under the flickering shadows of the long lilac blooms, which hang in abundant masses 2 feet and 3 feet deep, the light-eyed *misses* and the winsome children sit on their heels eating sweetmeats out of little lacquer picnic boxes; or leaning over the parapets they clap their hands, at the sound of which huge golden carp as large as salmon-treat lately come to be fed with biscuits and bonbons. Words fail to convey an idea of the brilliancy of the scene. The radiant air, the luxuriant wealth of flowers, the soft brilliant colors of the women's dresses, the many, many lanterns, the laughter, the gaiety, and

the careless happiness of the whole combine to make a scene never to be forgotten. The

ART OF GARDENING is, however, cultivated in Japan not only by public bodies, or solely as a means of providing public amusement and recreation, for it is an art dear to the heart of every inhabitant of the land of the Rising Sun! Every Japanese, however poor he may be, however small may be his house, strives to reserve some little space which would be in England relegated to the uses of a backyard, dustbin, and rubbish heap, to the laying out and cultivation of the traditional garden. This is, as everything else in Japan, unique. In the traditional garden should be found a miniature stream flowing between rocks, bordered by one or more tiny stone bridges and bordered by low Pine and other trees, which are not allowed to grow their own sweet way, but are trained to bend and reach at strange angles over the shallow stream, in the water of which a few tame carp are always to be found. Blossoming trees and shrubs fill up the space, and among them is always to be seen the stone lantern, in which on certain occasions a lamp is placed, with the object, it is said, of lighting the soul back to its old home on earth. In many such gardens, adjoining the paper-walled workshops where the patient Japanese produce their marvels of art workmanship, have I had the processes of manufacture explained or demonstrated to me, or the objects brought out to be photographed. But small as are most of the gardens in Japan, like the people and their houses, and expressive as anything else of the refinement, the absence of care and the repose of their lives, there are yet many gardens and parks which are as extensive as those in England. The great enclosures of the Daimies during the old rule of the Shogunate, most of which have become public parks, the silent groves around the Shiba Temples, and the extensive gardens of the Mikado's palace at Tokio testify to the fact that the Japanese can conceive and carry out a grand scheme of a garden. Among many

BEAUTIFUL PRIVATE GARDENS I may mention, however, that of Count Matsura at Tokio, which was a celebrated garden before the city of Tokio was built. Here a lake takes the place of a pool, and forest-trees overshadow the blossoming Cherries, and a tea-house and bath-house bear witness to the thorough enjoyment of life in a garden. In Japan, though flowers are adored, hot-houses are unknown. With a taste as correct as it is refined, the Japanese do not aim at cultivating the rare, the costly, and the novel, but at taking the common flowers of their country occurring in their natural sequence, and by care and cultivation making them the sources of national enjoyment. Thus the Cherry-trees in Ithome, which in England can only be seen in our kitchen gardens, are deemed in Japan a sight worthy of the Mikado to invite his guests to view. If.

INDOOR PLANTS.

4880.—Fuchsias from seed.—Seedling Fuchsias are not more difficult to raise than other plants. Sow the seeds in heat in spring; pot off when large enough, and treat the same as plants raised from cuttings. The probabilities are the seedlings will not be altogether like the parent. If you have saved seeds wash them out of the pulp at once, dry and place in a paper packet till spring. Keep the soil about dry through the winter, and warm it up in spring, there will then be young shoots break out that will make the best possible cuttings. Under good treatment seedling Fuchsias will flower the same season if helped in heat in the spring.—E. H.

—This is a very simple matter, all that is necessary being to wait until the berries or fruits are ripe and of a deep blackish-purple colour; then wash or rub out the seeds in sand, sweet them in a dry place, and sow in well-drained pots of sandy loam and leaf-mould in February, placing them in heat, of course. Prick off the seedlings singly as soon as they can be handled. Transfer them singly to small pots when fit, shifting them on into the 3-inch size, in which they will bloom during the succeeding autumn. But plants thus raised from seed will not come true. So the best plan is to cuttings are very easily

4837.—Destroying ants.—There are several ways of destroying ants. Boiling water

of the women's dresses, the many, many lanterns, the laughter, the gaiety, and

struck, though it is almost too late now; but with a very little care there is no danger of losing a healthy plant if wintered in any frost-proof place.—B. C. R.

4896.—**Camellias losing their buds.**—I think that "W. N. G. L." is keeping the roots of these too moist in comparison with the atmosphere. The temperatures given are all right for plants under forcing; but this grand greenhouse shrub will not bear hasty forcing, nor do they like a dry atmosphere at any time, least of all when the blooms are expanding. Buds of Camellias will drop very freely from slight causes, and it may be that the plants have been too dry or too wet for a short period. Syringe them occasionally, and so soften the buds somewhat. This often aids them considerably.—P. U.

— This is a common question at this season of the year, and a frequent complaint of amateurs. It is simply the "mismangement," and results from neglect during the late summer days, when it is thought the plants are at rest, and therefore require little or no attention. I often see plants absolutely dust-dry, and it is foolish to rely upon showers, as these simply moisten the surface of the soil, and that underneath is quite dry. A Camellia is a plant that does not quickly show signs of neglect, and is apparently healthy when almost dying. At any rate, this drooping of the buds is due to this cause, but I hope you will not lose all the buds. Pay careful attention now to the watering, giving no more than necessary, and avoid a hot atmosphere.—C. T.

— The temperature is too high, and the plants do not get enough water. Give more water, and put a little stimulant in it. Soot-water is good for Camellias. Do not let the night temperature rise above 50 degs.—E. H.

4899.—**Semi-double White Ivy-leaved Pelargonium.**—No; there is no white-flowering variety in this section at all equal to Mme. Crousse and others in habit of freedom and flowering, etc., and anything of the kind would be a great acquisition. The two best whites so far are La Candeur and Sarah Bernhardt, but neither of these are quite pure, and they are on the whole poor things compared with some of the others. Congo, Mine Cochin, and A. F. Barron are the nearest to a true lilac shade, and Alice Crousse, Daniels Bros., and Cavier are, perhaps, the best among those with magenta-coloured blossoms.—B. C. R.

— There are a number of beautiful varieties, and a good double white is Candeur, the plant very free, and of vigorous growth. Jeanne d'Arc is a fine kind, the flowers white, touched with a lavender shade, and other varieties worthy of mention are Beauty of Castle Hill (rose), Rycroft Surprise, a new kind, a cross between Mme. Thibaut and Souv. de Chas. Turner, the flowers salmon-pink in colour, and the plant very free and vigorous; Edith Owen (rose magenta), La France (lilac), the habit dwarf and free; Souv. de Chas. Turner, one of the best of all, the flowers produced in large trusses, and of a pink colour, with maroon on the upper petals; Galice (rose-pink), Congo (pale-lilac), Mme. Thibaut (pink), and Le Printemps (rose-pink), a beautiful variety.—C. T.

— There are no semi-double Ivy-leaved Pelargoniums as good as Mme. Crousse. Jeanne d'Arc is a very useful variety, with white, sometimes lilac-tinted, flowers; but it is not so free in habit as Mme. Crousse, and the flowers have shorter stalks and are not so useful for cutting. Congo and A. F. Barron have lilac-tinted flowers, and are in their way very good.—E. H.

4903.—**Eucharis and Amaryllis.**—The temperature named would suit the Amaryllis, but though the Eucharis Lilies may be kept in a night temperature of 55 degs., they will do very much better when the thermometer does not fall below 60 degs. Water should be given according to requirements, and most plants will use up more in a warm house than in a cool one. During the resting period the Amaryllis bulbs are kept quite dry, but water is given again when there are signs of movement. The Eucharis is an evergreen, and will not bear drying off in the same way as the Amaryllis, but a partially dry treatment is useful at times for its resting effect. The Amaryllis flowers in summer, sometimes earlier, sometimes later. The Eucharis may be made to flower at any season by varying the resting periods. Those who have plenty of bulbs need never be without flowers.—E. H.

4881.—**Foliage Begonias.**—The best newer varieties in this class are Bertha

MacGregor (leaf long, pointed, and notched, centre dark, with broad silver zone, and narrow margin of bronze); Decora (dwarf, with small leaves and stems, leaves bronzy-olive, marked with greenish-yellow along the midrib and nerves); Dr. James (leaves satiny greyish-white, with dark-green margin and veins); Flora Hill (small leaves, body colour green, irregularly splashed white); François Buchner (large heart-shaped leaves of light-green, edge bronzy-red, pearly-white zone); Mme. Cholet (bronzy-green, with silver blotches); Mme. G. Bruant (leaves deep metallic green, with purplish-red centre and white blotches); Mme. Putry (ground colour, white, with rose markings, and purple and black margin); Mme. P. N. Binot (centre dark, zone silver, and broad margin of purplish-green); Mrs. A. G. Shepherd (broad leaves, centre and edges bronzy-red, remainder of a silky-green hue, beautifully shaded); Mrs. E. Bonner (light silvery-green leaves, margin and ribs, bronze-red, fine habit); Perle Humfeld (leaves velvety green, shaded, with zone of bold silver spots or blotches). Six good older kinds are: Comtesse Louise d'Erudy, Diademe, Distinction, Louise Cluson, Mme. Amagny, and Mme. Selbecq. All, or nearly so, of the above can be obtained of Messrs. Laing and Co., Forest-hill, or of Messrs. Cammell and Sons, Swanley.—B. C. R.

4885.—**Begonia seed-pods to dry.**—You may ripen the Begonia pods by pulling them in a shallow pan of sand and placing them where they will get the full benefit of the light and sun, either on a shelf in your greenhouse or in the window of a warm room. When thoroughly dry the seed may be cleaned by rubbing the pods through a fine sieve or piece of muslin.—E. J. P.

4888.—**Violas in winter.**—If there is no danger of overcrowding the plants in the frame allow the runners to remain; they will give good blooms later on when the bulk of those from the plants are over. When the plants are put into the frame the leaves of one plant should just touch those of its neighbour, then there is no fear of overcrowding.—S. P.

RULES FOR CORRESPONDENTS.

Questions. Queries and answers are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of GARDENING, 37, Southampton-street, Covent-garden, London. Letters in business should be sent to the PRINTER. The name and address of the sender are required in addition to any designation he may desire to be used in his reply. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent in press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and one reader will greatly oblige us by mentioning, or by as brief knowledge and observation permit, the correspondents who seek assistance. Conditions, rules, and means may so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appeared.

4917.—**Japanese Anemones.**—Will anyone kindly inform me when to plant these in a garden?—K. M. P.

4918.—**Himantophyllum splendens.**—Will someone kindly give me directions for culture and treatment of this plant?—A. M. P.

4919.—**Spring Onions.**—I should like to know whether Spring Onions will do best on a Carrot-bed or where?—Gelling to?—Novice.

4920.—**Cinerarias in a cold frame.**—Should Cinerarias in a cold frame be watered overhead through a rose pot at this time of the year, or watered at edge of pot?—Hector.

4921.—**Pruning Fig-trees.**—Will someone kindly tell me whether Fig-trees should be pruned now? An old Fig-tree I have is now full of a new crop of fruit. Should these be taken off?—BALDROCK.

4922.—**"Malmalson" Carnations.**—I have some "Malmalson" Carnations in a greenhouse, and they have brown spots on their leaves. What is the matter with them, and what is the best remedy?—NORICE.

4923.—**Grafting or budding Cherries.**—I have this autumn dug up several Wild Cherries and planted in my garden. To obtain fruitful Cherry-trees ought I to graft them, or bud them next spring?—C. W. G.

4924.—**Lawn-sand.**—Will anyone give me a good recipe for making lawn sand for a large lawn that is much covered with Moss and Ferns? The soil is sandy loam. Will nitrate of soda and sand suit?—F. H. Chrish.

4925.—**Pelargoniums, Tea Roses, &c. for market.**—Would anyone please to inform me what I should keep on for such plants as Pelargoniums for early market, and for Tea Roses and Callas?—EDWARD TUNNICLIFFE.

4926.—**Cape Gooseberry.**—Will someone kindly tell me if the Cape Gooseberry is a good market fruit? Could it be grown with profit in a forcing-house, where an early market; also where seed would be obtained?—J. S. WEAVER.

4927.—**Early Tomatoes for market.**—Will someone kindly inform me when the first sowing of Tomatoes should be made for next year's crop? I would like to have them into the market as soon as possible.—JOHN DICKSON.

4928.—**Sulphate of ammonia.**—Will someone kindly explain for what vegetables sulphate of ammonia is good? Also the quantity to be used, and if dry or in water? Is it good for any flower-roots—viz., Chrysanthemums, &c.?—Cook.

4929.—**Aspidistra.**—How many varieties of Aspidistras are there? Does the variegated variety ever flower; and, if so, what is the best treatment to attend it? Can you give any directions for the general management of Aspidistras in the house?—C. CURFMAN.

4930.—**Plants for a shady spot.**—A part of my garden is shadowed by tall trees, and I should be much obliged if someone would give me a list of under-shrubs and hardy flowering perennials suitable for such a position? The shade is partial, not dense.—CERAMUS.

4931.—**Aphis on Chrysanthemums.**—My Chrysanthemums have been covered more or less all the season with a little black aphis, which clings to the stems. I keep removing it, but it soon appears again. Will someone kindly tell me the cause and the best way to get rid of it?—B. M. P.

4932.—**Fruit-trees in pots.**—My master has bought some newly-potted fruit-trees (Peaches, Nectarines, Plums, and Pears) for an unheated house. Not having grown any before in pots, I should be glad to know if I should keep them dry or moderately wet? The house is as cool as possible.—S. S. B.

4933.—**A garden hedge.** My house fronts a road, and has a plot of garden ground between. I am planning a Laurel hedge, but until it grows up it will need other protection from publicit. Will someone please suggest a few tall flowering plants to grow inside the Larches?—J. C. BIRMINGHAM, M.D.

4934.—**Roses for pegging down.** I am about to form a bed of Roses with an idea of pegging them down. At what distance apart should they be planted, having in view the well-being of the Roses as well as economy in space; or should I obtain a little offset from a bed of Lauras planted closer?—BYOONA.

4935.—**Heights of Chrysanthemums.**—Will someone kindly give me the average heights of the following Chrysanthemums, grown without topping? La Spaulding, Etiole de Lyon, President Hyde, M. G. Leveslay, W. Tricker, W. Coles, Mes. A. Wright, Mrs. de Levin, George Daniels, Mons. Bernard, Violet Tomlin, Mas M. Haegras.—CHRISTY VICAR.

4936.—**Unhealthy Weeping Ash-trees.**—Will someone kindly tell me how to treat two unhealthy Ash-trees? For the last two summers it has made hardly any growth and very scanty foliage, and seems falling. As I have a pair of them on my lawn I am most anxious to save them, and should be greatly obliged for information on the subject.—S. W.

4937.—**Ferns not thriving, &c.**—I have a small store-house, containing principally Ferns. These are well thriving, the foliage being of a pale, delicate green. Will someone kindly state the probable cause, and also what ventilation and watering such a house should have at this time of year? Also whether a large and busy conservatory should have daily ventilation?—ISQUIRE.

4938.—**Lilies in pots.**—Last year I had some Lilium roseum (Queen's) given me, which I planted out. Next year I should like them in pots, so have taken them up to dry. Should I break off the little offsets, and plant them out, or in pots, or will they be best dried with the old bulbs? I, of course, should like to increase them, and do not want to waste the little offsets.—BALDROCK.

4939.—**Scotch Firs.**—I am proposing to cut off the lower branches from a row of Scotch Firs. I have done so for several winters past, but each year the trees seem to bleed or exude more resin. This year the branches are so thick that I am afraid of bleeding the trees to death, so appeal for advice. Is there much danger of killing the trees? What is the safest time to cut them?—AMATEUR.

4940.—**Plants for a herbaceous border.**—Will someone kindly give me the names of about twenty plants suitable for herbaceous border? I would like good flowering kinds that would not grow higher than 2 feet on an average. I may say I have planted bulbs of sorts in it, and want these to partly form a background. Being a reader of GARDENING this last eight years, I am sure you will assist me.—ALLANBARDA.

4941.—**Vine-roots going down.**—I should be glad to know the best way to encourage the roots of Vines to the surface of the border? My land being rather heavy they have a tendency of getting to the bottom of the border—I mean inside of the house. Also, would the present time be right to lift them carefully? The Vines are now about seven years old. Any information on the above subject I shall be glad with.—F. C. C.

4942.—**Gas-tar on hot-water pipes.**—Will someone kindly say if gas-tar on hot-water pipes causes any injury to the plants? I have just put in a hot-water apparatus in my new greenhouse just erected, and I was advised to use the pipes with gas-tar in present run, but I find the plants are being burnt considerably. Is this the cause of the tar on the pipes? If so, can I do any thing to prevent this?—A YOUNG ENGINEER.

4943.—**Japanese Chrysanthemums.**—I shall be very much obliged if any one can tell me the name of some Japanese Chrysanthemums now growing out-of-doors in London gardens (November 1st). They are a brilliant bronze-colour, and I see, are being a great deal sold in the streets. I should also like to know the name of a very large cream-coloured Japanese Chrysanthemum now growing out-of-doors in London?—M. R.

4944.—**A bushy Rose, &c.**—Will someone kindly tell me the best bushy Rose to grow in a raised border against a north wall about 5 feet high, or a Fuchsia to answer the same purpose? I wish it to grow just above the wall, so as to take off the strain of the line; but do not want a too heavy one, so that would have to be kept constantly cut back at the centre of flowers. I get a little a stake, but that does not do. I have in more suitable subjects.—J. GARDNER.

4945.—**A garden in Surrey.**—I shall be very grateful if someone will tell me what to do with a garden in Surrey on a slope facing south-west, with the sun on it all day? The soil is very sandy, and when any deeper than one spit is sand-rock, either soft black or yellow clay. A lot of fruit-trees were planted by a nursery gardener, but, so far, in three years have made no growth. What should be done with them? Also, how ought the borders to be prepared for flowers?—M. B.

4946.—**Early-flowering Chrysanthemums.**—Will someone kindly give me a reliable list of early-flowering Chrysanthemums for outdoor work in Yorkshire, not including *Mine*, *Desgrange* and her sports? This year, if ever, Chrysanthemums should have flowered well outside; but William Holmes, Lady Selborne, Plymouth (and I think), and Mrs. Cullingford, all called "early-flowering," have failed to get beyond the bud stage with me. They were planted out in a rich border in May. —COTSWOLD VICAR.

4947.—**Valiota not flowering.**—I have had a *Valiota* for three years, and it has flowered each autumn, but does not make any growth. During the summer it has about seven or eight leaves, and directly it has done flowering about three or four of these turn yellow and drop off. It is kept in a sunny window, with a fire all the winter. This year it has not flowered at all. Should this be so? I see other *Valiota* plants large and full of leaves. I have not repeated it since I had it. Any information will oblige. —A LOVER OF FLOWERS.

4948.—**Early Strawberries.**—I have about 200 strong plants of Nobles and Paxtons, grown in 5-inch pots which have been for the last three months in a trench in my garden filled with Cocoa-nut-bark. I want to know the future treatment for forcing? When must they go into vinery? I have a hanging shelf that will hold about 50 pots some 18 inches from the glass, and another shelf against a wall at back of vinery. Will they require heat, as I do not want to force Vines? Should I take all the quantity into house and approach of hard weather, or only a portion of them, as I want to see how they will grow in rotation? I do not want them to fruit until the season is fairly on. Any information will oblige. —AMATEUR.

4949.—**A kitchen garden near a river.**—My kitchen garden runs alongside a river, the normal height of which is about 2 feet 6 inches below the lowest level of the garden; even in very high floods the water never comes into the garden. The soil is sandy. I propose to protect the river side of the garden with 10-foot high barbed paling. This will have an aspect east by south. I am anxious to cover the fence with fruit-trees—Pears and Plums for choice. For about how many trees would there be room in 30 feet length? What inexpensive precautions, if any, would be recommended to prevent the roots getting into the water? What sorts would be likely to thrive in such a situation? What would be about the latest safe date for planting? In fruit I infinitely prefer flavour to size and appearance. —REVEREND QUERY.

REPEATED QUERY.

4818.—**Ferns for a heated conservatory.**—Will someone kindly tell me what Ferns and Mosses will suit a conservatory, moderately heated by hot-water pipes up to 60 degs. It is on the south side of the house. There are glass panes, with windows above and at the sides to open, size 20 feet by 7 feet. I live in Bayswater, London, and wish to grow some large hardy Ferns high up, and some smaller and fairly delicate Ferns low down among the tufts, which forms a rockery overhanging a pool. There is plenty of *Platanus*. Will *Smilax* trail up the wall in this conservatory, or does it require more moisture?—PASIR.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

4950.—**Cypripedium Leeanum.**—H. Hubbard sends a flower of this fine hybrid, but it is a very poor form of the plant which has become a great favourite. Your flower appears to have so much green in the dorsal sepal, and the rest of the flower is very dull coloured. I cannot congratulate you upon your success.—M. B.

4951.—**Lycaste Skinneri alba.**—Ben Hardy sends me a flower of this chaste and beautiful variety. It is not so large as I have seen, but the contour of the bloom is charming, and being so broad and full. "B. H." asks me to tell him something about this family? I cannot do so this week, but I will endeavour to shortly.—M. B.

4952.—**Indian Filberts (S. J. T.).**—These seeds which you inquire about are sold in London by this name. The seeds are contained in large, flat, woody pods, which grow from four to six feet in length, and are the fruits of *Eutida scandens*. It is a native of tropical America, and the natives of these countries convert them into spoons, snuff and Tobacco-boxes. The seeds, although large, are not edible.—J. J.

4953.—**Adiantums.**—G. Gubbin sends what I have always known as three distinct kinds under the one name plant of *A. hispidulum*, and he asks if these are all the same? Now the frond marked 1 is *Adiantum julianum*, 2 is *Adiantum tenellum*, and 3 is *A. hispidulum*. You will see a great difference in the shape of the fronds in 1 and 3. The frond marked 2 is more like 3; but in its size it always keeps constant under cultivation whatever it may do in a wild state, and I have always maintained the three to be distinct kinds.—J. J.

4954.—**Cypripedium insignis punctatum violaceum** (No Name).—This is the name of the variety sent, and not the form known as *Mauli*, after Mr. Maul, of Bristol. This is a bolder and, in my way of thinking, a far superior flower. It is quite astonishing the number of fine varieties of *Insignis* that are cropping up nowadays, making this old species quite a gay and desirable plant, and I wish to see you to my residence there is a collection with several hundred flowers now open, which make quite a splendid appearance.—M. B.

4955.—**Cypripedium Arturianum (G. Gloze).**—I cannot compliment you on your skill in cultivating this seedling. It is certainly the most beautiful I have ever seen; but I strongly feel the necessity of bringing forth such a fine form of it as you send, and I should imagine it

must have been a fine form of *C. Insignis* which you took for the parent, for it is an excellent variety of the above hybrid, which was obtained first by the Messrs. Veitch, and it was named by Reichenbach in honour of one of the members of the firm. Your flower has a wonderfully long dorsal sepal with a very white top.—M. B.

4956.—**Repeating Orchids (J. Benson).**—You do quite right to ask these questions in good time. You say you have taken my advice, and repotted your *Odontoglossum* and cool *Oncidium*. Now get some peat-fibre and some sphagnum moss picked, and keep it in the house ready for use. All the plants will not require potting or repotting at the same time, so that in the case of one or two coming on with their wants and requirements you will have nothing to stop you from doing it at once. The advantage of keeping material in the house with the plants ensures you from injuring the roots with cold soil.—M. B.

4957.—**Oattleya calumnata (John Godefroy).**—I read your letter before seeing the flower, and I came to the conclusion that it was not likely to be true, for the plant is too expensive to be in the collection of a working Amateur. It is a supply one of the parents of *calumnata* (*C. Arabialis*), and if you paid anything like a price for this raised between *C. intermedia* and *C. Acanthis* in M. Bleu, of Paris, and it is certainly a most beautiful hybrid; but it appears to differ from most of the garden hybrids in being of a bad habit of growth, whilst the most of garden hybrids are very free. Your flower is an ordinary form of *C. Acanthis*.—M. B.

4958.—**The Sage Palm.**—W. Williams sends a penately-cleft woody leaf, on which are borne the seeds of the *Cycas revoluta*, and which will be of no use whatever, because it requires to be fertilised. These plants are really not Palms at all, but are members of the *Cycadaceae*, and in Japan and China a kind of starch resembling *Sago* is obtained from the pith. You have a beautiful ornamental plant, and one that will not rapidly grow too tall for your house, although it does require watch to spread its leaves. Do you require to cut the old leaves away? This is the plant used by the Saxons to do honour to the dead, and a leaf was used in the same manner as we use wreaths and crosses.—J. J.

4959.—**Lælia Dormaniana (Catherine Edwards).**—This is a pretty variety which this lady sends for a name. It flowers for the first time some fourteen years ago in the garden of the gentleman whose name it bears. It does not appear to vary greatly, and this does not say much for the supposition of its being a natural hybrid; and yet I have seen it imported in great numbers. The sepals and petals are bronzy-green, streaked and flushed in the flower before me with purple. The three-lobed lip has large side-lobes of a rosy-purple, and the middle lobe is of a very deep and rich amethyst-purple. Its native home is in the mountains about Rio de Janeiro, at some 2,000 feet elevation. It is a very pretty little plant, having slender stems growing about 1 foot or eighteen inches high, usually bearing a pair of leaves, and it is because the thin stems become dry and leafless on their journey home that the plants have such a paltry and mean appearance that it has not yet received the attention at the hands of growers to which I think it is entitled.—M. B.

NAMES OF PLANTS AND FRUITS.

Any communications respecting plants or fruits sent to me should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton Street, Strand, London, W.C.

Names of plants.—C. M. Mayor.—Appears to be *Rubus australis*.—J. P., *Sorbaria herbacea*.—1, *Nephrrolepis exaltata*; cannot name the others from leaves only.—H. B.—The numbers of two were off; but I think this is how they were with the very dark edge to the lip. 1, *Lælia Perrini*; 2, *Lælia Dayana*; 3 and 4, varieties of *Cattleya Lohrbachii*.—L. Stauffer.—1, Cannot name iron infertile fronds; send again; 4, *Polystichum Wollastonii*; 5, *Lastrea Niebohl*. The others had no numbers; send again.—T. W. S.—We cannot make anything of your *Cypripediums*, for when they arrived they were all without a spot or marking whatever.—W. Horbin.—1, *Adiantum hispidulum*; 2, *Polystichum angulare* prolixum; 3, Not recognizable; 4, *Ditto*; 5, *Ladies Cudston* is *Armeria vulgaris*, but cannot recognize the plant you send; 7, Send when in flower.—B. Williams.—*Cycas revoluta*.—Catherine Edwards.—*Lælia Dormaniana*.

Names of fruit.—Gnat.—Pears all Autumn Crasane.

POULTRY AND RABBITS.

4826.—**Keeping Pigeons for table.**—Try the cross of *Dragoon* hens and *Cherry* cocks. Hens will breed well up to five years, and cock birds when of generally finish off their young better than younger birds. Feed the old birds on equal quantities of brown Peas, Tares and Indian Corn, leaving the last out after Christmas, as it makes laying hens too fat. When the young can peck give them Indian Corn.—J. B. R. P.

The common Cote Pigeon, sometimes called the Blue Rock, would be the variety I should recommend. You should procure some young birds from two or three lofts, and thus ensure a cross from the first. There may be some exhibition varieties which would answer, but the probability is they would not breed as rapidly as those which have been accustomed to harder fare. Pigeons rarely grumble at any food which may be offered them, especially if they are accustomed to the food from the first. Peas are useful, but I find they relish anything which the hens will eat, such as soft foods of various kinds, Wheat, Buckwheat, Barley, and the like. They like mortar rubbish to peck at and will also

readily pick up small pieces of rock salt. For breeding Pigeons I should use plenty of meal, as this is passed on at once by the old birds to the young ones in the nest. Pigeons breed for several years and need not be changed every year like fowls. If I were about to make a start with Pigeons on a large scale I should take care to keep an exact record of the birds hatched in each year, so that the birds could be distinguished at any time on examining their legs. Pigeons will feed as often as their feeder cares to throw them corn. I should be content with twice daily, and let them do a little foraging on their own account. I cannot speak positively as to the number of pairs which may be bred in each year from one set of birds, but this year I have known a flock of birds increase from two (that is, a cock and hen) to eighteen. I believe two pairs of the young birds have nested on their own account, and I have reason to think that another nest is being made. I do not think this could be looked upon as an average return, especially if a large flock is intended to be kept. The pair of birds to which I have referred were about to nest last Christmas when the remainder of the flock were sold; they were therefore kept and have had the use of a large Pigeon-house, in which they have not been molested either with rats or other Pigeons. I am not prepared to say that Pigeons (the common kind) will not pay in any case, but, as a rule, I believe they do not. I have already said they are tremendous eaters; they are ever ready to drive away chickens from their food, and when any favourite corn happens to be stacked within easy reach of their cote, they are constantly engaged in pulling out the ears or pods. Another obstacle to profitable returns is the constant shooting which goes on when the birds take a daily turn in the neighbourhood. On several occasions I have seen them return with a broken limb, and there is no doubt that many are ever ready to shoot at any game which comes within their reach. It is right to point out these things to "Blue Rock," so that he may not be disappointed. If he merely looks upon the Pigeons as a hobby he will not be so particular about the expenses exceeding the receipts.—DORLING.

4827.—**Keeping fowls, &c.**—It is difficult to advise in cases of this kind. If the bird were active last year, and good broods of chickens were hatched, there is no reason why the same success should not be forthcoming next spring. It would undoubtedly assist to secure this end if the bird were now separated from the hens, and be made to pass the winter in a roomy run, where he could get plenty of attention, and not be permitted to fall off in condition. The two birds should certainly ensure an abundance of fertile eggs. If the old bird were not reliable last season there can be no encouragement to keep him for another year, and in that case I should certainly sell. I am not particularly partial to cross-hired cocks, although I have met with some which were very useful, and begot good chickens. The Rock and Houdan cross should answer, large birds, good table fowls, tinted eggs, and plenty of them, as well as little trouble from excessive broodiness, all being possible to secure if good strains are selected for the parent birds. With regard to "Ivy Bank's" fowls, the quiet omits to mention whether any chickens, and, if so, how many, have been bred during the nine months. This alone can determine the question whether the returns given is a good one or not. We may consider the nine months' average to be one hundred eggs per hen, and there are still three months to run, during which few eggs can be looked for. I should not look upon the average as a good one if the hens had done no sitting; but even in that case it is not wise to pass an opinion, because the pullets should have done some work in the three months immediately preceding the 1st of last January. October is the first month in the poultry-keeper's year, and the returns should be given from the beginning of that month to the end of the following September.—DORLING.

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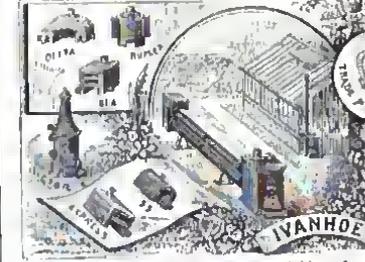


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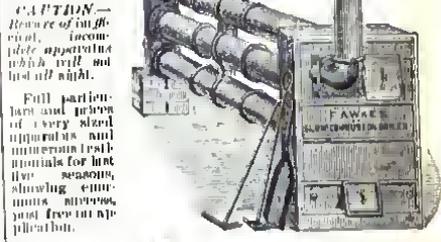
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NOVEMBER 25, 1893.

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CHRYSANTHEMUMS.

THE BEST NEW VARIETIES.

So many take an interest in *Chrysanthemums* now and grow the newest kinds that I have made notes of the more important novelties worth getting to add to any collection. All the newer additions, at least those for exhibition, bear very large flowers—in fact, a small or even medium bloom is useless in competition. It is overshadowed by the monsters, measuring sometimes nearly a foot across. This is a false taste, but as readers want to know the best varieties, their names and a brief description of each are here given.

JAPANESE.—Of this class, amongst the whites the first is unquestionably *Mlle. White's Key*, a large, handsome flower, pure white, the florets broad, but not coarse, like so many of this section—*Waban*, for instance, a much-praised novelty, but far too coarse and ugly to grow. There seems a perfect plague of these monstrous, big kinds, and why they are grown is a mystery. This former variety is French, but many of our most beautiful novelties are raised by English growers, a few by Americans, but it seems likely that in the future the majority of the best *Chrysanthemums* will be English seedlings. *Golden Wedding* is likely to prove the best of the yellows; the flowers are large but refined, the colour deep-golden-yellow, and the florets incurved slightly. It is a stately grower and in all ways a fine *Chrysanthemum*. *Chas. Davis* is a sport from *Vivand Morel*, that peculiarly sportive variety, which is pure-white on early buds, and later blooms display various shades of rose-lilac. The sport *Chas. Davis* has bronze-yellow flowers, and the petals reflex, more so than the parent. It is a good grower. *Lord Brooke* is classed as a reflexed Japanese, and is a very fine flower. It is very large, full, and when in perfection more like a giant incurved than a Japanese. The colour is very rich and beautiful, bronze-yellow, with a more distinct orange margin to the broad florets. *G. C. Schwabe* is a full, handsome flower, colour carmine-rose, the centre of a golden shade. *Col. W. B. Smith* will be as much grown as any Japanese kind. The habit of growth is like that of *Avanduche*—that is, dwarf and vigorous, and the flowers are of pleasing colour—old gold, shaded with terra-cotta, a distinct tone. I have seen many fine blooms of it this year, and it has been shown in all the leading stands. Excelsior is of a different style; the flower is stiff to a fault, but very full, solid, and striking, the florets broad, cherry-rose colour, and somewhat incurved, showing a silvery reverse. *William Seward* has not shown to advantage this year, but this is due, I think, to hard propagation. There has been a great demand for it, with the usual result—the plant is propagated "to death." Those flowers in free stands I have seen have been very fine, as much for form as for colour, a deep-crimson, not unlike that of *F. A. DeWitt*. Another very fine dark-coloured variety, remind-

ing one in aspect of *Val d'Amloré*, the colour deep-crimson, a superb shade. It is quite a relief to see such kinds, and I hope raisers will get good decided colours. The poor, washed-out colours of many novelties is objectionable, and such kinds are lit only for the rubbish-heap. *Gen. W. Childs* is a variety that seems very poor. If it not worth buying as yet, although might be better next year. At present it is far inferior to many older varieties. *Beauty of Exmouth* is worth noting, the flowers are very refined, and the white florets curl and twist about in a charming way.

A few years ago much interest was shown in the hairy or hirsute class. *W. A. Manda* (yellow) and *White Louis Boelmer* are beautiful, the latter far more so than the daisy type. It is better far, in my opinion, than *Mrs. Alpheus Hardy*, which is a miffy grower, whereas the other is vigorous and the flowers solid. They are pure white, opening of a primrose tint, and very hairy, if that is any special recommendation. It is synonymous with *Enfant des Deux Monts*. *Miss Dorothy Shea* (terra-cotta), half reverse. *R. Flowerlay*, the florets crimson and with silvery reverse. *Duke of York*, crimson, and *Mrs. Harriet Payocare* good acquisitions, the flowers large, of a rose-purple colour, the reverse silvery in colour. *J. Sunborough Dilbeek* (yellow to bronze) is a splendid kind. Many new kinds have been certified quite recently, but will not be in lists yet, and, therefore, it is of little use describing them. The incurved *Chrysanthemums* are getting much more numerous, and we have now some really fine things amongst them, which make this class more interesting. At one time it was chiefly the *Queen* family that was grown, until one got tired of the same colours and style of bloom. *M. R. Buhant* is a good French variety, although we do not like the same dark rose-purple colour. It has, however, been much shown this year, and is likely to be popular because strong in growth. *Brookleigh Gem* is of note for its rather distinct colour in this section, the flowers neat, and lilac-pink in colour, shaded with white. It is scarcely decided enough, but is shown well this year. *Lady Hemtel* is excellent for exhibition, and *Mrs. Robinson King* has been shown very freely this year. It is a sport from *Golden Empress*, the colour richer than in the parent, the flowers well shaped and neat. *Ami Hobe* may be mentioned, the flowers buff in colour, with a purplish shade. There are some kinds that are really both incurved and Japanese incurved. *Robert Camell* is a case in point, a reddish-bronze colour, and the same may be said of *Mrs. Libbie Allen*, which, as I saw it a few days ago, was distinctly incurved the colour clear yellow. It is rarely difficult to advise upon this section. The shoots often turn out very similar to the parent, and one must exercise extreme care in purchasing. In the various other sections, a very good *Anemone* kind is *Mme. Nathalie Bram*, the colour sulphur-yellow, with disc and ray florets. *Kate Wells* is a reflexed Pompon, the flowers of a crimson shade, with the petals topped with golden-yellow. A very distinct Japanese *Anemone* kind is *John Bunyan*. It is quite new and worth recording as a fine acquisition to a small but

pretty class. The flowers are yellow, brighter in the centre than the guard florets. *Mrs. C. J. Salter* is a delicate self-bluff-coloured *Anemone*. I shall mention a few others as they are exhibited that I think worth noting by amateurs who grow the *Chrysanthemum* largely. There are now so many new varieties that the utmost care is necessary in selecting only those of real merit. F. P.

4931.—Aphis on Chrysanthemums.—Tobacco-wash and soft-soap—3 oz. of soap and 1 quart of Tobacco-liquor to the gallon of water—will kill black-fly, which are more difficult to destroy than green-flies. Tobacco-powder dusted over the infested parts, if taken in time, will be effectual. There is no lack of remedies if there is no procrastination in their use to keep down flies with ease. If the plants are not too large they may be dipped in a tub of wash made by dissolving Sanlight soap, 3 oz. to the gallon of water, used warm; better still the soap in the water.—R. H.

—This is one of the troubles of the *Chrysanthemum* grower. In doors or out-of-doors the aphid attacks the plants, and it is found on the young growths now starting from the roots, from which the cuttings are to be obtained for next season. Dip the cuttings in a solution of a little soft-soapy-water and Tobacco-liquor before planting them; and if it appears on the young plants when they are under glass, fumigate them with Tobacco-smoke. The insects will appear on the points of the growths when the plants are out-of-doors, and are usually destroyed by dusting with Tobacco-powder.—J. D. E.

—This is the Dark Aphid or Goldfly (Aphis fabae), which has been unusually troublesome this season. The best remedy is Tobacco, dipping the affected shoots in, or syringing the plants with an infusion of the fat, or the diluted liquor may be employed.—B. C. R.

4943.—Japanese Chrysanthemums.—There are many bronze-coloured varieties, but no doubt the kind is *Source d'Or*, *L'Isle des Plaisirs*, or one of that class. *Source d'Or* is one of the roughest, the flowers being produced with great freedom, and their bronze, orange, and chestnut colour is very rich. *Source d'Or* is a good market flower, and I notice it is being sold largely in the streets. Possibly the other variety is *Mrs. Randle*, which will do out-of-doors, but the white flowers get sullied in wet seasons. The time to plant is the spring.—C. F.

—Probably the bronze-flowered *Chrysanthemum* is *Source d'Or*, and the creamy-white may perhaps be *Lady Selborne*, as it is much grown.—E. H.

4946.—Early-flowering Chrysanthemums.—The varieties mentioned are really the October-flowering indoor kinds; but I have seen them blooming well out-of-doors. It is possible, however, the position does not suit the plants, and you are a good way north, where flowers are naturally later than in the south. This year in the northern counties the *Chrysanthemums* have been very late. My advice is to rely upon *Mme. Desgrange* and its sports, which bloom before the frosts. Three flower from August to October: *Alice Butler*, a sport from *Lyon*, red, with an orange shade in the throat; *Blushing Beauty*, a very bluish-coloured

Pumpkin: Early Blush, very early, bluish; Golden Shag, splendid yellow Pumpkin; Piercey's Seedling, bronzy-yellow; Lyon, deep rose-purple; Mlle. Loni Lassali, creamy-white; La Vierge, pure-white; and Précoce's, bright yellow.—C. F.

— This has been a very bad season for all of this class, probably the most un-remiss; but it will not be always so. As a rule, all those named do well and bloom beautifully. So far north you will find the true "early" or summer-flowering varieties, as distinguished from the October-flowering kinds you name, much more satisfactory, though the individual blossoms are not quite so fine. A few good ones are Lyon (rosy-purple), Anastasia (light-purple), Blushing Bride (rosy-lilac), Alice Butcher (reddish-orange), Précoce's (bright yellow), Crimson Précoce's, Tiberta, Flora, and L'Ami Condorhet (all shades of yellow), Piercey's Seedling (bronz-yellow), Martinnas (blush), P. Pâle (leucopurpurea), Mme. Pécot (purple), and Mr. W. Piercey (bronz-red).—B. C. R.

GARDEN WORK.

Conservatory.

Now that the outdoor flowers are for the most part over, special pains should be taken to have the conservatory as gay as possible. It will, of course, be mostly understood that winter flowers cannot be improvised. A good winter display involves a long previous preparation. Even the Christmas-trees, which are now so much in evidence, require some upon twelve months' work to bring them to perfection; and if they are to remain in good condition as long as possible, other things must in a general measure be subservient to them—at least, for the time being. Too much moisture or too much heat, and the flowers soon show decaying points. Light cleanliness and a freely-ventilated, dry atmosphere must be insisted on so long as the Christmas-trees remain effective. Labor on when the forest flowers come in, the camellias can be altered to suit the plants which have been brought in to heat. To keep the flowers in good condition the house should never be altogether closed, except in frosty or windy weather. The watering now is a very important matter. Never neglect to immerse the plants. Plants, even when the pots are full of roots, dry slowly now, and though it will be necessary to look over the plants every morning, only a few may require watering. Unless there are visible signs of distress no plant should be watered without its condition being first ascertained by tapping the sides of the pot. To the practical ear the sound tells in a moment the condition of the mass of earth inside. Permanent plants with the roots in the border must not be permitted to get dry. Camellias, Aralias, and other plants in a free state of growth must have water enough. There is but a danger of these being overlooked, and they may grow the buds of the Camellias or the flowers of the Aralias, which in a starved condition, must come small. In a hot house numerous of these plants Aralias may be used to water the columns or to drain in the walls. Give Camellias now opening their blossoms weak water. Thrips are fond of their large smooth leaves, and if they are permitted to effect a blotch the plant is soon withered. I have had the Indian Lappans very good planted in a bed of loam and peat well drained, and fragrant blossoms are always appreciated. Mignonette of the palm-growing variety when planted out becomes almost a shrub. I have seen denser bushes under glass which are always in flower, and will last two or more years; of course, with age the flowers come smaller and there is less fragrance, but young plants started early in spring, and planted in the nursery border about June, will make strong plants full of bloom in winter.

Stove.

Cypripediums are among the easiest Orchids to manage, and are also about the most useful, because they may when in blossom be removed to the conservatory or the room, and remain in flower for several weeks if watered carefully. There are many beautiful forms of these plants now, some of which are too expensive for the person with a slender purse to buy. Their requirements are plenty of drainage, some good fibrous peat and Sphagnum, with a free admixture of broken charcoal. The pots should be half-filled with drainage. During growth the plants require plenty of water, and to be syringed freely. After growth is finished root down, and give less water, but do not dry off altogether. Good plants of *C. insigne* for growing on may be purchased for a comparatively small sum, and *C. renatum* (barbatum), which will last for years, is cheap kind; but a good trade list will contain something like one hundred and fifty species and varieties; so a good deal of money will be required to obtain a really good collection. The *Filtonias* and *Sonchilias* are very beautiful. The *Filtonias* when grown in pots are charming for table-decoration; but the *Sonchilias* are too delicate for rough work. They would be very interesting under a bell-glass in the small stove. The amateur might grow these who could not find room for larger specimens.

Cucumbers.

Seeds should be sown now for planting in a warm-house next month. Sow in single pots and plunge in a brick half-bush in a small frame or under a light. It is thought by some that old seeds are better than new; this is, I think, a mistake, for plants started now cannot have an excess of vigor. Plants raised now will be ready for setting out about the first of January, or perhaps a little earlier, and if pushed on freely will be ready early in the year.

In culture the most important details the operations referred to under "Garden Work" may be done with ten days to a fortnight later than is here indicated with the best results.

March. Bottom-heat there must be of some kind; hot water is regular and steady; but where there are white pits and plenty of manure, the manure left unwatered will do as well as the water to the dress-litter manure—on the top, at any rate; the plants like to root in it, and it is a great help to them when they are bearing freely. There is nothing better for planting in than old, rotted turf, which has been laid up six months; this may be mixed with a little old manure. No great quantity is required to start the plants in, but as soon as they begin to grow, and the white roots work out on the surface, top-dressings of the same kind of compost must be given. During the early season care is necessary in the watering; and the water should be of the same temperature as the house. Always cut all Cucumbers when large enough for use.

Mushroom-house.

Do without fresh air as long as possible. Where new beds are frequently made up the heat arising therefrom will keep up the temperature; 55 degs. will be high enough to produce good Mushrooms. Fresh batches of Spagnum roots should be introduced every fortnight to keep up a regular supply. Blankets as often as is necessary; probably every three weeks will suffice. Put a few roots of Chicory, the blanched leaves will be useful for salads. Dandelion roots planted in boxes will be useful also for the same purpose.

Forcing-house.

Tea Roses which have been well ripened may be started now. Buds of many kinds which have filled the pots will grow as well in soil as in air, and will soon open in the flowers in heat. Lilacs, Deutzias, Rhododendrons, Azaleas, Scion's Red, Lily of the Valley, and any other forcing plants which have had a suitable preparation may soon be planted in heat.

Forcing Asparagus in Frames.

Asparagus will come on fast now in warm frames. Beds of sticks and straw, and leaves, 6 inches high will give heat enough to start Asparagus strongly. Mat up the frames until the beds are pushing through, then gradually expose to the light, and give a soaking of warm liquid manure. A little ventilation will help the favour. Asparagus frames will afterwards come in for Potatoes, Radishes, Carrots, &c.

Window Gardening.

Ventilate on fine dry days, but avoid cold draughts. The air should be admitted at the top, not the bottom. Water with judgment, and never leave any water in the saucers. Keep down insects on *Platygaster* by using the sponge dipped with soap and water; the flies may all be wiped off with a light brush. Begin in time, and the pests will not give much trouble.

Outdoor Garden.

Wesley lawn may be plowed now: the large weeds should be taken out, and a top-dressing applied to encourage the Grasses to get strong and form a thick, close growth. Many lawns have been injured by drought during the past season. These are in the worst condition when the Grass has been cut close to the ground. I may repeatedly urge in this column that the Grass should not be sown down so close, till the machine is half an inch by dropping the front rollers; that half-inch of fibre over the roots will be a check upon burning in summer, and if well laid in the banishment of weeds and worms. Groups of *Yerbanums* and Tree Peonies are charming things on the lawn; they are getting riper now, and when a strong roof of a good variety can be brought for a shilling, I think there is no extravagance in the purchase, having regard to their permanent character. French up the beds, but do not bring up hot soil. Add manure, and bury down to improve its character. Leaf-mould may be largely used as a top-dressing for beds and borders, if it can be made at home. In country places leaves can often be had for the collecting, and when laid up for a year or a little longer they are very useful for mulching borders of bulbs, &c. Christmas trees are throwing up flowerings now. Though unsuspended at present there is but strong plants a promise of a good bloom. If possible, the blossoms should be sheltered with hand-lights, or something of a similar character.

Fruit Garden.

Those who are thinking of planting fruit on a large scale will find the advantage of getting the land into condition by breaking it up deeply either with the spade or the steam-cultivator, and during the winter have it well worked, and, if poor, manured, the cleaning and general preparatory work to be finished by pinning the ground with Pulverizer in March, or not later than the middle of April. If the steam-cultivator is used the crop of Potatoes will pay for the cleaning of the ground, and a heavy crop of fruit-trees may be planted with reasonable chance of success. I have seen several trunks of land treated in this way within the last year, and the result has been what one might expect from good work. Merely digging a hole and setting a tree in it is not planting it in the proper sense of the term, it is only just sticking it in. And even when larger holes are made and the trees are properly planted it does not give the tree so great a chance as when all the ground is thoroughly sanded up with a steam-cultivator 30 inches or so deep. Where not sanded are employed for producing the earliest lot of fruit they will now be in readiness for starting. It is not customary to repeat Vines just before starting, and, no doubt, there are good reasons for this, though I have several times shifted Vines on the eve of starting them I never found any bad results therefrom; but I think it is best if Vines are in pots too small to brush the top to wait till the trunks are set, and then repeat.

Vegetable Garden.

As regards sowing Peas and Beans in autumn, much depends upon situation and circumstances. In warm sheltered gardens it is advisable to sow towards the end of November in the warmest site available. If the garden is bleak and cold try and raise the first bit of Vias in pots or boxes, or in some other make-shift warm glass. In the early stages Peas may very well under glass in a temperature of 45 degs. to 50 degs., but they should be sanded when up more than 3 inches high. If kept in the pots too long the Peas may be weakly and tall over, the crop may be not worth much. Chichester, Gen. American, Wonder, and William I. are good early Peas. If sown direct open into the land in a good soil, the plants

before sowing, and cover about 2 inches or 2½ inches deep. If there is any danger of mice attacking them dress the Peas with red lead just previous to sowing, and either mice or rats will touch them. Kale are often damaged by mice, and may be protected by clearing them off with phosphor-gas sprays or Inval-sulphur and laid in their runs last thing at night. Must be taken up early in the morning and buried if it is not all consumed. Those who have plenty of leaves may make up hot-beds for Carrots, Early Potatoes, and any other crop of which early produce is required. It is perfectly true that all things move very slowly in winter, and if a start is delayed till Christmas is hurried not much time will be lost.

E. Hooley.

Work in the Town Garden.

As Christmas-trees go out of bloom they should be cut down to 6 inches or 8 inches of stem, and such as are required to furnish cuttings for next season's display be removed, if possible, to a root and low pit or frame. Any surplus may be thrown away at once. In such a position as I have just described, and where plenty of air can be given in mild weather, and the plants stand close to the glass, they produce far stronger and better cuttings than if standing far from the glass, and perhaps shaded by other plants, and in an unnecessarily high temperature. They should be cut down in sections, but save away old sticks thrown over the glass will effect this at least, in the present; but bear in mind that if once thoroughly frozen through the pots very few of the modern show varieties will survive. Where a few extra large specimen plants are desired it is a good plan to reserve a few plants of such free-flowering varieties as Klaine, any of the *Itulle* family, Fair Maid of Tinsbury, Mme. Louise Leroy, or almost any of the reflexed class, choosing such as show signs of breaking freely from the stems. Do not cut these down quite so low as the others, remove all suckers, keep them in good greenhouses temperature, and spray them occasionally overhead, and if stopped two or three times and shifted on into large pots during spring and early summer small plants will attain a very large size, and produce an immense number of moderate-sized but most useful blossoms. Begin striking cuttings of such varieties as Bonte d'Or, R. Brocklebank, Meg Merrilies, Coronet, and other varieties that require a long season of growth. The cuttings strike better in an ordinary greenhouse temperature of 45 degs. to 50 degs. than in either a cooler or warmer place; but to prevent flagging they should be covered with a rough kind of straw, and not too closely covered with an old sack, or with a few horse sheets of glass until rooted. The removal of some of the earlier Christmas-trees from the greenhouse will allow the stock of other plants to be spread out considerably. Chinese Primulas, single and double, will be in full beauty now, and should constitute quite a feature, as they are decidedly the best winter-flowering plants for a town garden we possess. They succeed best at this season on shelves moderately near the glass, and to keep them in full vigour the soil must be kept in a good green-house temperature. Examine the earliest potted batch of bulbs, and if the pots are full of roots and the tops show signs of moving, clean over a few of the most forward pots of *Rumex*, *Fraefrilia*, Van Thol Tulips, Paper-white and other Narcissi, and subject them to a moderate amount of 60 degs. or so, when they will be well on by Christmas. Bulbs of the Valley require a stronger heat at this season, and of these no roots will be looked for yet. *Bonnyas* are very beautiful now in a warm house.

H. C. R.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary from November 25th to December 2nd.

Baked up and watered leaves for making hot-beds, &c. A large quantity of manure are annually used for making hot-beds, consisting of vegetable refuse, which decayed at the end of a year or so make excellent compost, suitable for many purposes. At the present time I am using the compost from the old hot-beds for top-dressing and mulching Lilacs and other bulbs in herbaceous borders and elsewhere. Beds of Lily of the Valley and Christmas Roses are annually mulched with the old hot-beds, which are largely composed of tree-leaves. Made alterations in several parts of the grounds, including the opening up of a shrubbery by the removal of some old Laurels, Lilacs, &c., and the planting of a group of four of *Laburnum* and *Prunella* in green and variegated varieties. It is also partial to the introduction of *Burford* Laurels. They give a hint of green different to most evergreens, and when allowed to grow out form grand masses of foliage, and large plants flower very freely. In a suitable position, put out upon the turf, three plants of the Venetian Sunnah have been planted with the view of their forming a group of larger size than could be obtained from one plant. Another plant which is pretty for grouping, and for the margin of the turf, or even altogether on it, is the *Tamarisk*, commonly used for wind-breaking. It is sometimes wears a rusty tinge when the leaves are dying, it is a charming thing in summer, and is very light and elegant trained over a building. Though mostly considered a low-growing shrub, it will cover a wall 20 feet high in a reasonable time. Having much faith in the capabilities of Lamb's Prince Albert Apple, a considerable number have recently been planted. It is a good cropper, and comes into bearing early. No one can possibly do wrong in planting several trees either on the Crat or the Broad-green lawn, and the result from one of the last year's crop will, but not all favourable occasions, but lights are drawn off, so that the plants for some hours at a time may have full exposure. This helps the foliage and enables them to bear up under the close covering which will have to be given to many things should severe weather set in. There is no letter coming than dry Bracken, and if this is out in summer and struck it will be ready for use. Bracken cannot be had everywhere, and in such cases one might find bark upon dry straw, which might be used as thick, laid upon wooden frames and secured with tar, or by other means, covered with straw, and the plants used in the *Black* and *White* or *Bay* straw for covering Vines and other vegetables. They are cheap and fairly durable. When one has a good deal of Bracken, I like these even better than

straw. It is often a question of cost, the cheapest material having the preference. Covered Fig-trees on walls. Unlike most other fruit-trees, covering does not seem to have any ill-effect upon Figs, and if the roots are now in a good condition a crop is certain.

ROSES.

ROSE NOTES.

I HAVE been requested to name Roses suitable for various purposes so often during the present planting season, that the following notes may be of some service to many intending inquirers:—

ROSES FOR A WARM POSITION OR A SOUTH ASPECT.—Climbers: White and Yellow Bank-sims, the Austrian and Persian Briers, Fortune's Yellow, William Allen Richardson, Lamarque, Triomphe de Rennes, Céline Forestier, Sulfaterre, Cloth of Gold, Maréchal Niel, Climbing Niphetos, Climbing Devonensis, Madame Eugène Verdier, and Belle Lyonnaise. Dwarf growers: Comtesse de Natchille, Comtesse de Parisse, Niphetos, Souvenir d'Elise Varlot, Catherine Bernet, The Bride, Madame Polot, Rubens, Perle des Jardins, Marie Van Houtte, and Innocente Pirola (here figured).

FOR A MORE EXPOSED SITUATION the following climbers may be used, while, of course, the same

little value unless used to supply flowers a considerable time before the earliest varieties open upon walls outside; and they also need the slight protection of a pit or frame from the early part of November. This induces sap to rise and new roots to commence. Now, if the pruning is delayed too long the wounds "bleed"—i.e., exude sap—and not only do we lose a considerable amount of strength, but the points of young roots are also affected; they stop growth, simply because a severe check has been given to the rising sap. My readers will see what I mean more plainly if they will turn out a plant which has had a check from severe and late pruning; the points of roots turn brown, and often die. But when the pruning is done early we secure the full benefit from root growth, and all of its energies are devoted to the eyes remaining upon the plants. There is a great difference between early pruning of pot Roses and those in the open border. The former are pegged early, and can be protected from the injurious checks caused by late frosts, which the latter are often unmercifully subject to. An unchecked growth should be aimed at; even the latest batches of pot Roses will be much better if pruned now, because they will be stemily preparing themselves for quick growth when introduced to heat. P. U.

only they will not reach the same height as the others. Provide a good soil 18 inches deep for your Roses if you can, and set out own-root plants, and you will never regret it.—J. C. C.

4944.—**A bushy Ross, &c.**—I am afraid the aspect you describe will be against any Rose thriving with much satisfaction. You might try Gloire de Dijon for one, but this is not luscious, and would require a little pruning to keep it within the required bounds. The Japanese Roses are exceptionally hardy, but have only single flowers. However, they are produced in abundance, and are followed by very showy berries. Stanwell Perpetual is another variety which might answer your purpose, so might the strongest of the Scotch Roses; but you are not giving good Roses much chance in the position you mention.—P. U.

LIQUID-MANURE AND ITS ABUSE.

In the cultivation of plants and flowers liquid-mannure forms an inconsiderable element towards success or failure. No hard and fast rule can be laid down, but the application of this stimulant is of so much importance that I propose noting a few of its benefits and abuses. First of all, I would warn against the regular use of solutions of definite strength. Like the foolish plan of watering by rote, such as daily, bi-weekly, &c., one then either gives water when not needed, or else affords a much less supply than the plant requires. A hot day, or a cold, drying wind, will have considerable influence upon all plant life, and during such a time double and treble the amount of moisture is needed in comparison to a dull or wet period. If we water by rote, the two extremes so often fatal to plant life are reached. If of so much importance to apply ordinary water with this care, it becomes much more so when dealing with liquid-mannures. There are two points which should never be lost sight of—viz., not to give stimulants except when the plants are in full growth, and the soil in a semi-moist condition. Unless the roots of a plant are in such a state as to be able to assimilate this form of food quickly it has an injurious instead of beneficial effect. From this we can readily imagine the folly of applying liquid-mannure to weakly plants; and yet this is frequently done with the object of bringing them into full growth and health. Another grave error lies in affording solutions of too strong a nature; for better apply the same strength in two or more doses. Nor should a plant which has recently been fresh potted ever be watered with liquid-mannure. Until the food contained in the new soil has been almost exhausted, and the whole well permeated with fresh roots, such applications will only tend to make the compost stale and distasteful, instead of aiding the plant. A pot-bound plant, in growth, derives great aid and benefit from liquid-mannures of a rather weaker character than the amateur usually applies. The exact strength depends so much upon the class of manure used, as well as the subject treated, that no guide can be given in a general article of this description. For example, Arum Lilies and Cinerarias will benefit from much stronger and more frequent doses than would be safe or necessary for such slow-growing plants as Azaleas, Camellias, Palms, &c. We also find that many plants are much more partial to one kind of manure than another, but if a little care be taken in applying them weak, and when the roots are in a proper condition, almost all liquid-mannures are beneficial. There must be the necessity for extra food—viz., healthy growth, with its attendant hungry roots, otherwise this form of stimulant is decidedly injurious. P. U.



Rose "Innocente Pirola."

will also do well in a warmer position: Aimé Vibert, Miss Glegg, Gloire de Dijon, Rêve d'Or, Madame Bernet, Henriette de Beauveau, Emile Dupuy, Kaiserin Friedrich, L'Éclat, Madame Chancery, Chesnut Hybrid, Reine M, Henriette, Waltham Climber No. 3, Fulgenscent Blanc No. 2. Dwarf: Anna Olivier, Marie Van Houtte, Homère, Madame Lambert, Dr. Grill, Souvenir de la Mulmaison, the Rugosa or Japanese Roses, the White (B. Moreau) and crested Mosses, the Old Cabbage, Common China, Baron Job, Augustine Guinnoisseau, Souvenir d'un Ami, Madame Casin, Edith Gifford, and Ernest Metz. In addition to these we may name the following to be dark-coloured Hybrid Perpetuals as suitable for rather exposed places: General Jacqueminot, Abel Carrière, Countess of Oxford, Annie Wood, Dupuy Jamain, Duke of Edinburgh, Eugène Poiré, Fisher Holmes, Prince C. de Rohan, Charles Lefebvre, Suzanne Marie Rodocanachi, and Ulrich Brunner. A dozen hardy, light-coloured Perpetuals will be found in Mrs. John Laing, Boule de Neige, Business Rothschild, Elie Morel, Mercedes de Lyon, Marguerite de St. Amand, Madame Montet, Madame G. Luizez, Jeanne Dickson, Heinrich Schmittheis, Anna de Diesbach, and Her Majesty. —During the latter part of November it is a good plan to prune all pot Roses. When left later than this they are apt to take a considerable amount of

4931.—**Rosess for pegging down.**—"Rugosa" will get the best effect for a short time by using strong growers and pegging them down; but for a more constant supply of flowers I would strongly advise dwarfs of a more luscious habit being planted. Gabrielle Luizez and Gloire Lyonnaise, &c., give a fine bit of bloom once in the season, but seldom produce more than a solitary bloom or two during the remainder. General Jacqueminot, La France, Anna Olivier, Augustine Guinnoisseau and others of like character produce successional crops all through the summer and autumn. Plant the latter kinds about three feet apart each way; and those intended for pegging down, six feet apart. The latter produce long growths, and you need more space for them. In pegging down do not scruple to cross the shoots over one another if necessary to cover the ground; it will not be seen when foliage appears, and as they are cut away later on there is no harm done.—P. U.

Plant the plants 2 feet apart all round the bed, and 18 inches from the outside; then fill up the remaining space with the plants 2 feet 6 inches apart each way. This distance is, I may say, given for an ordinary soil, but 6 inches more may be safely given in what I may call a good Rose soil. If you are looking for effect, icky, a bed of dwarf plants will be the best. You will, however, get about three times the number of flowers from pegged-down growths.

4857.—**Destroying ants.**—You should endeavour to discover the nest—not a difficult matter—and over it place an inverted flower-pot. The ants will work into this pot, and then with a spade one can remove the whole affair and plunge into a pail of boiling water. Dressing the place with sulphur is sometimes efficacious, or laying about bits of sponge soaked with sugar. They soon find them out, having a strong liking for sweet things. This is the usual way of dealing with them in plant-houses.—C. T.

Fill a saucer one-quarter full of sweet oil, and place it near their hole. The ants will get into the oil, and not be able to get out again. J. C. C.

SOME GOOD HARDY LILIES.

It is advisable now that the hardiest Lilies should be planted at once in their permanent out-door quarters, and it is also a good time to luy them at a moderate expense, as many varieties reach this country in November from our principal Lily exporters, the Japanese. It seems wonderful to those who recollect how comparatively recently the *L. auratum* was first introduced into this country, to find them sold in hundreds and thousands of prices within the reach of everyone—even the humblest cottager. From my own experience of this very handsome Lily I should not care to recommend growing it extensively unless the person planting the bulbs be prepared in a few years, and quite likely in a shorter time, to find them becoming small by degrees and beautifully less, and then disappearing. The only reliable exception to this general deterioration of the *auratum* family is mainly confined to the varieties *platyphyllum* and *mercurium*. I do not know the exact difference between these varieties; I have bought them under both names, but they seem similar and are also satisfactory. Those I have longest in my possession, for some six years, and which never have deteriorated, I believe to be *platyphyllum*. To people to whom expense is no object I also recommend growing the variety *virginale* and the red-banded *L. a. rubro-vittatum*. *Virginalis* is a beautiful Lily, having a pale gold band and no spots; it is well named. Besides the *auratum* and its varieties, there are many other Lilies which grow well out-of-doors. To every one, *L. candidum*, the Madonna Lily, and *L. croceum* (the Orange Lily) are known, but everyone cannot grow them successfully, as *L. candidum* especially is most tantalising, growing freely and well in the gardens of cottagers, but with every apparent advantage doing very indifferently in many good gardens. I do not think that even experts have accounted satisfactorily for these vagaries; at all events, I have read numerous reasons and remedies given, and have tried the latter when mine have done badly, but cannot say with very good results. It grows where it likes. *Lilium chaldeanum* is one of our best known varieties, having been grown in this country for centuries, but it is not very frequently seen. Why this is I cannot understand, but it may be in part accounted for in the fact that it is not imported largely, as many other Lilies are. It is a very remarkable kind, its scarlet reflexed flowers showing most prominently amongst other flowers. I believe this Lily comes from the Grecian Archipelago, and its oriental magnificence of coloring is quite in keeping with



Flowers of Lilium Browni.

the surroundings of its native habitat. One of the hardiest as also one of the handsomest of Lilies is *L. Szovitzianum*, but it has a vile scent, and is, therefore, only hearable in the open. It is, however, exceedingly effective, and is an early variety; therefore, well worth cultivating. *L. testaceum* or *excelsum* is a strong and easily-grown variety. Its colour is very distinct, being, in fact, exactly what is named by some cultivators.

THE NANKERS LILY, which is a sort of light-yellow. The growth of *testaceum* is very similar to that of *candidum*, and these Lilies might easily be mistaken for the foliage and the

one for the other, but when *testaceum* arrives at the bud stage, and subsequently in blossom, there is a decided difference; the flower of *testaceum* when fully open is curled back somewhat like others of the Turk's-cap or Martagon varieties, to which group this Lily belongs. *Testaceum* and *candidum* flower about the same time. *L. Humboldti* is a fairly hardy grower, but I have found it requires a second year in the ground before it grows or flowers properly. It is of an orange colour, with black spots. Of the earliest Lilies I think the *L. Kramerii* to be the loveliest of all as regards its delicate colouring, and it has a most agreeable scent, but it is somewhat delicate, and very difficult to grow in or out-of-doors. Taking this latter fact into consideration, as also its price, as compared with the size and growth of the bulb, I can hardly commend it for general or popular cultivation. I do not believe, with every advantage of skill and careful cultivation, you can command success with this Lily. At one time I thought I had found out the secret, having been very successful, growing them with as many as seven flowers on a stem, the more usual number being from one to three or four; but out of some 150 bulbs I once possessed I have hardly six left, the reason for my loss being quite incomprehensible to me. Comment on any possible remedy is almost unnecessary. I may say, however, that I envy those who can grow *L. Kramerii* with anything like success, as there is a delicate refinement about it which few Lilies possess, the beauty of Lilies being more usually of a very pronounced type. *L. Browni* (see illustration) and its almost identical variety *Cochestori* are worth growing for their remarkable size and distinctive colour—creamy-yellow inside the trumpet and a brown tinge outside. They are handsome and effective in the Lily garden and not objectionable indoors, the scent being agreeable and not overpowering. It is an expensive bulb, but I think worth having and necessary in a good collection. Of the longiflorum species—one of our oldest kinds, having been imported about 1820—the original type and *Lilium Harrisii* are probably the best. In Bermuda these Lilies are grown by the hundred thousand. The Americans are great admirers of the *Bermuda Lily*. It is very effective in pots, and when you can grow longiflorum successfully out-of-doors it is a very desirable acquisition in the garden. I have found one rather common defect in the flower—the trumpet frequently, when developed, splits, and is of little use then for specimen table decoration, although, no doubt, it can be otherwise used effectively where faultless growth is not an absolute necessity. Of the later varieties, those which are most generally useful are *L. tigrinum splendens*, *L. speciosum rubrum* (variety *Melpomene*), and *L. speciosum album* (variety *Kraetzerei*). These three kinds of Lily, if planted in a fairly suitable position, will bloom till October, and *Kraetzerei* until late in October. I have quite recently (this being November 7th) cut a large number of flowering-stems of *L. speciosum Kraetzerei*, but have had to open most of the buds indoors. As they were planted in a somewhat shaded position in a clump of some 150 Lilies near my house they were unable to properly develop their flowers from want of morning sunshine and after the recent cold and frost, but in a sunny position they will properly develop and be satisfactory all the late autumn. These are but a few of the best Lilies which can be grown in most cases with the greatest ease and with marked success in the open. Remember to plant now before severe frosts overtake us. C.

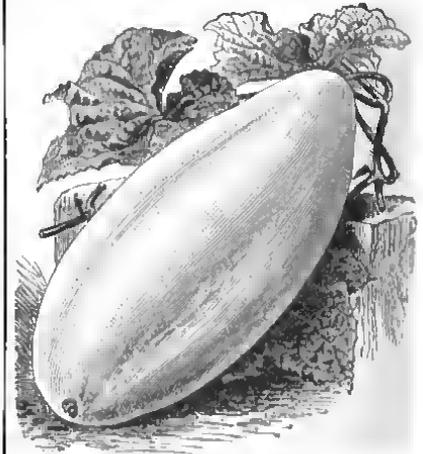
4904.—**Double and Single Violets.**—In a case like this prevention is better than cure—if the plants had been kept properly watered during the dry weather they would be free from insects now. I do not see that you can do more than syringe the under-sides of the leaves twice or three with some good insecticide, and keep the plants well supplied with water and weak liquid-manure. Yes; the double varieties seem to appreciate a very gentle artificial warmth or bottom-heat during the winter. —B. C. B.

4903.—**A garden hedge.**—Sundflowers, Hollyhocks, Dahlias, Delphiniums, *Bocconia cordata*, and *Polygonum capitatum*. Some or all of the above may be planted in a blend till the Laurel-hedge got up. —B. C. B.

THE KITCHEN GARDEN.

CUCUMBER "BONNEUIL LARGE WHITE."

In reply to "J. R.," "D. B.," and others, this Cucumber, which is almost always grown in the open air in France, is quite distinct from all other varieties. The fruit, instead of being almost regularly cylindrical, is ovoid in shape, swollen about the middle, and, moreover, very perceptibly flattened from end to end in three or four places, producing the same number of angles more or



Cucumber "Bonneuil Large White."

less rounded. It is very large, readily attaining the weight of 4½ pounds. Like the fruit of the Early White Cucumber, it is at first of a pale-green colour, and whitens gradually as it increases in size. This is the Cucumber which is most generally grown about Paris for the perfumers, who use large quantities of it in their manufactures.

4882.—**Treatment of Rhubarb.**—Rhubarb will grow under very rough treatment, either in good ground or bad, and even on the surface of the ground. But to cultivate it properly is in the following manner: The situation is not of very great consequence; still, if wanted early, a south or south-east border will be best. The ground should be dug to the depth of 18 inches or 2 feet, as much half rotten manure dug in the trench as the quality of the land may require; but you cannot very well overdo it, as this plant is a gross feeder. When thus prepared the roots can be planted about 3 feet or 4 feet apart every way. The present time is a very good time to make the plantation. But "M. C." has, I presume, an old bed of Rhubarb that he wishes to improve without moving the plants; if so, proceed in the following way: Dig out the soil between the roots, placing it on one side. Do not dig too near the roots to damage them too much, though they are not easily injured in this way. Fill up with rotten stable-manure, placing it well round the roots. Fill in soil, make all smooth, and proceed in the same way until finished. Then place a forkful of longer manure over each crown to preserve from frost. Though this plant is thoroughly hardy, still, I think a little protection in this way is useful, as it protects the young growth in the early spring. —J. BRYES, *Rugby*.

4843.—**Onions for show.**—Referring to "Lerner's" query in GARDENING, Nov. 4, it may be interesting to him and other amateurs to know how Onions are grown for show in this quarter. I sowed the seed in a hot-bed about the middle of January, and when the plants are 3 inches long I prick them off into 3-inch pots; grow them on in a temperature of about 60 degs. till the middle of March; then repot into 4½ pots, using good loam, leaf-mould, and sand, in about equal parts; place one cress in the bottom of each pot; fill the pot about one-fourth full of well-decomposed old stable-manure; remove the Onion from the 3-inch pot, and, without breaking the ball, place it in the centre of the 4½ one, potting rather firmly; grow the plants on in heat till the beginning of April;

then harrowed off, and plant out towards the end of the month. Prepare the bed you intend growing them in now by giving a good coat of manure, digging it in deeply; some warm lime may be given with advantage. Raise the bed 4 inches or 5 inches above the ground level, so as to keep it dry, for Onions are difficult to ripen sometimes in wet seasons. All through the season they will require attention as to watering with manure-water once a week, but this must be stopped when the first signs are seen of the top of the leaf blades are turning yellow, for they are then beginning to ripen, and if a second growth is started they will nearly all split, and grow on till winter. If they are to be exhibited dried you must lift them three weeks before the show, but if shown as grown they may be lifted on the show day. Cranston's Excelsior is the best of all the large show varieties. Ailsa Craig is also good, but is more apt to shunt. By this mode of culture I grow them 18 inches in circumference, and 2 lb. in weight each.—W. H. P., *Ayrshire*.

FORCING ASPARAGUS.

Throughout the winter months Asparagus is looked upon as a luxury amongst vegetables, and where a supply of this can be maintained in conjunction with other choice vegetables, the grower has little to fear as regards the supply of winter vegetables being appreciated. Rarely, however, is this the case, as a sufficiency of Asparagus roots suitable for forcing throughout the winter is more the exception than the rule. Some soils are naturally adapted to the growth of Asparagus, being of a well-drained, sandy, or gravelly description, a heavy manuring previous to sowing and planting, and a top-dressing of the same annually being all that is needed to bring the crowns to a condition suitable for forcing. It takes from three to four years to secure roots strong enough for forcing, and if more time was allowed it would be all the better. Sometimes I have forced younger roots, but these had been grown well on good soil. The reason, I believe, why this method of securing good roots of Asparagus for forcing is not generally carried out is the old-fashioned belief that expensive preparations are needed, such as raised beds and so forth. This is a very erroneous opinion, as good roots suitable for forcing may be produced with no more trouble than is bestowed upon Potatoes. Some people break up an old bed annually and prepare a new one, but this, I think, is not a very economic method. On heavy, wet land a raised bed would have to be made if the roots are to thrive as they should do, but on light land this is quite unnecessary.

Asparagus roots may be either forced on hot-beds or by the aid of hot water, or the two combined. Where forcing has to take place entirely on hot-beds, a well-made hot-bed is of the first importance, as a steady and lasting heat is what is necessary. At this season of the year tree-leaves are abundant, and these, mixed with the same bulk of stable-litter and formed into a bed, will retain the heat much better than when only manure is used. A bed at the least 4 feet in depth should be formed quite 6 inches larger all round than the frame when placed in position, so that a lining may be given to keep up the temperature. After being made up and any violent heat expended, a layer of light soil should be first placed over the manure, afterwards packing in the roots closely together. A covering of light soil sufficient to cover the crowns to the depth of 2 inches must also be put on. To think that a heavy dressing of soil is needed to cause blanching is an erroneous opinion. If blanched produce is needed, cover up the top of the frame so as to exclude light. I think blanching is quite an unnecessary proceeding, but if so desired it must be done. After the roots are packed in, a good watering with tepid water will be all that is necessary. A little ventilation at the back of the frame will be needed on all favourable occasions, and the frames should be closely matted up during frosty nights.

HEATED PITS where the body of the pit can be filled up with fermenting material are the most suitable. Many such pits are used for growing Cucumbers and Melons during the summer months. Such pits generally allow of a depth of 2 feet of well-worked fermenting material being placed firmly in the bottom. Even where

bottom-heat pipes are provided, it is better for the well-being of the roots to have a layer of litter spread over the brick rubble which is generally placed in heated pits where the bottom-heat is derived from hot water. In these heated pits a top temperature of 55 degs. to 60 degs. is ample, with a bottom-heat of 80 degs. A succession of roots put in about every three weeks would keep up the demand.

THE TURN OF THE YEAR, or from about the middle of February, forcing permanent beds has much to recommend it. This is by no means a new system, as I remember it being done quite twenty years ago by the late Mr. James when at Reildes, Isleworth. Each bed is 4 feet in width, with an alley between of 3 feet or 4 feet in depth and the same in width, the sides being bricked up and pigeon-holed. This space is for the reception of fermenting material, the top of the bed being covered with a length of low span-lights. The heat from the fermenting material raises the temperature of the bed and growth soon takes place, the lights being further covered with mats or litter at night, so as to assist in the retention of the heat. Where blanched produce is needed, the beds are kept closely covered up. A 3-inch flow pipe all around the bed also assists in keeping up the heat. It does not do to force these permanent beds too hard, or there would be danger of their being worn out. By careful forcing the beds will remain productive for

early Tomatoes for market on a small scale does not pay. If you can grow them in sufficient quantities that you can choose your own market you may do much better. Growers and the retailer in the neighbourhood in which I write all say that there is but a limited demand for ripe Tomatoes in or near a small country town until the price comes down to about 8d. per lb. At that price they do not pay for very much fire-heat, as at best it will take between four and five months to get ripe fruit, reckoning from the first of January. I find the beginning of the new year quite soon enough to sow the seed; even then the progress must be slow or the plants will be muchly drawn up.—J. C. C.

Seeds may be sown now for the earliest crop. A good selection of the Old Red takes a good deal of beating for the first crop. Some of the strains of Old Red produce nearly smooth fruit, and these cannot be improved upon for early work. Later on might come in Ham Green and Perfection. Carter's Market Favourite when true is a good variety.—E. H.

4910.—**Spring Onions.**—Celery forms a much better preparation for Onions than Carrick. To grow good Onions liberal treatment is necessary. With me the ground receives a heavy manuring as the land is being trenched in winter, and in February a further dressing of short manure is given, and just lightly turned in.—E. H.

HOUSE & WINDOW GARDENING.

HYACINTHS IN GLASSES.

This is an old-fashioned way of growing and flowering Hyacinths, but it is not nearly so much followed as it used to be, and yet it is a



Hyacinths in glasses.

very pleasant method. I have known very fine flowers produced in this way; but it is mainly a matter of attention. Neglect Hyacinths, and failure is certain. I have seen the bulbs started into growth in glasses, and grown on for a time until they had put forth good roots, and began to make an upward growth; then they were brought out of the cupboard and placed in a living-room, only to be neglected. Supposing the Hyacinth bulbs were put into glasses at the end of October or the beginning of November, and placed in a cool, dry closet or cellar, where they have been excluded from the light; they will by this time have put forth good roots, and partly filled the glasses with them. When brought out into the light the glasses should be examined to see if the water wants renewing, and if so, it should be emptied from the glass, which, together with the roots, should be well washed to thoroughly cleanse them from any impurities. Then put them back again and refill the glass with clear fresh water. I have always adopted the practice of putting some small pieces of charcoal into each glass, which help to keep the water sweet. The glasses may now have the full benefit of the light from a window, but on no account should they be left in the window on a frosty night if there is danger of the water becoming frozen. It is always safest to move the glasses back on to a sideboard or mantelpiece by night, replacing them in the window by day. The golden-shaped glass with a broad, flat, circular bottom is the best for growing Hyacinths. This cannot be

many years, the aim being to encourage a strong early growth by surface feeding and the application of liquid-manure. If it could be managed, a portion should be forced in alternate seasons. As the season advances little forcing is needed, the pits being filled up with leaves and the lids covered with a span-frame, so as to ensure the natural warmth, and as a protection from late frosts.

4949.—**A kitchen garden near a river.**—As the soil is sandy I did not anticipate that you will meet with any serious difficulty in growing Plum-trees on the woad fence, but I do not feel so confident about Pears. The common Green Gage, Gishorn's Page, Angell's Bartlett, Cox's Golden Drop, and Victoria are the sorts I should select, and this number will be sufficient to fill up the space. It would be a good plan if you could raise the border 18 inches high at the back; but to do this you would require a stone or brick wall that height above the present level for the board fence to rest on. I do not think you can do anything better than this to keep the roots out of the damp soil below; creating the bottom to keep the roots from going down is not a very expensive job, but too much so, I think, to be worth it. You may safely plant the trees up to the middle of March. I advise you, however, to order them at once for delivery at the proper time.—J. C. C.

Early Tomatoes for market. From my experience I should say that growing

From my experience I should say that growing

over, as was the fashion with the oil, tull, upright, chimney-shaped glass. Neat supports are sold with the glasses, by which means the inflorescence can always be kept in position. These glasses can be purchased cheaply in handsome patterns, and they are very useful in the summer and autumn months for cut flowers. Prizes used to be offered for Hyacinths grown in water, but it was seldom the real thing was obtained. The exhibitors almost invariably grew and flowered their Hyacinths in pots, and then shook them out of the soil, washed the roots clean, and placed them in the glasses a week or so before the date of the exhibition. R.

GOOD ROOM PLANTS FOR WINTER.

AMATEURS are always inquiring the names of a few good room and window plants, particularly for the winter, when flowering ones from a greenhouse seem to quickly fade. One reason of so many failures is that they are bought from barrows, and these plants are forced in heat to make them sell. They look in the perfection of health, but, so to say, possess no stamina, and the change from the hot-house to the dwelling-room is too great.

THE PARLOR PALM (*Aspidistra ltrida variegata*) is one of the best of all room plants, and stands first in my selection of the best twelve. The reason is that the leaves are leathery, and practically impervious to dust, hence the reason why those trees and shrubs with thick foliage succeed so well in towns and suburbs. Soft-leaved things get covered with soot, and Conifers, for instance, get choked to death. The *Aspidistra* is rather expensive, the plants being valued by the number of their leaves, each at 1s. Of course, after a certain number that is not so, but this is the usual way to price young plants; and the more distinct the variegation, so much the more the expense. The flowers are very curious, not attractive, and produced on the surface of the soil. Loam mixed with peat is a good soil, and provide a good drainage. After potting stand the plants in the greenhouse if possible to assist them to become more quickly established. A great fault with amateurs—or gardeners generally, for that matter—is constantly repotting their plants, which is not required. As a rule, in the case of such things as these, the less they are disturbed at the roots the better. A great check is imposed by this constant disturbance, and they never increase properly. As so frequently pointed out in GARDENING, it is essential to sponge the leaves frequently with tepid water to remove dust and dirt from the surface. Once a week at least this should be done.

INDIA-RUBBER PLANT (*Ficus elastica*), is the next best room plant for winter. It is not so useful nor so vigorous as the *Aspidistra*, as there is a certain objectionable stiffness about it, but it often thrives where it is impossible to grow flowers. A good loam and peat-soil and a moderate amount of drainage must be given. But the most important thing, as in the case of the *Aspidistra*, is to sponge the leaves at frequent intervals to remove dust and dirt. When the foliage begins to turn yellow a little soot-water will be beneficial, but there is really little attention required, simply not to overpot or repot too often, and water very carefully during the winter months.

THE OPHIOGLOSSUM is another good window or room plant, although usually kept in a greenhouse or conservatory. But it may be brought into the room, and its wealth of narrow green and creamy-white variegated leafage is very attractive, especially when set off by spikes of sapphire-blue flowers. It grows freely in an ordinary sunny soil, and when used in the greenhouse is very pleasing in a terra-cotta vase or window-box, so to say, on a greenhouse shelf.

THREE EXCELLENT FERNS for rooms are *Pteris cretica*, its variety *albo-linata*, and *P. tremula*. I do not think it is possible to get a more useful trio, all being so vigorous, and not like the majority of Ferns, averse to cultivation in rooms. They succeed in ordinary peaty soil, and greatly dislike an oversupply of water.

DRACENA INDIVISA is another useful plant hard to kill, and always fresh in aspect when the foliage is kept properly sponged, and to this small selection may be added the *Date Palm*, *Corypha australis*, *Crotonia robusta*, the Norfolk

Island Pine (*Araucaria excelsa*), very pretty when small and distinct in aspect, and the Sedge (*Cyperus alternifolius*) and its variegated variety, which requires more moisture than any of the other plants mentioned. It is graceful, free-growing, and pretty when stood on a small table so that its fanciful growth is in no way cramped. All the foregoing kinds I have grown for years in rooms, and during the winter especially they succeed better than anything else I have tried. F. P.

CAMPANULAS AS WINDOW PLANTS.

THESE will thrive well in pots and baskets, and make most excellent window plants. I saw during the past summer in some villages near the Norfolk coast most delightful groups of



Flowers of the White Peach-leaved Bell-Flower (*Campanula persicifolia alba*).

Campanulas flowering in great profusion in cottage and other windows. A notable kind was the one here figured, *C. persicifolia alba* and the type, and also *C. garganica*, *C. Barrolieri*, *C. isophylla alba*, and *C. fragilis*, extremely beautiful for a suspended basket. Those who have not tried *Campanulas* as window plants in pots and baskets should do so. The plants should be potted up early in spring. H. B.

FILLING WINDOW-BOXES.

DURING winter window-boxes may be made to play a much more important part in the decoration of the house than in summer, for the general bareness of the outlook makes the window-box then come out much more prominently. After trying all sorts of things, I am inclined to say that in our variable climate flowers are impossible if fully exposed to alternate freezing, thawing, and drenching with rain. Far better fill the boxes with really hardy foliage plants and shrubs, which will vary considerably in different localities. Here, by the seaside, there is nothing so effective as nice lush little plants of golden-leaved *Eonymus*, alternated with the dark-green form, or *Laurus tinus*, *Box*, or *Aucuba*, the soil being covered with *Stonerop* and bulbs of *Crocuses*, *Snowdrops*, or *Hyacinths*, placed in front of the shrubs to add colour in the spring. For variety, boxes may be filled with *Wallflowers*, *Veronicas*, *Forget-me-nots*, and *Pansies*, with bulbs in the foreground, and these will be very gay in spring, but are not so bright in winter; or bulbs alone may be used with excellent effect in spring, but are hard during mid-winter. I lately saw some boxes with the surface of soil covered with the freshest green turf, and under this bulbs were planted for spring display; in fact, window-boxes admit of a great variety of subjects being brought close under the eye of the owner. J. C., *Hants*.

Leaf-mould.—Queries respecting this valuable compost and its manufacture are frequently appearing in GARDENING, so that as the present is a most favourable time for its manufacture, I propose giving a few hints upon the process. Almost any tree-leaf will do, but those of the Oak and Beech are preferable. Quantities of these may be collected from the ditches and roadsides. If a little good loam can be obtained

and mixed among the leaves, so much the better. Another splendid mixture is road-scrappings, this often containing much horse manure as well as grit. Vegetable refuse, weeds, &c., may be kept separate if desired, but my own plan is to intermix all such things with a large quantity of leaves and road-sidings. If the whole be turned over occasionally, decomposition will be accelerated, while a little fresh lime, besides helping in this connection, also keeps the whole sweet, clean, and free from insect pests. In decayed vegetation we get plant food in the most perfect state for easy assimilation, and very few subjects can be grown in better or more suitable compost than the results of what I have briefly described.—P. U.

ORCHIDS.

ANSELLIA AFRICANA.

I AM in receipt of a nice truss of flowers from "Lincolnshire" of this fine old plant, and I am not surprised at the high terms in which it is spoken of, for I consider it one of the most beautiful Orchids for flowering at this season of the year. It also speaks well for the warmer kinds of Orchids, because the heat that is required to grow and to bloom this Orchid, is sufficient to grow nearly all the East Indian kinds. This plant was brought home to us here between fifty and sixty years ago, having been found in Fernando Po, in West Africa, and Dr. Lindley named it after its discoverer, Mr. Ansell, who was attached as botanist to the Niger Expedition, since which time, however, it has been found in various parts of the West African coast, and, indeed, I saw a nice dwarf kind having larger flowers than the type with Mr. Bull, of Chelsea, about two years ago flowering in the summer months, and although the plant did not look quite so gay then as it does at this season of the year, it was a very acceptable change. I do not know whether the plant was flowering at its normal season or if it should have bloomed more in accordance with the species which I now have under consideration. I am much obliged to the sender of this fine truss of bloom; it makes a grand ornament placed in water, and by cutting about an inch or a couple of inches off the stem every two or three days and renewing the water, it will continue to enliven my room for a long time; but I would remind the sender that although I heartily rejoice at his gift, I do not wish so to rob him of the beauties of his houses, and the little spray from the base of the spike bearing five flowers would have been ample for me to have determined the species, as well, indeed, as a large spike bearing thirty flowers which were well packed, not one of them being either bruised or injured in any way. This gentleman tells me that "he has recently changed his gardener, who took the lead in the management of his Orchids, and his new man does not appear to be so well up with them, for he called this plant a *Dendrobium*." Well, this remark tells somewhat against the employer, who should insist upon having every Orchid in his collection legibly and properly named; but with the plant in flower no one could mistake it for a *Dendrobium*, its sepals and petals being nearly equal, having a ground colour of yellow, with numerous cross bars of rich brownish-purple; the yellow lip is fringed in front; but I am not able to record any perfume, which detracts somewhat from its attraction, especially from the ladies' point of view. The plant is a strong grower, attaining some 3 feet or 4 feet or more in height, making stout, round bulbs, which bear towards the top numerous thin and strongly-ribbed, dark-green leaves, and from the point of the bulb from between the leaves the spikes appear bearing many flowers, which last a long time in full beauty. This is a plant which requires considerable space to grow it well, as it makes a great deal of root, and these roots are for the most part on the surface; therefore, the pan or pot should be well drained, and the soil used for it may be some good turfy brown peat, to which may be added a small portion of turfy loam and good leaf-mould, mixing with the whole some sharp silver sand. In the spring months, when the growth commences, it should be watered carefully; but as the bulbs lengthen a more copious supply may be given, and after flowering it may be kept somewhat dry; but, of course, at the present season, when it has its

blooms to support, it requires a good supply of moisture; but when these are past it may be moved into a cooler house, and have a less supply. I like to keep this plant in the East India house or a hot stove during its growing and blooming season, well exposed to the sun and light.

MATT. BRAMBLE.

CATTELEYA SPECIOSISSIMA.

From "G. Waterhouse" comes a flower of this Cattleya, but it is very poor both in size and colour. I have seen blossoms of this variety of C. labiata with fine large and broad petals which measured fully 8 inches across, with the lip very richly coloured. What then can I help saying to a flower of a poor washed-out colour which does not cover the measure at 6 inches? I do not say that mere size is the great desideratum in a good flower, but when one sees a flower of good size, with all the parts harmonising as to good colour and shape, then it is only rational that size will carry the sway. This plant is a variety of the now well-known labiata, but it grows, I should think, in a far warmer position than do most of the so-called forms, and the bulbs show it to be a very different plant to the rest of the varieties. The flowers are produced from these stems at various times, but always after the growth has been completed, and that accounts for my now receiving a flower. The plant is reputed to be a very shy flowerer; but this, I think, comes about only from mismanagement in its treatment of the variety; for if not grown in cool warmth, and the plants well exposed to the sun and light, so as to get the growths well ripened up, then I have seen them stand for years without ever producing a flower; but when treated right I have seen them produce flowers annually. This Cattleya has more varieties than any other of these labiata forms. Some people I know go in for calling this plant C. Lindleyana; but it appears doubtful if this is not another plant, so I will confine myself to the name by which it is known in English gardens.

MATT. BRAMBLE.

TRICHOPILOIA NOBILIS.

This plant some prefer to call Ptilonia nobilis, and others, P. fragrans nobilis, but under whatever name it is known it is a great beauty. This Orchid was introduced in the first place by M. Linden, of Brussels, who called it, if I do not mistake, P. fragrans grandiflora. "Peter Henderson" sends me a flower for its name, and "J. S." sends me at the same time the typical form of P. fragrans, stating it to be a white form of Trichopilia tortilis; but this is all a farce, for on looking at the spike sent I see that it has been two or three flowered, and this has been an erect spike, but the flowers had lost their fragrance, so that "J. S." may here take the name of his plant. The flower of "P. H." is, however, a very different affair, being both larger and stouter, and with a beautiful aroma. This is a plant well adapted to the wants and requirements of the amateur, for it is a beautiful species or variety, whichever you may like to call it, having pure white flowers, with a broad orange-coloured blotch in its eye, and having a fragrance resembling bitter Almonds. It is admirably adapted for a button-hole flower, and they last long in full beauty. Now, let me see what can be said for this plant; and the one feature that I can say is that it requires to be grown in the cool-house with the Orlontoglossum crispum and others that like cool treatment best, but yet they like more light than the majority of these plants do. They may be either grown in pots or baskets; but these must be well drained, and for soil use good peat and Sphagnum Moss. Water freely during this summer months, but more cautiously now and through the dull winter months.

MATT. BRAMBLE.

4942.—Gas-tar on hot-water pipes.—Scrape it all off at once and paint the pipes with lamp-black and oil.—E. H.

Callas in pots versus planted out.—Many different modes of culture are adopted with more or less successful results with these very popular plants, for they are very accommodating plants, and unless very badly done by do not fail to return good results. I have tried various plans, and have had the best success from plants put out in June and lifted in

September, especially when they were not required to flower very early in the season, for lifting and repotting, however carefully done, must check the roots, and, consequently, the top growth, and to get really fine plants, in comparatively small pots, I find that pot culture all the year round is decidedly the best. The plan now adopted is, as soon as the plants cease flowering and can be safely trusted out-of-doors, usually in the month of May or early in June, they are set out on a coal-ash bed, and do not get much water until the oldest leaves die down, when they are shaken out of their pots and all the offsets taken off, and the strong single crowns are repotted in 5-inch or 6-inch pots, using good rich loam enriched with quite rotten manure and sand. They are kept out-of-doors and carefully watered until September, when they are placed on light airy shelves near the glass, and get plenty of manure-water, and they push up very dwarf sturdy stems with leaves of the darkest green. By feeding liberally with liquid-manure, bloom quite equal in size may be obtained from plants in 5-inch pots to those in 7-inch or 8-inch without it, for Callas are such strong-rooting and gross-feeding plants that they will take any amount of rich food. The surface of the soil getting quite white with active roots, the flower-spikes are now pushing up strongly.

J. G., Hants.

TREES AND SHRUBS.

FLOWERING SHRUBS, ETC., FOR WALLS.

In reply to "Midlander," &c., amongst the most beautiful of these are the Clematises, and none are better than C. Jackmani (here illustrated), Honeyekles, and the White Jasmine and yellow winter-flowered variety are both of great value. Wistaria sinensis is very fine. Climbing



OUR READERS' ILLUSTRATIONS: Clematis Jackmani on a house wall. Engraved by GARDENING ILLUSTRATED from a photograph sent by Mr. Henry J. Fuller, The Village, Bexley, Kent.

Roses are indispensable. Cotoneasters do well, and also Escallonia macrantha, Aristolochia Siphon, and many of the Ivies, and, of course, the two Virginian Creepers (Ampelopsis), the older and best known one and Ampelopsis Veitchi, &c.

4936.—Unhealthy Weeping Ash-trees.—There are only two reasons that I know of that would account for the unsatisfactory condition of the trees. One is that the soil is too poor and too dry for the Ash; probably the ground is so full of the roots of other trees, if the soil is poor you had better remove it from

off the roots to a depth of 6 inches or more and from 3 feet to 6 feet away from the stem, and fill up the space with a mixture of good earth and rotten manure in equal parts. The other reason is that it is quite possible that the scion has not taken kindly to the stock. If that is so, whatever you may do to it will not benefit the tree in any way.—J. C. C.

OUTDOOR PLANTS.

BULBS PLANTED IN GRASS.

This is a good time for anyone desirous of trying this excellent plan of growing bulbs making a start, or the season will be lost. Many kinds of bulbs answer admirably; in fact, I never saw Snowdrops, Crocuses, and Daffodils in such fine condition as when grown in this way. The positions selected for bulbs should be where the Grass grows naturally rather thin, or where the partial shade of deciduous trees gives some shelter from rough gales of wind, but where they get the benefit of spring sunshine to call them early into bloom. Evergreen trees are too dense to plant under, but make good wind-screens, and recesses in shrubberies make good positions for trying this form of gardening. Snowdrops are such elastic and beautiful flowers that they are special favourites with many; they increase rapidly in the stiff soil of Kent, but here, on the south coast, they die away in a few years. Daffodils appear to thrive equally well anywhere; Bluebells are the same. Crocuses make a gorgeous display, if the birds would only leave their gay petals alone. Scilla sibirica is a little gem, and looks lovely on mossy banks or where the Primrose is at home, and in many a small garden there are waste corners overrun by fern and weeds that could be made quite beautiful by digging up the rubbish.

Plant the bulbs in good-sized clumps, then sow Grass seeds on the surface and await the result. If it does not fully justify your expectations, I, for one, shall be very much surprised.

J. GROOM, Gosport.

Hardy November flowers.—The outdoor garden need not be quite devoid of flowers during this month. If such hardy Violets as the Czar and the very large and fragrant Well-siana are well cultivated, they will begin to yield good blooms quite by the beginning of the month. The hardy Chrysanthemums are of the greatest value. They demand but little cultural

core, and in ordinary years they yield an abundance of bright blooms for cutting quite up to the close of the month. The old Cottage Pink, once very common here in Surrey, is a really good November flower. There is no hardier and more reliable Chrysanthemum for the open air than this. It is not generally known that quite a nice show of Pansies can be had during this time of year. I have now a tolerably large bed, the plants carrying an abundance of blooms almost as good as one generally has them in spring. Fourteen degrees of frost did not in the least mar their beauty. The seeds were sown in July and put out a few inches apart on good ground. *Jasminum nudiflorum*, the Naked-flowered Jasmine, is blooming with freedom, and the earliest of the Christmas Roses (*Helleborus maximus*) is already in flower.—BYLEET, Surrey.

4878.—**Outdoor plants.**—The greater proportion of hardy perennials may be transplanted now. It is indeed far better to do so at this time of year than to wait till spring, as the winter rains settle the soil round the roots, and most of them will begin to form new roots at once. They are thus better enabled to start strongly into growth the following spring, and are less liable to suffer from the effects of a dry season. Plants of hasty growth, such as dwarf Campanulas, the small mossy and ornamental Saxifrages, Primulas, &c., and fleshy-rooted things, such as *Lobelia fulgens*, *Alstroemerias*, &c., should not be planted until March. They must be well established to resist the cold and wet of the winter months.—J. C. B.

—It all depends upon what perennials you are going to plant. Such comparatively tender things as *Alstroemerias*, *Chelones*, *Pentstemons*, hardy *Orchids*, *Dielytra spectabilis*, *Lobelia fulgens* and its varieties, and such bulbs as *Anemone Belladonna*, should not be planted until the spring, nor, as it is now so late, *Carantinus*, which are best planted now in the spring. *Hylænum Lobelia*, like, for instance, the other things mentioned, often get much cut up by the frost or wet of winter, and are best taken up and planted in a cold frame. But the majority of things—*Delphiniums*, *Præcox Sunflowers*, and a host of other perennials I could name did space permit—may be planted now, or at any time during the winter when the weather is mild and the soil well worked. Plant firmly to prevent frosts injuring the newly-planted things, and if the beds or borders, as the case may be, want digging up, do this at once, and let the soil remain idle for a time, so that it may be thoroughly pulverised by the action of the weather. Read GARDENING carefully. You will get many hints from the replies to queries.—C. F.

4917.—**Japanese Anemonee.**—Now is an excellent time to plant these, and almost any portion of root will grow. They are not at all particular as regards soil, but like one of a rich nature best. "E. M. P." will find they need one season in which to become established before they show their full beauty and floriferousness. Recently I saw them doing remarkably well by the roadside, and I know of no flower which is less trouble when established. All they need being a slight mulching with rough manure during the early part of winter, and when their foliage is dead.—P. U.

—I consider the best time to plant these is just as growth is on the move in spring. They then get established at once, and if the crowns are strong enough they will flower the same season.—E. H.

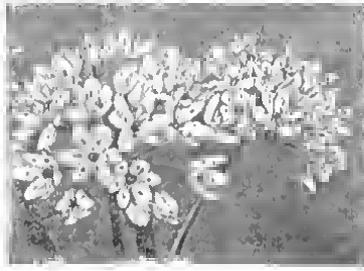
4920.—**Plants for a shady spot.**—A list of the best shrubs for a shady place was given recently. There are not a great many plants that will succeed in shade, even if it is partial. Ferns of many kinds may be grown, Foxgloves, the fine Crown Imperials (*Fritillaria imperialis*), *Trisesis* if the shade is not very dense, *Creeping Jenny*, a well-known creeping plant, *Creeping Primrose* in variety, *Solomon's Seal*, *Polygonum cuspidatum*, *Saxifrage*, *S. hypnoides*, and *S. umbrosa*, *Sedum spectabile*; *Globe-flowers*, provided the position is neither too dry nor too shady, the winter-flowering fragrant *Coltsfoot* (*Tussilago fragrans*), *Vincas* in variety, and of bulbs the Spanish Squills, *Scilla campocaulata* in particular. One may get a variety of these varying from white to rose, and the plants bloom with great freedom. They make noble chumps. The Snowflakes will succeed also in partial shade, but not if the soil is too dry.

knowing your garden. At any rate, Squills, *Solomon's Seal*, *Lily of the Valley*, and the other things mentioned may be planted.—C. F.

—The most likely things to succeed are *Mahonia Aquifolia*, *Vincas* in variety, *St. John's Wort* (*Hypericum calycinum*). These will make pretty foreground plants if planted in groups somewhat thickly. Then behind these might come Box, Hollies, Yews, and Laurels. These also will look better planted in groups. Something should be done to improve the soil before planting.—E. H.

NEGLECTED PLANTS (ALLIUMS).

THESE, as a rule, are a class of plants seldom recommended for their beauty, either for rock-work or for the flower-border; yet to banish them altogether would be to deprive our gardens of a few really handsome plants, and plants, too, that can always take care of themselves without



Flowers of *Allium neapolitanum*.

extending beyond their allotted space. Their smell, if bristled, is against them, and although the *Neapolitanum* (*A. neapolitanum*), the flowers of which are beautiful and fragrant, is sometimes used in bouquets, this objection to it is always more or less felt. It is, however, a pretty border plant, and also can be grown in pots, and thus get in bloom earlier, and in company with *A. verulenum*, *Moly*, *scorzouerifolium*, and *pedemontanum*, undoubtedly useful and decorative; the last especially, with its numerous purple, drooping, Tulip-like flowers, is good enough for pot culture. *A. giganteum*, a species well named, growing, as it does, even taller than the well-known *A. siculum*. Its leaves are flat, strap-shaped, and of a light glaucous-green, and the flowers, though small individually, are of a purplish colour and collected in countless numbers into a large globular head from 2 inches to 3 inches in diameter. This sort is a decided acquisition. D.

4940.—**Plants for a herbaceous border.**—Here is a selection of plants averaging about 2 feet in height. Amongst white-flowered perennials select the Double White *Achilles*, *Anemone japonica alba*, which is taller than 2 feet, but so beautiful that one must include it; *White Antirrhinum*, a lovely flower, *Campanula Bells*, *Eupatorium angustifolium album*, *Madonna Lily*, *White Lupine* (taller than 2 feet), *White Malva*, *White Perennial Phlox*, *Double Fair Maids of France* (*Ranunculus acemtifolius plenus*), *Trillium grandiflorum*, beautiful in late spring in a moist fairly shady spot, and the *White Scilla empannolata*. Of other things besides white one may choose *Aquilegia*, the dwarf *September blooming Astrer*, *A. aris* and *A. Anclasi* in particular, *Delphinium nudicaule*, bright scarlet, the *Lyre-flower* (*Dielytra spectabilis*), *Genm coecineum*, *Lilies* in variety, *Pyrethrum*, double and single, *Sedum spectabile*, *Campanula glomerata dahurica*, rich-purple flowers in close clusters; *Aionis vernalis*, yellow spring-flowering *Wallflowers*, *Coreopsis lanceolata*, *Erigeron speciosus*, *Rudbeckia speciosa*, *Globe-flowers* (*Trollius*), *Pansies*, and such things as *Polyanthuses*, *Auriculas*, etc. All the plants mentioned will grow well in ordinary borders, and are not expensive.—C. F.

4945.—**A garden in Surrey.**—Mulch the fruit-trees heavily with rich manure. What you really want is a few hundred loads of chyt to make the sand more fertile, and this would be as economical as manure if the chyt could be obtained within a reasonable distance. In the park, where some parts are very light, clay is carted there to dress the light soil. The

clay cannot be obtained, heavy manuring, and especially mulching, must be carried out. It is a difficult thing to make a sandy soil fertile; still, it can be done by perseverance. Salt will be found useful in hot summers.—E. H.

—I am afraid that you will not do much good with fruit-trees in your garden. The soil is too poor and too shallow for subjects that require a deep root-run, unless you remove the rock and fill up the space with fresh earth. You may do fairly well with Gooseberries, Currants, and Raspberries, if you give each plant plenty of room, and mulch the surface every winter with a thick layer of rotten manure. If you bear in mind when planting that as the roots cannot penetrate only to a certain depth, they must have an equivalent space in other directions, you may possibly get a fair return for any outlay you may make. Mulching with short Grass in the summer between all such crops as Peas, Beans, Onions, and Cauliflower, and thin sowing or planting, are operations that in such a case as this are indispensable to secure anything like success. Seeing that the sun sets on your garden all day you had better take out the rock to a depth of 8 inches or 1 foot for the flower-beds and borders, or they will not do much good in a dry summer.—J. C. C.

4899.—**Nitrate of soda on a lawn.**—I have many times written against the use of any of the artificial manures for restoring lawns in a bad condition, that I only wonder how it is we do not get more frequent complaints of their unsatisfactory character. This inquiry, however, refers to a case in which it has been used in excess, and the best thing for this correspondent to do is to take up the dead turf and replace it with fresh. For the benefit of the weak Grass which is left the lawn should have a dressing of short rotten manure or rich soil spread over it at once. Any money laid out on manure or soil as a top-dressing for lawns will do ten times more good than double the amount spent on any of the forcing manures. They are very well used in the summer as what I call a refresher for the Grass, but they do no permanent good. On special occasions, when I wanted the lawns to look particularly bright on a certain date, I have applied both guano and nitrate of soda ten days before the time, with the best results as a temporary improvement; but at the end of a month all trace of the benefit had passed away.—J. C. C.

—"Miss Eleanor Hughes," when applying nitrate of soda, was probably unaware of the power of the agent employed—namely, nitric acid. If used in excessive quantity and not properly distributed, nitrate would doubtless have the effect described, as, indeed, would ordinary manure properly used. Nitrate of soda should be employed upon Grass in quantities not exceeding 1½ cwt. to the acre, and the utmost care should be taken to secure even distribution. The nitrate should be passed through a sieve, and all lumps removed and broken up. For small lawns it is better to employ it in solution, at the rate of 1 oz. to 3 gallons of water, used once or twice weekly. The best time to apply nitrate is when growth begins in spring. To ensure good results it is essential that the soil be sufficiently rich in the other principal constituents of plant-food—namely, phosphoric acid and potash. This lady would do well to give the lawn at the present season a dressing at the rate of 3 cwt. superphosphate and 2 cwt. kainit per acre, and to apply in the spring 1 cwt. of nitrate per acre, mixed with double the bulk of fine, dry earth to secure even distribution. This will ensure a rich and rapid growth.—I. H.

4928.—**Sulphate of ammonia.**—This may be used more or less successfully for Potatoes, Cabbage, Cauliflowers, and all of the Brassica tribe, as well as for Turnips, Onions, Carrots, and other root-crops. Lettuces, Radishes, Turnips, Cucumbers, &c.; indeed, for almost everything, except Peas, Beans, and other leguminous plants, which are not benefited by nitrogenous manures—at least, not to the same extent as other subjects are, though, as a matter of fact, I have seen French Beans appreciably improved by a light dressing of ammonia. The best way to apply this powerful stimulant is in the form of a solution of the

strength of one ounce to each gallon of water, washing it off the leaves with pure water directly afterwards—that is, if it touches them. In rainy weather it may be sprinkled thinly and evenly between the plants at the rate of 2 lb. per rod, or 2 cwt. per acre.—B. C. R.

FERNS.

ADIANTUM CUNEATUM.

For every-day use, whether in pots or for cutting, it must be admitted that this fine old Fern is still in the front rank. With a good stock of plants it is always possible to have it in good condition. In many cases this Brazilian Maiden-hair is kept too warm. This is a great mistake, resulting in a general weakening of the plants, whilst the fronds will not last nearly so long when cut. For instance, during the summer I would much prefer to keep my plants in a cold frame rather than in a house with the least amount of warmth in the pipes. Again, a moderately dry atmosphere is far better than where it is moisture-laden. This latter state of things is congenial to rapid and free growth, but the fronds grow too large with correspondingly large pinnae, which are not in any sense desirable, whilst they do not last nearly so long when cut. They may look all very well upon the plant, but the plant thus grown will not bear a change to less congenial quarters, nor are the fronds of much use when cut. Shading, again, is a great mistake; it used to be a popular notion in some gardens that shading was really essential, whereas quite the opposite is the case, except in the very hottest weather. When

the shading is dispensed with, the growth is much harder, the pinnae finer, and the fronds, too, somewhat less in size, but supported upon foot-stalks considerably stouter. The paler colour, too, of the fronds when grown thoroughly well exposed is much more desirable for arranging with cut-flowers. The darker green, as seen upon plants grown in the shade is not nearly so effective; in fact, it is sometimes a difficulty to use it tastefully when of this shade of colour, bearing in mind also the larger pinnae. During at least six months of the year no fire-heat need be used, and only a very light shading when the heat of the sun is intense. A free circulation of air is indispensable towards securing a good enduring growth, whilst an abundant supply of water is needed when the plants are healthy, and the pots well filled with roots. When the latter is the case a weak solution of guano (Peruvian) in water will greatly assist the plants. This is often preferable to repotting twice in one season. In fact, potting is frequently carried too far. My best plants this past summer were those which were not potted last spring; these have continued in the best of health up to the present time. Overcrowding of the plants should be guarded against; they should now have all the light possible, not being overshadowed in the least by other things. Where there is any disposition to damp off in the case of the older fronds, these should be at once removed. Plants which have been yielding a good supply of fronds for cutting, and have become destitute of good material for the purpose should now be rested.

Water should largely be withdrawn from such plants; but little will be required between now and the end of the year. I would not hesitate to lay plants of this description upon their sides for a time, as long as they did not get excessively dry, particularly if they are still disposed to grow. It does not matter at all about the fronds dying off; in fact, a little later on they may be cut off entirely, thus clearing the plants of scale if there is any upon them. Take care that the plants whilst in this condition do not get any drip. When thus cut down, a spare shelf would suit them very well. These plants will make a capital stock to start early in the new year in a stove temperature, being meanwhile kept in a temperate house averaging about 50 degs. at night. When given an increase of about 10 degs. they will soon start into growth again, but the watering must be done cautiously until the fronds are well advanced. The best of these now in use will by that time be probably fairly well used up. These plants will then do with a rest, resting them later in the spring in less heat. Where there is a great

demand for cut fronds, it will be found better to have three batches in various stages rather than to rely upon two. In this way it is comparatively easy to have a ready supply. Plants that are now growing should have a fair amount of warmth, but not too much moisture.

A LIGHT AIRY HOUSE with a night temperature of from 55 degs. to 60 degs. will suit them well. The stove itself is rather too warm for them, even when they are growing freely; what some would term a cool stove would answer. Where there is a good quantity of growth still in hand, but fairly well hardened, a night temperature of 5 degs. less will suffice. In this way, by having plants in various stages, can successive supplies be mainly kept up. Young plants—i.e., seedlings, should be carefully looked after. These frequently come up in quantity; if not, it is an easy matter to sow the spores or to stand aside upon a moist bottom a plant bearing fertile fronds, and thus let the seedlings spring up spontaneously, which, after all, is as good a way as any. I prefer seedlings most decidedly to division of the old stools. They make much better plants, whilst if required whilst still in small pots, they are far more useful. When the older plants become exhausted and there is a sufficient stock of younger ones, it is better to throw them away or use them up for decorating. For general purposes, any pot beyond 8 inches or 9 inches diameter becomes too heavy and cumbersome. As to soil, I prefer all loam, with sand or road scrapings. When the loam needs modifying, a little leaf-soil or a small quantity of peat can be added, but not too much, as both tend to a strong growth. Potting is best done in the spring-time. A.

THE WALKING-LEAF FERNS (ANTIGRAMMAS).

In reply to several queries, all the plants mentioned in this part have not the properties of the old and well known North American Camp-



Frond of Antigramma Douglasi

tosorus (Antigramma) rhizophyllus, which spreads by rooting at the top of each frond where it forms a new plant, and from which it again sends out fronds which produce other plants. A few years ago, when I was with the late Messrs. Rollisson at Tooting,

ANTIGRAMMA RHIZOPHYLLA used to be imported in large numbers every year from Canada and found a ready sale. Many years ago, when I had charge of the outdoor ferneries at Hatchford Park, I had many a little colony of this plant, for it is quite hardy. The leaves which fall from the trees if allowed to remain will afford it ample protection through the winter months. The fronds of A. rhizophylla are simple, tapering to a point, where they are proliferous, and at the base are two large, ear-like lobes. The fronds are each about 9 inches long, and bright-green. It is found pretty freely in the United States and in Canada. Linnæus also gives Siberia as a locality for this species, but Hooker makes the Siberian plant a distinct species under the name of A. sibirica. It appears to differ in having a simple frond without any lobes at the base. The same form was found upon one occasion only by my friend Wilford in the Strait of Korea, on the Island of Taus Sima. Any reader who has a hardy fernery should plant this Antigramma in some light, turfy loam, choosing a nice shady place and keeping it tolerably damp.

A. DOUGLASSI (the subject of the illustration) is a somewhat rare plant in Brazil, and at present rare in cultivation. The fronds grow to some 10 inches in length and are about 4 inches broad. They are deep-green in colour, but non-viviparous at the point.

A. BRASILIENSIS has fronds each fully a foot long and about 2 inches or more wide.

Antigrammas are near to Scolopendrium or Hart's-tongue Ferns, but they have netted veins. The two last-named kinds require a stove temperature. G.

GOLD AND SILVER FERNS IN THE WINTER.

THERE is usually more harm done to these beautiful Ferns during the autumn and winter than during all the rest of the year put together. When the weather is dull, damp, and foggy the Gymnogrammas will require looking after closely to preserve them from decay. Where the fronds are large and the growth dense, this will be all the more likely to occur. Such plants want close watching; all the more so if they happen to be in a house that is predisposed to dampness. Those will be liable to suffer most which carry the heaviest coating of the farinose powder. For instance, G. peruviana argyrophylla is very apt to damp off a small piece here and there. This, in any case, should be stopped by frequent examination, removing the decaying pieces with a pair of Vine-scissors, either a knife or fingers not answering nearly so well. Old fronds turning yellow should be at once cut out entirely, and the others will be all the better preserved if drawn outwards in a careful manner. In houses which are somewhat flat, thus being liable to drip, a sharper watch still needs to be taken, or several fronds at once will be injured. When the weather is cold and frosty with an extraordinary amount of heat in the pipes, there is the liability of the plants getting too dry at the roots. They are extremely sensitive in this respect. In the case of some of the Adiantums and Aspleniums it does not so very much matter if they be dry at times. Not so in the case of the Gold and Silver Ferns. The plants should, if the previous culture has been good, have plenty of roots, the pots not out of proportion to their size for wintering. Then the plants will take a liberal supply of water with no risk of an overdose when looked after in a careful way. A good place for wintering Gold and Silver Ferns is the narrow shelf oftentimes to be found next the path on the front side in lean-to plant-houses; under these narrow shelves the pipes will in most cases be arranged. Thus the position is a dry one—drier, in fact, than most plants like it, but not too dry for those under notice. Of course, the watering in such a place is an all-important matter, but when so well within notice there is no real excuse for any omissions. The Gold and Silver Ferns, although they enjoy warmth, may also be used freely in the winter as decorative plants. They are not often seen shown in collections of table plants, but, all the same, it takes an exceedingly good plant of any other family to beat them, they are, in fact, the Gold or Silver variety, so very appropriate to the dinner-table when the latter is well laid-out. It is possible that stray

seedlings may in some cases be now of fairly good size; these might at once be lifted with as much soil as possible and potted, keeping to as small pots as possible. These young ones will then with the turn of days start off into growth more freely by a long way for this early attention. F.

4937.—**Ferns not thriving.**—Evidently you are keeping the Ferns far too warm, or perhaps the fronds are naturally of a pale-green colour. Some kinds are, but we suspect the cause is too much heat and insufficient ventilation. Well, if in a stove it will not be necessary to give air, or at least very little, and the stage and in between the pots must be kept well moistened. Perhaps they require repotting; if so, wait until the turn of the year. Ferns, when they get rather old, often look weakly. A conservatory should be ventilated on favourable occasions, but be careful not to admit keen draughts. You must exercise judgment.—C. T.

—Too much heat and moisture, with insufficient light and air, are the most probable causes of delicate growth and want of colour in the fronds, but at the same time it may arise from some other cause, such as the want of some principle in the soil or water. Ferns require more water, both at the root and in the atmosphere, than most other classes of plants, and especially so when grown in a high temperature, and the soil ought really never to become anything like dry at any time, but at the same time a sodden state of the soil, induced by frequently giving water before it is required, must be avoided. At this season Ferns need very little ventilation, and less than most things even in the summer-time. The roof ventilators may be opened a few inches for a couple of hours in the middle of mild or sunny and comparatively warm days, but beyond this nothing is required. A little soot dissolved in the water occasionally will often improve the health and colour of the plants considerably, and a weak solution of nitrate of soda once a month in the growing season is also very beneficial. The proper ventilation for a large conservatory depends chiefly upon its temperature and contents. If kept warm, no air is necessary, but if cool, give air freely on all mild days.—B. C. R.

4818.—**Ferns for a heated conservatory.**—*Pteris tremula* is a very handsome Fern that in time attains a large size, especially in a genial temperature, such as your conservatory would appear to afford. It may be either planted out or grown in large pots. *P. argyrea*, with variegated fronds, is also fine, and of free and large growth. Another Fern that would suit you for a similar position is *Nephrolepis exaltata*. If you want a greater variety among the large kinds better procure a few *Trochium*, and some *Palms*, such as the *Kentias*, *Latania borbonica*, etc., would also do well and afford a nice variety. Lower down you may place *Lomaria gibba*, *Asplenium cavatum*, *A. bulbiferum*, *A. lucidum*, *Phlebodium aureum*, *Pteris majur*, *P. serrulata* and others, and towards the base *Adiantum* of sorts, *Asplenium recumbens*, *A. monanthemum*, Mosses (*Selaginella*), etc. Of these last almost any of the greenhouse kinds would be suitable, such as *S. Kraussiana*, *S. Martensii* (large), with its variegated form *S. strobilifera*, etc. Tufts of the pretty drooping *Islepis gracilis* here and there would also have a nice effect. All the Ferns, etc., mentioned are such as thrive in the comparatively stinky atmosphere of London with ordinary care. Whatever you do, be careful to provide plenty of atmospheric moisture, without which nothing but failure can be expected.—B. C. R.

4886.—**Primula obconica.**—In GARDENING for November 11th, "Constant Reader" inquires if *Primula obconica* is a dangerous plant to grow? It may be mentioned that Dr. E. B. Peckey (*The Lancet*, 1893, page 103) records the fact that a market gardener was accustomed to grow this plant, and after recovering from an attack of erysipelas he was allowed to resume work in his greenhouse, whereupon the disease immediately reappeared. This having occurred several times, his medical attendant advised him to remain in the house for a longer period; but after resuming his work the disease broke out again, and in all there were six relapses. It was discovered that the patient was accustomed to

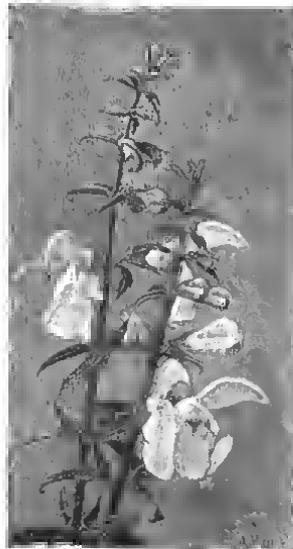
work the pale-lilac flowers of *Primula obconica* into funeral wreaths, and that this plant emitted a poisonous substance which caused the relapses of erysipelas already alluded to. Consequently, persons susceptible to erysipelas should avoid coming into contact with this plant.—J. H., 220.

"Give a dog a bad name and hang him," is an old saying, and, unlike some old saws, it contains a good deal of truth. As far as I know the plant is perfectly harmless. No one wants to eat it, and if the leaves were chewed and swallowed the result might not be pleasant; but I have handled the leaves and roots again and again, and repotted the plants at all seasons with the result that no inconvenience of any kind has resulted therefrom.—J. D. E.

INDOOR PLANTS.

SALVIAS INDOORS IN WINTER.

Few assisting in the embellishment of greenhouses and conservatories during winter and spring there are few things more showy and



Salvia patens.

useful than *Salvias*, especially such as *S. splendens* and its variety, *S. Branti*, and the old *S. Heeri*, which is by far the best and most effective for the spring. *S. splendens Branti* is a remarkably fine kind, and a great improvement on the one from which it originated, as it is of a better habit and has larger spikes of flower of a much lighter colour. The plants, too, have better foliage, being more serrated, thicker, and of a more glossy green. I find it also hardier, although to have it in perfection it needs more heat than is generally kept in an ordinary greenhouse. In a temperature ranging between 50 degs. and 55 degs. it sends up its long bold scarlet spikes of bloom in succession nearly the whole winter through. *S. Heeri*, on the other hand, is very impatient of artificial heat, which, if given for any length of time with a view to force it or bring it out before its season, is almost sure to spoil it, as not only do the plants grow up weak and spindly, but the blossoms come waxy and poor. In order to have

LARGE SPECIMENS it is necessary to put in cuttings in February or March; but as smaller plants are generally the most serviceable, a batch should be put in later, and another lot some time in July or August. These latter may be grown in 6-inch pots, and will be found to come in most useful for window decoration, a purpose for which they are specially adapted, as they look well in boxes associated with small white *Chrysanthemums*, *Carnations*, or *Eschscholias*, and produce a dense and pleasing effect. In a greenhouse placed between or near large plants of *Chrysanthemums*, *Salvia splendens* and *S. Branti* is particularly striking as it bright-

up the whole by the brilliancy of its colour. The way in which these *Salvias* should be managed is to pot them off singly when struck and keep them gently growing on in any frame or pit where they can have a little heat to the end of May, when they should be gradually hardened preparatory to exposure in the open air, where they always do best during summer, as there they grow short-jointed and stocky, and keep cleaner and healthier than under glass. To prevent the sun acting on the pots, it is advisable to have them plunged in some loam, open material, such as straw or leaves, which keep the roots cool. The most suitable soil to grow *Salvia* in is good fibry loam, and as they are gross feeders, they are benefited by frequent applications of liquid-manure, especially after they have filled their pots with roots, and are approaching the time when they begin to show bloom—a period when they cannot well have too much, if the

Liquid-manure is not strong and rank. By the middle or end of October it will be time to put the plants in a house or pit to protect them, for if left out in the cold after that they begin to lose their lower leaves, or get themselves discoloured, which detracts from the beauty of the plants when they get into bloom. Some grow their *Salvia* in the open ground instead of in pots, and it is a good plan in cases where large specimens are required, as, by having more root room, they attain a larger size, and can be taken up and potted early in the autumn. If this is done with care during a dull, showery time the plants sustain but little check, as they soon get hold of the fresh soil and become re-established.

SALVIA HEERI does best wintered in a cool, airy house, where it can have plenty of light, and, like its congeners *S. splendens Branti*, should be well fed with liquid-manure. The natural time for *S. Heeri* to flower is about the middle of March, and it continues to last in full beauty for quite a couple of months. As cuttings made from the young fresh growth are best, the old plants, when they have done blooming, should have their branches shortened, and be then placed somewhere in a gentle, moist heat to give them a start, when the young shoots may be taken off, and if put in the propagating box, in cutting pots, in the ordinary way, they soon strike root.

SALVIA PATENS (here figured) with its unrivalled blue blossoms, is a very desirable variety for pot culture; but to have this good late in autumn it is necessary to keep it pinched back, and grow it in a sunny position outdoors to get the growth hardy. Being tender-rooted, this kind may be kept from year to year, in the way in which *Dahlias* are kept, and may be increased either by division or cuttings. The only insects that nibble *Salvias* are green fly and red spider; the latter may easily be kept off by syringing in the evening after sunny days, and the former in the same way with weak Tobacco-juice, or fumigating the plants when placed under glass—a precautionary measure that should always be taken before they come into flower. S.

4918.—*Himantophyllum splendens.*

The *Himantophyllums* are not difficult to grow, and require a warm greenhouse. The plants must be grown on throughout the year, and in potting use a good, loamy soil. You should be able to succeed well with them if you have a warm greenhouse, but they are not much account unless this can be provided. There are many varieties of *Himantophyllum minimum*—*splendens* is one of them—and the various forms run through many shades of colour, from quite a yellowish-buff to deepest orange-scarlet. Individually the blooms are of use to cut, and a display is maintained over a long season.—C. T.

4938.—**Lilies in pots.**—*Lilium speciosum* variety *rosennu* will succeed either in pots or planted out; but the bulbs had better not be dried at all. Pot them as soon as they are taken off, and half-a-dozen offsets may be planted at once in 5-inch flower-pots. No offsets should be washed, but they had better not be taken off until they separate readily from the old bulbs, with plenty of good roots attached to them. When the bulbs are potted they should be plunged in Cocoa-nut fibre refuse or something of the kind to the rims. They will do out-of-

HEATING GLASS-HOUSES.

THE return of cutting winds and frosty nights brings the question of heating our glass-houses and pits prominently before our notice, for the very life of our plants depends on the right temperature being maintained. Now I have no hesitation in saying that it is by far the wisest course to grow only hardy or half-hardy plants in preference to those that need a higher temperature if we cannot give that temperature to them, for all our work in other ways will be lost, and plants grown in cold-houses that need warm ones will yield nothing but a crop of troubles and losses to the owner. There it, happily, no lack of varieties suited to cold, intermediate, or hot-houses, and, to prevent disappointments, make up your mind what classes of plants you will grow, and arrange your heating apparatus accordingly. After a good many years' experience of glass-houses and boilers I can safely say that to be on the safe side you must have a good reserve of heating power, for the following reasons: Boilers of many kinds are advertised to heat so many hundred feet of piping, and, as a rule, they will do so when first fixed up, with all the flues, chimney, &c., as clean as a pin; but to test them properly you want to personally stroke them for a month in the middle of winter, and you will find that, as a rule, too much is expected of a boiler, far in addition to the ordinary house or houses which it can warm easily one or two more are often added on that only need a little heat to keep the frost out. But it must be borne in mind that at this critical time a good deal more heat is needed in the pipes to keep the ordinary temperature up, and if you only warm the pipes in the extra houses the boiler must be driven at the highest pressure to meet the strain, and we all know that overdriving a boiler is very similar to overdriving a horse, and accidents are often the result. I would, therefore, strongly urge all who are having boilers fixed to have one capable of doing more work than is needed. Its cost will be more than saved by the safety of your stock of plants, and by the saving in fuel, for driving a small boiler wastes more fuel than letting the fire in a larger-sized one burn on gently. With the heat well assured you can close the dampers and keep the heat enclosed about the boiler, whereas with a smaller one, with a fierce draught to get the heat up, a great deal of the heat is driven up the chimney, and with the high price of coal it is a great saving to have a boiler large enough to burn coke, cinders, wood, or any combustible refuse. A small boiler must have only the best fuel if the maximum heat is maintained. I know some large forcing establishments where, by having extra large boilers and furnaces, they get plenty of heat from ashes collected by the scavengers. But the size of the fire insures plenty of heat, and if coal is going up to famine prices it will make growers for profit look to some less expensive fuel than coal, otherwise the cost of production will exceed the market value of some kinds of goods. Amateurs who frequently have inferior fuel to burn will do well to see that their boilers are large enough to allow of second-rate fuel being used—in fact, smoke-flues may possibly come into use again if coal goes up over £2 per ton.

JAMES GROOM, Gosport.

4881.—**Foliage Begonias.**—I presume you mean simply Begonias for their foliage alone, as some are very beautiful both for leaves and flowers. At my rate, I will name a few in both sections. The former class, known as the Rex, because resembling that well-known foliage Begonia, are very charming when planted out in a cool fernery, the silvery tone of their leaves being in strong relief to the green of the Fern-fronds. I should advise you to ask the nurseryman for a selection, or pick out those that please best. Arthur Mallet is the best of the darker-coloured varieties; but there is a host of a named sorts, La Candour, Colonel Demfer, Frederick Schneider, Unique, Adrian Schmidt, and Duchesse de Brabant. Two very fine winter-flowering Begonias, with foliage as rich and beautiful as the flowers, are Gloire de Secaux and President Bonnevilles, the former with bronzy leafage, very rich against the pink flowers, and the latter very dark also, the flower of a pink shade.—C. T.

4922.—“**Malmaison**” **Carnations.**—The varieties of Carnation Souvenir de la Malmaison are very liable to be attacked by a troublesome disease, which appears in the form of brown spots upon the leaves termed *Uromyces coryophyllinus*. The remedy for this disease is given in GARDENING, November 11th, page 500, which is to cut off the affected leaves and destroy the spores of the fungus before they have time to do any harm. There is another disease termed “spot” by gardeners, which appears on the leaves in the autumn. It generally develops in damp, close weather, when the plants are out in garden frames. The disease is most troublesome in damp, cold seasons. The name given to it by the specialists is *Ureda Dimthii*. The disease does not spread in a dry atmosphere. Pick off the diseased leaves, and place the plants in a greenhouse.—J. D. E.

4923.—**Aspidistras.**—The *Aspidistras* chiefly grown are *A. lurida* and *A. lurida variegata*. The variegated variety when grown in rich soil does sometimes turn green, and the best way to prevent it going back is to grow in peat and sand, using plenty of sand. *Aspidistras* are so easily managed that I have never heard anyone say they have failed with them. Some of the handsomest specimens I have seen have been grown entirely in rooms. The chief thing is to water carefully, avoiding at this season giving too much, and if the plants stand in an ornament-jug or jar, empty the water out every week, and the leaves must be kept free from dust by sponging or wiping with a soft cloth.—K. H.

—There are several kinds of *Aspidistra*, the best being *A. lurida*, introduced from China in 1822, and the variegated variety. A *punctata*, is also a Chinese species, introduced in 1824; *A. elatior*, came from Japan in 1835, and its variegated variety in the same year, and from the same country. But judging from your query I should think you want no others except *A. lurida* and its variegated variety. The best way to maintain the variegation of the plant is to keep the soil moderately poor. Rich composts and feeding produce gross green growth. Start with well marked specimens, and, as regards their winter management, the subject has been treated at length recently. Be careful about the watering, giving no more water than will keep the soil moderately moist, and on occasion of severe frost place the plants in the centre of the room to avoid any possible mishaps. Sponge the foliage regularly and carefully, using tepid water. This is most important, as during the winter the foliage gets coated with dust and dirt. These are the details to consider, and when followed make healthy plants.—C. T.

4923.—**Eucharis and Amaryllis.**—The *Eucharis* would do admirably in any house, the temperature of which is 55 degs. to 60 degs. at night, with an increase of 10 degs. more by day. They do not want a great deal of water in winter, but should not become very dry at the roots. The *Amaryllis* should now be resting in a greenhouse temperature, and be kept quite dry at the roots until the month of January, when it is usual to repot them and start them into growth again. The *Amaryllis* would be more liable to damp off from excess of water after repotting than *Eucharis*. I do not give them any water for three weeks at least after repotting, but the flower-pots are plunged in a heated bed and not in a very high temperature at first.—J. D. E.

4880.—**Fuchsias from seed.**—Raising *Fuchsias* from seed in the hope of getting new and improved varieties is tedious work. There is no actual difficulty in raising them; but it is rare, indeed, to get a variety that is better or distinct from the hundreds already in cultivation. Still, there is a distinct pleasure in raising seedling *Fuchsias*, as it may occur that you will get a really good novelty. In raising, study always the variety well, not merely as regards the colour of the flowers, but to see that the plant is of good habit of growth, free, and other points are taken into consideration. Thus, for instance, it is wise to cross a weakly growth with one of stronger habit. When the varieties are fertilised, keep them distinct—that is, do not mix them up with others. The berries must remain upon the plant until they are quite ripe, when gather them and remove each seed one by one from the pulp, the best way being to use a blunt

knife. Then lay out the seeds upon paper to dry, and when this is the case, wrap them up in paper and lay by in a drawer in a dry room. Early in the spring sow them in pots or shallow pans filled with light soil. Provide plenty of drainage, and cover the pans or pots, as the case may be, with paper until the seed has germinated. I may say that a warm corner of the greenhouse will suffice. When the seedlings are ready to handle, prick them off in pans or pots, and from thence, when of sufficient size, they may be transferred singly to small pots, using the same kind of soil as previously advised. There is considerable difference in the time the seedlings bloom, some being later, and some earlier than others.—C. T.

4920.—**Cinerarias in a cold frame.**—*Cinerarias* will do me good in a cold frame at this time of the year, as they will be injured by frosts. They do not like too much artificial heat either, enough only should be used to keep out the frost. Pour the water in at the sides of the pots, and it would be a grave error to water them over the leaves with a rose pot at this season. It would be well to get them out of the frame into a house that can be heated sufficiently.—J. D. E.

—*Cinerarias* are hardly safe in a cold-frame now. It is possible, of course, to keep out frost by using heavy coverings, but if there is room in any house where the frost can be kept out they ought to be taken there. Plants in a cold-pit should not be watered overhead now.—E. H.

4917.—**Vallota not flowering.**—As the plant flowered two seasons, and has not done so this year, the reason seems obvious. The plant, not having had any fresh soil to the roots for more than three years, should be repotted. Do it in the spring carefully, removing some of the offsets, but not disturbing the old bulb.—J. D. E.

—I expect the plant is starved. Repot it next April using rich sandy loam, with a little leaf-mould and peat. Water it freely during the summer, give it a good roasting in the sun in August, and it can scarcely fail to bloom well in September. Do not let the soil get very dry during the winter; being an evergreen it requires water, more or less, at all seasons, though not nearly so much in cold weather as hot.—R. C. U.

FRUIT.

PEAR “FLESH BEAUTY.”

IN reply to “R. B.,” “D. S.,” and others, this Pear, of which we give herewith an accurate illustration, is, so far as our experience goes, very good in a hot, sunny season, being large in size and excellent in shape, with a smooth, shining skin, which, when fully matured, is of a soft yellow colour, suffused with deep-red on the side next the sun. The flesh is white and melting and aromatic in flavour. It does best planted against a wall with a southern or western aspect, in which case it should be gathered the moment there is the slightest indication of maturity, as, if left to ripen on the trees, its season is soon over, and it is not nearly



Pear “Flesh Beauty.”

so good in flavour. It would be interesting and instructive to many if some of our Pear-growing readers would give us the benefit of their experience with regard to the merits and faults in question.

4898.—**Pruning a Vine.**—The pruning of a Grape-Vine is the simplest part of Grape culture in my opinion. Do not be in a hurry about pruning the Vine; let the leaves all fall first. If the house is used only for the Vine leave the ventilators open night and day to get the wood well ripened. I should defer pruning until after Christmas, though you can do it at any time after the leaves have fallen. Cut the

young growth back as close as you can to the main stem. Some gardeners cut back to the second eye; this plan in a few years produces large, ugly spurs. I prefer cutting closer, providing a good bold eye shows at the base, as one eye is quite enough. The main shoot shorten back to a few inches of old wood.—J. BOYES, Rugby.

4877.—**Moving Apple-trees, &c.**—"E." could not direct a better time than the present for moving fruit-trees of any kind. The ground is in such splendid condition, not too wet nor too dry. It works freely without battering the young roots. "E." need not trouble about the leaves, as these are ripe now and ready for falling, therefore the moving will not in any way injure the trees, and by moving them now they will soon get established for next year's work. Get the holes dug out large enough to receive the roots. Take up the trees with a good ball of soil attached and plant them the same depth as before. Well mulch with long manure or litter of some kind.—J. BOYES, Rugby.

4932.—**Fruit-trees in pots.**—The plants should be kept moderately wet at the roots in winter. Excessive dryness is very injurious; it causes all the tips of the active rootlets to shrivel considerably, and many of them die outright. The result is what anyone acquainted with plants and trees would expect—the blossoms open badly, and many of them drop off instead of setting, causing a partial or perhaps total failure of the crop. The house should be kept well aired, and if severe frost sets in the pots should be plunged up to or over the rims in Cocoa-nut-fibre refuse, or if this is not available some straw or loose litter may be placed over and around them to keep out the frost.—J. D. E.

—Keep the trees moderately moist. If permitted to get thus dry some, perhaps most, of the flower-buds would drop.—E. H.

4948.—**Early Strawberries.**—As you do not want to start the vinery early, nor yet to obtain very early fruit from the Strawberries, there is plenty of time yet to begin to think about forcing the latter. Supposing that you begin using fires in the vinery some time in February, or not later than the 1st of March, that will be soon enough to start the first batch of Strawberries, and the rest can be brought in, say fifty at a time, at intervals of ten days or a fortnight. They will do very well on the shelf mentioned—in fact, you could not have a better place for them; but the more sun they receive the better, especially while the fruit is swelling off and ripening. To do Strawberries justice, however, they should be kept in a temperature not exceeding 45 degs. at night until the blossoms expand; if there is an empty pit available it is a good plan to start them there, plunging the pits in a bed of leaves or tan. Otherwise you must do the best you can with them in the vinery, but keep up a moist atmosphere during the early stages particularly, or red-spider will be very troublesome. In the meantime the pots ought to be protected from severe frost in some way. With this subject they may all be accommodated on the floor of the vinery for the present, with plenty of air in mild weather, or they may be plunged in ashes in some sheltered spot, covering the tops with some dry litter, straw, or Fern, during sharp frosts.—B. C. R.

4941.—**Vine-roots going down.**—The only way to keep Vine-roots from going down is to provide plenty of suitable food on the surface, and not let the surface of the border get dry, especially during the growing season. Vine-roots will go down for moisture. During summer every Vine-border should have a mulch of manure on the surface. This is very important in the case of inside borders. It would have been better if the Vines had been lifted a little earlier. In the case of late Vines now, I should delay the lifting till February, as they will not remain dormant so long.—E. H.

4921.—**Pruning Fig-trees.**—Fig-trees should not be pruned at this season, but all the young fruits which are as large as Horse-Beans should be pulled off, as they will probably perish during the winter. The best time to prune Figs is in summer. The pruning should begin early in summer by thinning the young shoots when growing, and this thinning should be continued from time to time during the summer months, as required, as it is only by keeping the growth

thin that it can be ripened perfectly. Away from the south coast Fig-trees can scarcely be considered quite hardy, and it is quite wise before severe frost sets in to unvail the branches, draw them together, and cover with mats or straw. Uncover and retrain about the end of March or beginning of April, and any further pruning which may be required should be done. The spring is a good season for cutting out naked branches, with the view of filling in with young wood.—E. H.

4903.—**Gooseberry-caterpillar.**—This is a very good time of year to remove the soil from beneath Gooseberry bushes, but it is best to put the line on in the spring. The object of removing the earth is to take away the cocoons or chrysalides of the insect which are found in it about 2 inches below the surface. They are small dark oval bodies about half an inch long. They are sometimes found singly, but if a great number of caterpillars have attained their full growth on a bush, the cocoons may be found in considerable numbers more or less joined together. When the perfect insects are just leaving their cocoons and making their way to the surface, lime should be sprinkled on the ground, which will probably kill them before they have attained their purpose. The ground which has been removed should be burnt or spread out where poultry can scratch it over, and the fresh earth used to replace it should be taken from a part of the garden not likely to be infested with this insect. If this plan was carried out by everyone who grows Gooseberries, the Gooseberry Saw-fly, which is the parent of these Caterpillars, would soon be almost extinct.—G. S. S.

4926.—**Cape Gooseberry.**—This is the last plant that I should think of investing in for market purposes, if for no other reason than that not one in a hundred people know what it is. That being so it will take many years to educate the public taste for it, even if it possessed the required excellence as a dessert fruit, which I very much doubt; and looking at the unhappy condition of a plant in my cool greenhouse as I write, solely for the want of more warmth, it does not impress me as being a subject at all suitable for cultivation for commercial purposes, as it evidently wants a good heat to ripen the fruit at this time of year.—J. C. C.

—I should say the Cape Gooseberry will be of no use for market. Market people do not take kindly to innovations, and the plant is not a heavy cropper, especially in winter, and we are not likely to have cheap fuel again for some time. Seeds may be obtained from any of the large seed houses. It is known as *Physalis peruviana*.—E. H.

Pears on a clay soil.—With reference to the answer to Query 4788 on this subject (on p. 504), I am afraid that "J. D. E." is not quite correct in stating that Pears do well on a clay soil if worked on the Pear-stock. Now according to all my experience and knowledge of the subject the stock for Pears whenever the soil is of a heavy or clayey character is the Quince; for this reason, that being essentially a surface-rooting subject, it keeps the roots near the surface, within reach of the sun's warmth and fresh air. The roots of the Pear or natural stock strike deeper, and once they get down into the solid clay beneath the trees run away to grass woad, and produce little or no fruit, and this tendency can only be checked by frequent root-pruning, a thing very seldom necessary in dealing with plants on the Quince. My advice to "Reader" is to obtain plants of such hardy and productive kinds as the Hessele, or Hazel, Fertility, Beurré Clairgean, the Crawford, Beurré de Capiaumont, Autumn Bergamotte, etc., on the Quince, and plant them right on the surface, merely digging up the topsoil, and covering the roots with soil brought from elsewhere, or taken from between the rows. "E. H." (p. 487) is right when he says "Avoid deep planting; I would rather plant only a few inches deep and cover the roots with a mound of soil." We are on the stiffest of stiff clay here, and I have been similarly situated before, and know what can be done. Choose the right kinds (even the favourite Pituraston Duchess can be managed), and plant them as directed, and all will go well.—B. C. R.

4925.—**Pelargoniums, Tea Roses, &c., for market.**—"Mr. Fleming" is asking a somewhat indefinite question, as the amount of what necessary depends so entirely upon the

time he requires bloom, as well as the state of growth his plants may be in. Roses and Pelargoniums need widely different treatment; while the former enjoy the syringe—and cannot well be grown without—the latter would be quite ruined by its use. Early flowers need early starting, a steady growth being much the best, especially at first. As a slight guide I may advise a temperature of 55 degs. to 60 degs. until the early part of December, rising 10 degs. through that month, and with a slight increase early in the year.—P. U.

—A night temperature of 55 degs. will suit them very well. They will bear a little extra pushing on an emergency, but the temperature given will suffice. With air on the temperature may rise during the day when the sun shines to 70 degs. or more.—E. H.

4804.—**Mealy-bug on Tacsonia.**—If you cannot syringe your Tacsonia, the only way is to wash it, taking care to hold something under the part you are at work at to prevent any drips. If you want to get rid of this insect I should cut away as much of the plant as you can, and then go very carefully over the rest with a small, stiff brush and a sponge, and some soft-soap and Tobacco-water, or soft-soap and paraffin (one wineglassful of oil and double that quantity of soap to three gallons of water); dissolve the soap first in some hot water, and while hot stir in the oil, and then add the rest of the water. Be sure and keep the ingredients well mixed.—G. S. S.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the EDITOR of GARDENING, 37, Southampdon-street, Covent-garden, London. Letters on business should be sent to the Publishers. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as remain well classified, will be found in their respective departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising us, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, rules, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appeared.

4900.—**Making cider.**—Would someone kindly give a receipt for making cider?—C. B. C.

4901.—**Cucumber-plants for sale.**—Will anyone kindly tell me the best way to raise Cucumber-plants for sale?—J. B.

4902.—**Planting Gladioli.**—Will someone kindly tell me the best time of year for planting Gladioli, and what soil is best?—D. C.

4903.—**Storing Turnips.**—Will someone kindly tell me of the best way of storing Turnips in order to keep them from the frost?—FRONTINUS.

4904.—**Planting Raspberries.**—I should be glad of a few hints as to the best way of planting Raspberries, and the names of one or two of the best sorts grown?—THEOBALD.

4905.—**Potatoes in a house.**—I have a large well heated house planted with Potatoes, and shall be glad to learn particulars as to temperature and general management?—F. W. S.

4906.—**Wash for plants.**—Would "Arthur Elson" kindly tell me how much paraffin-oil and milk to put with one gallon of water to make a safe wash or dip for pot-plants?—REMBE.

4907.—**Worms on a lawn-tennis ground.**—I have a lawn tennis ground where the worms throw up the earth so much that the court is perfectly useless. Will anyone kindly tell me how to remedy this?—J. H. U.

4908.—**Rose W. A. Richardson.**—Will this Rose grow outside in a south-west exposure, and will it be safe to put it out now or keep it in an unheated house—south-east—exposure till the spring? Should it be cut back, and when?—J. W.

4909.—**Quick-growing Ivies.**—I should be obliged if someone will tell me the names of Ivies to grow quickly and cover an out-house well? Aspect, S.E., but in a shady corner and under trees. Also, when should they be planted?—J. F. M.

4910.—**Forcing Rhubarb for market.**—Will someone inform me what sort of houses or other buildings are used by market-growers for forcing early Rhubarb? Also, what mode of treatment is used by them for forcing and bleaching it?—ALPHA.

4911.—**Draining a garden.**—On starting a large vegetable garden on a clay soil in Essex I am anxious to obtain information how to set about drainage. Can it be accomplished by ordinary labour, or must it be by contract, and at what expense?—C. F.

4072.—Compost for Tomatoes.—I have some soil which is not very rich. I am thinking of mixing with it rotten-manure and leaf-mould. Is such a mixture good for Tomato-growing? Is leaf-mould good? Would it do for top-dressing during summer?—TOMATO.

4073.—An unheated frame.—I have a small unheated frame about 4 feet long and 2 feet 6 inches wide by 2 feet high? Would it be possible to grow a few of the hardier kinds of Orchids in it? If so, should be glad to know some of the best varieties?—LARRY'S STRAZZ.

4074.—Good loam.—Will someone tell me what is generally meant by "good loam," and where it is likely to be found in country places (Monmouthshire)? Would mole-hills mixed with leaf-mould and sand answer the same purpose for general potting compost?—CONSTANT READER.

4075.—Cacti from Mexico, &c.—Will someone kindly put me in the way of procuring Cacti and other plants from Mexico or Central America, but, if possible, not through dealers? I am in a complete fog how to set about it. Any information would be most welcome.—CERREYS.

4076.—Badly-coloured Beetroot.—My Beetroot when boiled is white and stringy. No frost has got at it, and has been taken out of the bed it grew in with great care, and no roots were broken. Variety, Whyte's Dark Red or Black. What is the cause of its being bad in colour?—IRELAND.

4077.—Vegetable-manure.—I have a quantity of vegetable-manure, the collection of 1892. It is nearly rotted into mould, short and crisp. In thought of dressing my herbaceous beds with it. Would someone please say if it is suitable, and whether I ought at once to dress the beds with it or wait till spring?—J. B.

4078.—Flies on fruit-trees.—I have Peach-trees on a south wall, which, when the sun is out, are completely covered with large flies. Will someone inform me how I can get rid of them without injuring the trees? Cannot the wall be washed with some preparation on a dull day when the flies are in the crevices?—HONORABLE.

4079.—Lime-trees.—Will anyone kindly give me replies to the following questions?—1, Which variety of lime-tree (Tilia) blooms most freely?—or are all varieties about equal in this respect? 2, At what age does this tree first come into bloom? 3, How should they be propagated, and during which season? Any other detailed particulars will be very acceptable.—T. B.

4080.—Marchal Niel Rose in a pot.—I have a Marchal Niel Rose in an 8-inch pot that was potted three months ago. It has made a very slight start as to growth, but is showing buds with it. The shoot, which is 2 feet high only, and is therefore a very small plant. Shall I leave the bud on or take it off, as I want the plant to grow quickly? It is in an unheated lean-to house, with a south-east exposure.—J. W.

4081.—Growing Clematis.—I am anxious to grow some autumn-blooming Clematis on short iron posts, and trained to form a continuous line from one to the other. What ought they to be trained on? The posts will be 2 1/2 feet high. I should be greatly obliged for any hints as to kinds and their treatment. I would rather have a few sorts of kinds than a great variety. There will be at least thirty-six posts, and would 12 feet apart be too far?—KATIE.

4082.—A lean-to greenhouse.—I have a lean-to greenhouse, being five feet 11 inches long, 4 feet 3 inches wide, 8 feet 6 inches to highest eaves. It is heated with a flue. Bad times prevent my keeping a regular man-servant, and I cannot attend to a fire myself. What I want to do is to keep heating-out plants alive during the winter. Will someone with experience kindly say if a petroleum-heating apparatus, would answer the purpose?—ESSEX RECTOR.

4083.—Plants in pots and boxes.—Having grown a few plants (Roses, Dahlias, Carnations, and Chrysanthemums) in pots and boxes, I shall be much obliged if anyone will kindly tell me the best thing to do with the soil, so that they may be ready for use in the spring. I will sell this year, as I asked a gardener and he told me that the same soil would not be any good to grow them in again; but as I do not want to get a fresh bit I shall be glad to have advice? I have got no convenience for gardening, only a back yard, which gets the sun till two o'clock, and an empty room to keep them in through the winter, and in which I have got my Chrysanthemums well out in bloom, and also three Roses out.—J. BARRY.

4084.—Temperature for a greenhouse.—In my greenhouse I have "Geraniums" and Coleuses, with Rhubarb forcing under the shelves. Will someone please tell me the average temperature at which to keep it to suit the above? It is heated with a "Tortoise" slow-combustion stove, size 1, capable of heating 1,900 cubic feet, as the cubic contents of my greenhouse do not exceed 400 feet. The heat during the night sometimes runs up to 50 degs. Is this injurious to the flowers, &c.? Are there any means without ventilating by which I could keep it cooler? Would a bucket of water stood on the stove be any good, or would the steam arising therefrom be more injurious than the heat?—J. FORSTER, Westbrook.

4085.—An Amateur Chrysanthemum grower.—I should be extremely obliged if someone would answer me through your journal the proper definition of an amateur Chrysanthemum grower? I am a member of an amateur society, but cannot agree with a good many of their ways; in fact, I find I cannot afford to compete with with a good many of the members for the prizes offered. At our show this month (at the close) I saw things which I have never seen done by any amateur—members going round the room saying, "Who will buy my last three blooms for threepence?" or, "Who will give me sixpence for a bunch?" shouting at the same time that "These look first prize" or "These look second prize." Of course, it may be all right in gardening, but in anything else the amateur is not allowed to do anything for money in connection with whatever he follows up as an amateur. I know that a good many of our members grow for sale; not only that, but it seems very paltry for a man to show a group of Chrysanthemums, and then, just before the close of the show, to chop off all the blooms and sell them. I should be much obliged if someone would give me an answer to this, as I wish to lay it before our society, and I know it is a thing that is very much abused?—BOY.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

4086.—Single Chrysanthemum (M. E.).—These are very pretty, but I cannot think that they will supersede the beautiful Japanese forms which were to be seen recently at the Aquarium, at Kingston, and other places.—J. J.

4087.—Planting Ranunculus (T. Shelton).—The best time for planting these is about the end of February, then you will have escaped the trying wintry weather; but should the weather not have broken then defer it a little longer.—O. J.

4088.—Oncidium grande (B. H.).—If your plants are not showing any spikes now you may depend upon it you will not have any more this year. You may help them by keeping them in the temperature you name and nearly dry, so that they may break strong and well in the coming spring.—M. B.

4089.—Oatleya labiata (B. H.).—This plant should not have stood still as to describe it as doing. You may assist it with a little more warmth; 55 degs. is rather low for this plant just yet—by this I mean the time when your queries were put into my hands. It may answer very well for a month after blooming if the growth has not started.—M. B.

4090.—Dendrobium Phalaenopsis.—H. H. sends me flowers of this species, which, although very beautiful, are, I think, but the typical form of the plant. They are never large enough, nor have they colour enough for the variety Schroderianum. I do not think this plant is found in North Australia, although I know we are told that is the fact.—M. B.

4091.—Planting Apple orchards (Surrey).—I should advise you to get the ground ready and plant this month some time. If you are resident in the County of Surrey you should have read the address given by Mr. Smees Gardiner upon this subject lately; but perhaps you both heard him and read it afterwards. I am glad so much attention is being paid to Apple-culture in the County of Surrey.—J. J.

4092.—American Cowslip (A. Nutt).—These are the varieties of *Hedysarum*. They are beautiful hardy plants, which should be a great deal more frequently grown than is the case. The best soil for them is good loam and peat, with a cool situation. You cannot do wrong in planting these, for if you grow nothing but varieties of the common D. Media they are all beautiful in the extreme.—J. J.

4093.—Sunflowers harvesting.—T. J. M. writes complaining that something has eaten all his Sunflower-seeds, and will serve him right say I, because if left out till the middle of October he ought not to have expected anything else. I was taught to cut the heads as soon as the seeds were turning black in the outside rows, and then we used every fine day to sun-dry, and then to dry and ripen, securing them from the birds.—J. J.

4094.—Lælia autumnalis (B. H.).—If your plants are not showing spikes of bloom by this time you need not expect them to do so; and you must keep them tolerably dry until the spring, when they may be set growing again. I cannot understand why the bulbs have not sent up any flower-spikes, because it is generally a free-flowering plant; but perhaps they are not strong enough to do so, and you are expending too much on them.—M. B.

4095.—Oatleya bicolor.—J. Ashken sends some flowers of this species; they are good fine coloured varieties. You may notice, in 2-blossom *Mosses* having a good deal of white to round the lip, which gives it the distinguishing character, the sepals and petals being of a bronzy-green. You should not let this plant suffer for want of water at any season of the year, for its thin stem-like bulbs, when once allowed to shrivel, are very difficult to bring round again.—M. B.

4096.—Odontoglossum (H. Piek).—I really cannot repeat what I have so recently said about potting these plants. If you are not a new subscriber you should have seen your question answered a few weeks ago. Perhaps you were on your holiday then and did not trouble to look back when it came home. If this was the case I would ask you to refer to the weeks when you were away, and if not in their search carefully through the mouths of October and September, where I think you will find it.—M. B.

4097.—Traveller's tree (J. B.).—This is a member of the Musaceæ, and is a native of Madagascar. It is sometimes called *Urania speciosa*, and at others *Ravenna madagascariensis*. It has large, two-ranked leaves, which are sheathing at the base, and it is this which gives rise to the vernacular name used by you, as the base of the leaf contains a quantity of a pure, cool water, with which the weary traveller may refresh himself. It is only fit for large and roomy stores, as the plants grow to a great size.—J. J.

4098.—Rosemary.—D. W. sends a sprig for a name; but in the shape of oil it was a plant to be found in nearly every garden, and it was one of my grandmother's special favourites. Its name is *Rosmarinus officinalis*, and it is strange how close the Continental people approach in its name; thus the German calls it *Rosmarin*, whilst the Italians say *Rosmarino*, and the French *Rosmarin*. The best and quickest way to get this plant is from seeds sown in spring, and do not forget to have plenty of it in your garden.—J. J.

4099.—Oncidium tigrinum (B. H.).—This plant now showing flower should be kept in the Cattleya-house. I saw some in full bloom a month ago in this situation, and the scent which they gave off was delightful. But unless these were wanted for a particular purpose they were put into the warmth too soon; when placed in the warmth from the colli-house they should have a fair amount of water, and this should continue after the flowering season. In the spring I like to remove the plant into the cold-house. It is really a very fine and gratefully-performed plant, worthy of everyone's attention.—M. B.

5000.—Lycaste costata (J. Shaw).—This is a plant which has laboured under a good deal of misunderstanding and confusion. Even Sir William Hooker figured the plant, calling it *L. Barringtonia grandiflora*. It is a very small size in its growth. The flowers, however, are very

much inferior in size to the well-known *L. Skinner*, being not more than about 4 inches across, whilst those of the last named plant have broader sepals, and these frequently measure double that size. *L. costata*'s flowers are wholly of a ivory-white, saving a faint tinge of yellow in the lip, which is fringed at the sides; it is fragrant after dark. This is your plant, and you will do well to keep it quite cool along with the *Odontoglossum*. Your potting material will answer thoroughly.—M. B.

5001.—Cymbidium Lowianum (J. Hedden).—This plant should be kept cool, not cold, and, if it were enough to flower, watch should be kept on it, for during the present month, or the next at latest, the spikes will begin to show, when the plant should be treated to a little more head and water. The flowers on these spikes will not have grown, and be ready for opening until about the month of February or the beginning of March, when they will flower and continue in beauty for two or three months, if they are shaded from the hot and scorching sun, and not allowed to stand in too moist an atmosphere; but you need not anticipate the plant to do the same next year. About every second year is often enough to expect such great displays from the same plant.—M. B.

5002.—Lycaste falling and becoming spotted.—B. Hatfield is much worried about his "Lycaste," and well he may be. He says—"They are going in large running sores." Well, what have you been giving them, "G. H. P."? You do not say; but in spite of your silence on this subject I must say what I think—that you have been for a long time giving them liquid-manure. I do not mean to accuse you of giving this in too heavy doses, but your plants appear to be breaking up and rotting in the next season, and I can really give you no cure. I should say that you will, in all probability, lose your plants; but you may take them out of the pots, cut all their roots off, and let them dry for a time. The truth will be best known to yourself, and if what I say is right you will do well to let liquid-manure feeding alone.—M. B.

5003.—Phalaenopsis amabilis.—J. P. sends me a flower of this plant for a name, saying it has ten more of its beautiful flowers on the spike. Well, I give the name under which I have known and grown it for years, and out of compliment to its first introducers and flowerers, which was Hugh Cuming, who sent the plant to the Messrs. Hollis, of Tottenham, in Surrey, and also flowers it in the next season; but *E. Aphrodite* is the name given to the plant by Reichenbach, as the name *amabilis*, given it by Kuntze, has been recognised as the plant which I already knew under the name of *grandiflora*. The *P. Aphrodite* then sent by "J. P.," must be kept in a temperature of about 55 degs. or 70 degs., and the atmosphere should be fairly moist. Shading at this season of the year is not necessary, saving when the sun shines with extra strength. The plants grow in their native country, about to the sea-coast, and under cultivation I have found them to be greatly benefited by watering the ground beneath them with salt and water.—M. B.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

Troubleshoot.—Apply to any good nurseryman.—W. Pinks.—We know of no book to help you. Send queries here.—H. S. B.—It is the fruit of the Potato, and not a Tomato.—J. P.—Apply to the makers of the boiler.—L. S. Hatfield.—We know of no such book.

NAMES OF PLANTS AND FRUITS.

Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C.

Names of plants.—North Lancashire.—Yes; the old "Cottage Pink" *Chrysanthemum Scoticum*, *Linnæa reticulata*.—Mrs. Battersby.—1, *Pernettya mucronata*; 2, Specimen insufficient.—J. C. P.—1, *Ailanthum grandiflorum*; 2, *Ophiopogon Japonicus variegatum*; 3, *Cyperus alternifolius*; 4, *Ailanthum cuneatum*; 5, Probably a *Zephyranthes*; 6, *Pileodium aureum*.

Naming fruit.—Readers who desire our help in naming fruit must bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its determination. We can only undertake to name four varieties at a time, and these only when the above directions are observed. Unpaid parcels will be refused. Any communication respecting plants or fruits should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C.

Name of fruit.—Essex Rector.—Apples: 1, *Blenheim Orange*; 2, Worcester Pearmain, most probably; 3, A finely coloured fruit of Yorkshire Beauty; 4, *Seck no Further*; Pears: 1, *Napoleon*; 2, *Autumn Crassane*; 3, *Beurré du Capitaine*. The Pears were poor specimens.—Lockwood.—Apple Yorkshire Beauty.—W. H. Woodcock.—Apple Royal Russet.—Sylvia.—Pears: 1, *Beurré d'Arcueil*; 2, *Winter Nellis*; 3, Not recognised. Apples: 4, *Carlisle Codlin*; 5, *Levy*; 6, *Pippin*; 6, *Hawthornden*.

BEES.

4828.—Management of Bees.—The adding of the two stocks of driven Bees last autumn would doubtless make the hive very strong, if done with care. When uniting is done judiciously, and the Bees settle down in peace, a strong hive is the result. But where this work is not properly done failure is too common, and the lives of hundred of Bees are sacrificed. Various causes may make a stock of Bees divide, sometimes an old queen worn out with her duties. Four brood again might cause

dwindling; this is almost certainly disease, known by the caps of the cells being smoky and perforated. The grubs rot in the cells, and have a foul smell. Parasites on Bees are very common in warm countries, and are brought into this country by importing foreign queens, commonly called the Bee-house, and is as large as a small flea, and lives by sucking the poor Bee. Our climate, say rule, does not suit them, and probably as the cold weather comes on they will disappear. Try a little sulphur about the size of a small nut on the floor-board, and put about 4 inches thick of Bruken-fronds on the top of the quilt; let the quilt be porous. Insects, as a rule, dislike Bruken-fronds. Try this; if it does not do any good, ask again, when a more drastic measure will be given. Never use a hive with fixed frames; always have the frames movable, and easy to manipulate. I trust you will have better luck. We have had a good season in East Yorkshire. I hope, Mr. Editor, we shall have some good articles on Bee-keeping this winter. Many Bee-keepers might give their experience of the past season.—GERRIE.

NEW PHOTOGRAPHIC COMPETITION FOR 1893

Owing to the early date at which our prizes were announced to be sent in this year there was not time to properly take many kinds of outdoor fruits, flowers, and vegetables; therefore we offer further prizes for those things, to be competed for during the present year; allowing till the end of November for the work.

Class I.—FLOWERING PLANTS.—A prize of FIVE GUINEAS to the sender of the best collection of photographs of flowering plants grown in the open air or under glass. This series may include flowering trees and shrubs of all sorts.

Class II.—BEST FRUITED FRUITS.—A prize of FIVE GUINEAS for the best collection of photographs of any of our good garden fruits: Grapes, Peaches, Apples, Pears, Plums, or any other fruit grown in Britain. Fruits should not be provided in dishes if good and clear photographs are sought.

Class III.—BEST VEGETABLES.—A prize of FIVE GUINEAS for the best collection of photographs of best garden vegetables. The object of this is to get fair representations of the finest garden vegetables under the old genuine names. We do not want to exclude real novelties when they are such. In all cases the name of the variety should be written on the back of the photograph.

Class IV.—AUTUMN FLOWERS AND LEAVES.—A prize of FIVE GUINEAS will be given for the best series of photographs of autumn flowers and leaves in the house in a neat style for vase, table, or other kind of indoor decoration.

WHAT TO AVOID.—Cut flowers or plants should not be arranged in vases with paths run on them. Backgrounds should be plain, so as not to come into competition with the subject flowers. Pictures of men or women, hiccups, water-pipes, rakes, hoes, rollers, and other implements, iron railings, wires, or iron supports of any kind, labels, and all like objects should be omitted. Dwarf flowers are ineffective when taken directly from above. The camera should be brought low down for such. All photographs should be mounted singly, and not several on a card. The photographs should not be less in size than 5 inches by 3 inches. The following are the rules to be observed by all competitors:—

In any of the departments, if no collection of sufficient merit be sent in, no prize will be awarded. All competitors not winning a prize will for each photograph chosen receive the sum of half-a-guinea.

FIRST.—The photographs may be of objects in the possession of either the sender or others; but the names whence they are obtained must be stated, and those sent the copy right of which is open to question. There is no limit as to number, and no fee to pay. The Editor is to have the right of engraving and publishing any of the chosen photographs. The photographs may be printed on any good paper that shows the subjects clearly; but those on albumenized paper are preferred for engraving.

SECOND.—The name and address of the sender, together with the name and description of the objects shown, should be plainly written in ink on the back of each photograph. This is very important.

THIRD.—All communications relating to the competition must be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C., and the class for which the photographs are intended should be marked in the parcel, which must also be labelled "Photographic Competition." All competitors sending their photographs returned, if not successful, must enclose postage stamps of sufficient value for their postage.

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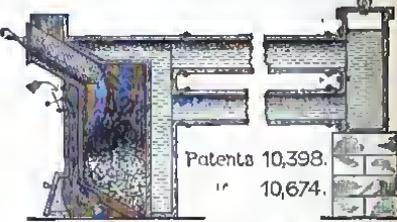
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GARDENING ILLUSTRATED.

No. 769.—Vol. XV.

Founded by W. Robinson, Author of "The English Flower Garden."

DECEMBER 2, 1893.

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HARDY PLANTS IN POTS.

MANY kinds of hardy plants, such as Auriculas, Ferns, &c., are grown in pots, and at this time of year it is a debatable point with many as to whether they need any protection or not? It is quite true that the same varieties in the open ground do not get, or appear to need, any protection other than that supplied by Nature; but plants in pots are in a very different position to plants rooted in the soil, which get considerable protection to their roots by striking down deep into the earth, while those in pots get frozen right through with one night's frost, and are encased in ice as long as the frost lasts. For this reason I always place all hardy plants in pots in cold frames, or else bury them in coal-ashes or leaves, packing them closely together, and shaking litter over them if the frost proves very severe. Strawberries, when grown in pots, are often ruined by being fully exposed to the action of frost, to say nothing of the breakage of pots it entails, and if cold frames or cold-houses are not available, plunging is absolutely necessary. It is not advisable to let any kind of hardy plant get dry at the roots, for it is unnatural and harmful, the roots being more or less active all the year round; but they should not be over-watered, as the drying process is very slow when the pots are excluded from the atmosphere, and if watered when packed away may be safely left for a month, and as they only need protection of glass in severe weather I pull the lights right off in mild, showery weather, which saves watering at the same time. Coal-ashes, Cocoa-nut-fibre, and leaves are excellent protectors, but, failing these, the pots may be plunged to the rim in garden soil.

J. G., *Hants.*

HERBACEOUS CLEMATIS.

CLEMATIS DAVIDIANA, of which a cut appears in GARDENING, Oct. 28, page 479, is not as much cultivated as it deserves to be, nor is it as tender as generally, but erroneously, regarded. It is a special favourite of mine, and both in the South and East of England I have found it quite hardy without the slightest protection when planted close against the foot of a wall. The note that accompanies the cut above referred to quite understates its merits. From the time the shoots appear above ground in spring its leafage attracts notice. The flowers appear in July, but they last for quite two months. They resemble Hyacinth bells, are of a lovely shade of pale-blue, and are clustered together very thickly, opening in long succession. Last, but far from least, they have a delicate and delicious fragrance. Its scent was even noticed in the rooms of a house where a fine plant grew and flowered in one of the terrace borders under the window. This brings me to the suggestion I want to make, and that is the value of this and other herbaceous Clematis for permanently beautifying window borders or beds such as are often seen under windows close against the walls of the house. In such places no fear need be entertained as to the hardiness of this Clematis over the greater part of England,

and even the trauken of covering the crown with ashes or Bracken is a mere detail that none would grudge performing if they had once seen and enjoyed the beauty of this species. I often see such borders as I have above alluded to filled with the poor, feeble, tender things that have no associations, no fragrance, and do not appeal to cultured or refined tastes. It is infinitely better to have plants of fine character, permanent endurance, and fragrant with sweet odours, clustering at the base of the house, loading the air with sweetness, and one of the best of these is Clematis Davidiana. Then there is another fine herbaceous species, the Bell-flowered Clematis (*C. campaniflora*), an old plant introduced from Portugal early in the present century, but now so neglected that I do not know where it can be obtained. It is a truly lovely species, perfectly hardy, with large bell-shaped purplish-white flowers, *C. recta*, also called *crecta*, in consequence of its erect habit, is another interesting species. It grows about a yard high, has simple pinnate leaves, and bears dense clusters of white, sweet-scented flowers. *C. integrifolia* is another kind worth rescuing from comparative obscurity. It has large, entire, oval-shaped, smooth green leaves, grows about 2 feet high, and has lino flowers, the petals quite thick and fleshy. Lastly, there is *C. tubulosa*, which is very like *C. Davidiana* in flower, but differs somewhat in its leafage. Both are natives of China, *tubulosa* having been introduced in 1845, and *Davidiana* nearly twenty years later. These things, associated with hardy Fuchsias, Sweet Verbenas, Myrtles where they thrive, Lavender, Rosemary, Balm of Gilead, &c., would adorn window-borders in a delightful way, and with spring bulbs among them keep them gay and sweet for the greater part of the year, being away with the necessity of annual planting, from which only tolerable results are obtained. A. H.

4886.—**Primula obconica**.—This plant is certainly dangerous to grow unless you know that all who are likely to come into contact with it will not suffer from doing so. To many, to perhaps most persons, this plant is perfectly harmless, but to others merely touching it causes an acute attack of Nettle-rash or eczema, with considerable redness of the skin and intense itching. Unlike the stinging of a Nettle, which is apparent at the moment of contact, the unpleasant effects caused by touching this Primula are not felt until some time afterwards, and then instead of subsiding in the course of a few hours, may remain for some days. Many persons have been made quite ill by frequently handling this plant, and not being aware of its obnoxious property. Its poisonous qualities no doubt exist in the glands at the base of the hairs on the leaves and flower-stems, which, like those of the Stinging Nettle, contain a poisonous fluid. *Primula obconica* is a plant which is well worth growing were it not for this very undesirable trait in its character.—G. S. S.

4977.—**Vegetable manure**.—"I. B." has got one of the most useful composts for the herbaceous border he could possibly have. It will cure every subject which needs a mulch, and

cannot be applied at a better time than the present. Such subjects as Delphiniums, Phloxes, Aconites japonica, *Michauxias*, Daisies, Ranunculus, &c., will all thrive under such treatment. I would advise that hoists over the crowns of his plants with a little fresh lino before applying the soil. This will kill slugs that may be present, and can harm none of the herbaceous plants. If the beds are dressed now a considerable amount of protection will be afforded, while the winter frost will improve the soil and be kept from harming the plants at the same time.—L. U.

—If the material you refer to is that from vegetables only, you cannot have a better stimulant for your herbaceous beds; but if it is composed of the refuse of the garden generally, including weeds in a seedling state, you will regret using it for that purpose, as you will be sure to get a plentiful crop of weeds from it next year. When I do not clear the rubbish of the garden, I always use it amongst the vegetable crops where the hoe will not do any damage when cutting up the weeds as they appear. Of course, it is well ratted before being used.—J. C. C.

—This should be a good compost for herbaceous borders or any other purpose, and might be used at once.—E. H.

4928.—**Sulphate of ammonia**.—I have found this a very useful manure for Chrysanthemums. Under the following treatment I have been very successful with these beautiful flowers this season. When potted off into flowering pots, I fed them twice weekly with soft-water, not too strong, keeping them well watered all through the summer. When buds began to form I changed the food, and gave a large teaspoonful of Ichaboe guano to each pot once a week, watering well over this; then when buds showed signs of opening, I dissolved a large tablespoonful of sulphate of ammonia in 4 gallons of water, and gave the plants a thorough good watering with this fluid once a week; this improves size and colour of blooms. Do not give alone too often, as it is very strong and might spoil the plants. With plenty of sun to ripen the wood, and careful fanning of the above, anyone may grow Chrysanthemums which will be a credit to themselves and the delight of all who see them. My Chrysanthemum-house is almost on, and is quite visible from the street, and hundreds of people daily stop to admire the beautiful show of these flowers.—LAWRENCE.

4967.—**Worms on a tennis-lawn**.—Perhaps the ground is very badly drained, and, if so, now is the time to rectify such mistakes. You might apply, however, a dressing composed of, say, 5 lb. of newly-slaked lime to 15 gallons of water. This must be well stirred frequently, and allowed to remain until it gets quite clear. Carefully draw it off, leaving the sediment remaining, and apply with a rused watering-pot over the surface of the lawn. A damp day should be chosen—not, of course, in frosty weather. It is very easy to sweep up the worms when they come to the surface.—C. T.

Tulip Picotee.—This is a beautiful variety. The flowers are of a most magnificent with rose, a most delicate and pretty colour. It is not stiff, and may be used for decorations.—E. O.

GARDEN WORK.

Conservatory.

The Chrysanthemum shows are now over-so far, at least, as public competitions are concerned; and judging from the character of the seedlings which are in the possession of Mr. Jones, of the Kite Croft Nursery, and others, we are destined to have still larger blooms in the future than we have at present. How far this will go it is impossible yet to say, but it is absolutely necessary for exhibitors, at any rate—to buy the big flowered varieties if they are to keep in the front rank. The tendency is to give in smaller pots, resting on good soil, firm potting, and judicious feeding to enable the plants to carry a couple of fine blooms to perfection. These dark, sturdy plants, curving, say, from two to four blooms, are more useful to the small grower, who cannot build lofty houses, than tall plants which he cannot protect. With this question intimately connected the right time for taking the cuttings. Many good growers act on this simple principle of taking a good cutting when they could get it, any time between the 1st of December and February, and still carrying out the same principle when the plants are cut down in May or June. The strongest cuttings are selected and converted into strong, sturdy plants, which, if permitted only to carry one bloom, will grow to a larger size, and be valuable for grouping in the conservatory, or to move into the rooms. The monster plants, 3 feet or 2 feet in height, are of much use for decorative work. There is a good deal to be done and learnt about the Chrysanthemum and its culture yet. We are now having a spell of whitey weather, and the temperature in glass-houses may be dropped a little below the customary degree, as in stormy weather very little air can be given. If the thermometer in the conservatory does not fall below 46 degs. in the morning no harm will be done. See that the heating apparatus—boilers, flues, and everything relating thereto—is kept in a perfectly clean condition. It is a good plan to let the fire go out occasionally to give the apparatus a good sweep out; fuel is often wasted by not keeping flues, etc., clean. Another matter that requires careful attention is when the boiler and flues are cleaned, well is the size of the flues round the boiler. When the flues are small the heating power is reduced, and there is more danger of leaks, especially at the back of the boiler, getting choked. No boiler flue should be less than 4 inches and the fuel is produced in the heat it contains. I need hardly say be careful in the use of the water-pot now; damp destroys many flowers. And in sweeping flues, etc., avoid raising a dust. Camellias are forming old-fashioned flowers, but they are not popular now; they are too stiff, and are lacking in perfume. Tea Roses should be moving now.

Unheated Greenhouse.

The owners of cold houses have had a long period of enjoyment. A warm summer, followed by a mild, open autumn, has rendered the absence of fire-heat of little moment; but sterner times are coming, and it will be necessary to make things as snug as possible, if possible, of course, to be unheated. I had a cold house full of Chrysanthemums; judging from the character of the weather I looked for a severe frost, but no such untimely inconvenience. A moderate frost, similar to the one we had, well, the frost was not so severe as I anticipated, and my labour was to a great extent lost; a covering over the roof would have made all comfortable. I have great faith in roof-covering on all glass-houses where it can be carried out; in forcing-houses it not only economises fuel, but the internal atmosphere is more genial; but this covering when boring is going on should not be left on longer than is necessary. With a perfectly cold house the cover may remain on longer without doing injury. I have had cold houses and pits covered up for a week, and no harm followed, but the uncovering was gradual. Plants after being for some time in a bad light will not bear full light all at once. If covers cannot be used, see that the pots are all deeply plunged in some non-conducting material, such as cheap Coarset Straw-sawdust, the former preferred. Of course, no water should be used in the house during a severe frost. My rhos and other plants are perfectly hardy should have their branches from the water, and be covered in the same way. Camellias (Frigidulosa), or something to protect from a low temperature. Dracenas, and the green-leaved varieties, may be wintered safely in this way.

Stove.

There will be a grand display of Polistes now. A group of P. ichneumon, with a few plants of the white variety that I raised last year, will have a good effect. Among the effective plants which are always more or less in flower may be named *Hebeclia speciosa major*; this is a very useful old plant, still found in most good collections of stove plants. *Ephedra* when well done are a lust in the masses, but though often grown in a stove the flowers will last longer if the plants are taken to a cooler house. They may be grown in baskets, and I remember seeing the back wall of a small stove covered with different varieties by grafting on to one of the plants of the fast-growing varieties. The grafting is a simple business; just make an incision in a prominent spot of a *Cactus* stem, not too old. Press a shoot of *Ephedra* and thrust it into the cut, fixing it with a spur from the *Cactus*, and in a short time the union will be complete. *Ephedra* will root just as easily from cuttings, but plants from cuttings are apt to damp off at the collar if not carefully managed. Thrusian-like fungus has a pretty effect in the stove now; the light-red flowers are numerous borne on long, three-like stems, which give the plants a very nice appearance when in bloom in winter. They are ready propagated from stout cuttings in spring, and spring-druck plants will flower following winter.

Ferns under Glass.

These are always attractive, and a free use can be made of the best kinds in the conservatory to give character and tone to the flowers. Everything is quiet now in the fernery under glass. There is nothing at present requiring potting, but the winter will be time for selecting in a stock of potting-soil for those and other plants. There is less peat and more loam used for Ferns

than there used to, and where good loam can be obtained very little peat or leaf-mould need be used for the hardier kinds of Ferns, whether greenhouse or stove species. There is considerable advantage in potting Ferns firmly; growth is denser and the colours greener, and larger plants can be grown in pots of limited size.

Cold Frames.

Tender plants are kept in cold frames, warm, dry coverings will be necessary in sufficient bulk to keep out frost. The treatment of the past few weeks will have led up to this. Little water has been given, and the plants having been kept dry, and, if covered heavily with dry litter (Ferns or Rindus will do), the frost will not do much harm; but the sides of frames must have a bank of litter placed against them, or the frost if severe will penetrate there.

Window Gardening.

Keep all plants free from excitement as possible. Growth made during short days, especially in severe weather, will be of but little use to the plant. Little or no water will be required during cold weather, but the leaves may be sprayed occasionally. All the tender plants must be moved from the windows at night to some position in the centre of the room, where a covering of newspapers may be placed over them.

Outdoor Garden.

Hurry on the planting of deciduous trees as fast as possible. The ground is in good condition for the work. In some of my planting operations lately I was surprised to find the ground in some places still quite dry, though since the break-up of the drought a good deal of rain has fallen. I think it is a good plan to give a good watering to all trees just before the work is quite finished. My usual plan is to fill them nearly level, treading in well, and then give one or two inches of water, according to the state of them, the object being to raise the roots well in the land, and when the water has drained away, say next day, flush filling in the hole, and finish with some non-conducting material; or if this is not available, raise the soil rather higher than customary over the roots, the surplus soil to be levelled down in the spring. There would be few deaths if something of this kind was done by planters. The best season for planting Trees was long since over. I have planted Roses in spring, but so far as regards hybrid Perpetuals—in fact all those except *Tea*—I would plant in November if possible. In cold districts it may perhaps be advisable to keep them back till the winter is over; but there is not much gained by it if the stems of the newly-planted dwarf Teas are earthed up a little, and the heads of the standards protected with dry Fern. Those, of course, who never lose Tea Roses need not adopt this precaution. A mulch of manure over the roots of newly-planted Roses is always beneficial. Of course, everybody who is planting deciduous Trees covers the work so that the plants have a chance of making an independent set of roots. Such borders of hills with old leaf-mould and manure.

Fruit Garden.

Do not delay pruning longer than there is power to grapple with the work. The berries are all down, and the work can never be better done. The most judicious pruning is that which the fruiting time has to be hurried over, and is then imperfectly done. The wall trees and espaliers are the most important, as when they get out of hand bringing them back to the wall again involves a good deal of cutting, and the effect is, on the whole, injurious. Of course, when the tree is crowded with useless spurs it is always wise to thin out freely. In gardens where the gooseberry-caterpillar has been troublesome last spring or summer, an effort should be made now to clear out the larvae by removing all wood from around the bushes, and burning it in a trench in some other part of the garden. If these insects at this season are buried a foot deep in the ground they will never work through. After the earth has been removed some fresh lime should be watered under the bushes, and, if necessary, a little manure may be given, and soil from another part of the land brought to make things level. Bush fruits as a rule do not get manure enough; year after year they bear heavy crops, and die to decay. The soil, if it is given them. Cuttings of bush fruits may be planted now. Select stout straight cuttings from 12 inches to 16 inches long. Cut close to a joint at the bottom, and remove all the limbs from the stems except the two upper ones. Plant in rows 1 foot apart, and 6 inches apart in the rows. Plant 3 inches deep, and tread the soil firmly about them. A little old leaf-mould or hot-bed manure scattered between the rows will make their rooting a matter of certainty. Well ripened pot Vines may be planted now for the production of early Grapes in a night temperature of 50 degs.

Vegetable Garden.

Protection for tender things is an absolute necessity. Cauliflowers, Winter Broccoli, Lettuces, and Endive, if more than half grown, will perish if exposed to the frost. There are many ways of protecting these and other things. Those who have plenty of soil can use frames, and fill the perishable plants with balls and plant under glass and cover with mats or dry litter when frost sets in. In the absence of glass other means should be adopted. The best way to secure Winter Broccoli and Cauliflowers is to dig them up with balls and plant down in the earth so that most of the stem is buried; they will, in fact, be heeled in, and the best position is a dry bank or raised border, a covering of mats or hessian cloth will do the same thing, or there will keep all safe. Many late Cauliflowers and early Broccoli are lost through not taking proper measures to protect them in good time. Celery is another matter which requires looking closely after. Last year many lost their Celery through frost for want of a little protection. It will be advisable also to take up plenty of Sea-kale for forcing; the crowns, after the strong or long roots are trimmed off, may be laid in on the north side of a wall to ensure perfect rest, and when frost sets in be covered with litter, so as to be able to get the roots up required for forcing. Asparagus to meet early requirements may be treated in a similar manner. The forcing-ground will be in full operation now. Forced products, from Mustard and Cress to French Saladings and Mushrooms, will be in frequent demand now, and the man who can do the most with the least means is the most successful in his calling, and this involves constant thought and watchfulness. Get all vacant ground trenched as soon as possible. This is the first step to good vegetable culture.

Work in the Town Garden.

The shortest day will be upon us almost directly, and, especially after the sharp frosts and severe weather experienced recently, the contents of most town gardens wear a very desolate appearance, with inclosed and outcloses in thickly populated localities everything out-of-doors is so soot and smoke-begrimed that even were there a few flowers still lingering in sheltered nooks they would not be presentable, and even the berries of *Hollies*, *Aucubas*, and others are nearer black than red. When the weather is mild a good watering with a garden engine, hose, or syringe will greatly improve the appearance of evergreen shrubs, at least, of such as, like the *Eucalyptus*, *Arbutus*, and *Rhododendron*, are furnished with smooth and glossy leaves. The leaves of small shrubs of this and others in window-boxes will certainly be greatly improved, both in health and appearance, by an occasional syringing, though it is an extremely tedious job at the best. Inside window plants of the same character, such as *Camellias*, *Dracenas*, *Aspidistras*, *India-rubbers*, &c., should be similarly treated once a week if possible, using tepid water and a bit of soft sponge, with a very little soap if the leaves are very dirty or there are any insects about. Plants in rooms must be very carefully watered at this season. Now that many of the strong fires are the rule more water will be required, on the whole, than when evaporation was less active; but any excess must be carefully avoided, especially in very cold weather. Evergreen subjects ought at all times to be kept in a more moist condition than such as can bear their leaves; and plants in growth, bloom, or both, need more liberal supplies of water still. Much the same rules hold good in the greenhouse, but much depends upon the temperature maintained, if low, water sparingly, and chiefly in the forenoon of mild or bright days; if high, more must be given, and things must not be allowed to get very dry when strong frosts are employed on cold nights. Chinese *Prunus* are the gayest and most useful plants here now, and with these the pretty berried *Solanum* contrast or blend admirably. These last cannot, however, be grown in very windy places, or, rather, though they will grow all right they refuse to "berry" freely, so that *Camellia* and *Prunus* plants must be sought in *Camellias* are good in plants, and I have had them blossom freely year after year where the soil sometimes was on their leaves so thickly that you might almost scrape it off with a knife. Three pretty plants must be kept cool and loved. They will shed their buds unopened. Early-potted Roman *Nyctaginis* will expand very quickly now in a temperature of 60 degs. B. C. R.

THE COMING WEEK'S WORK.

Extracts from a garden diary from December 2nd to December 10th.

Started a house of pot-Vines; the house is a low lean-to, and is fitted with a roller and a canvas blind, and much benefit has been found from the use of this kind of cold nights in frosty seasons. The Vines are strong and well ripened, and are 6 feet long in 12-inch pots. A bed of straw, or a layer of straw, is put under the pots, the house being something used for Cucumbers. The pots are plunged in the leaves, and the ground warmth arising therefrom is a great help to the plants generally. The Vines are all bent back, and will remain so till the buds show signs of breaking. Very little water will be given for some time, as the roots do next to nothing till the buds start. The night temperature at starting will be about 50 degs. Scarcely any ventilation will be given till the buds are breaking into leaf; but, of course, the house is not air-tight. Should the Vines appear to be breaking well they will not be interfered with till ready for tying up; but if any of the buds appear sluggish and hang fire, the backward Vines will be straightened out and the roots twisted in one direction till the wood cracks right up to the end. This never fails to set the sap in motion. I have applied this treatment to Vines which break badly on many different occasions, and always find it has the desired effect. Planted more French Beans in pots, three will come up with the pot Vines. The pots are half full of soil, space being left for earthing up when the Beans have grown a few inches. Took advantage of frosty weather to wheel manure on land ready for digging in; the soil of a rather holding character, so no harm will be done by manure now. In the case of a plot of light land shall make the manure into compost with other waste matters, and keep it in a heap till the spring. If light land is manured with decomposed manure a good deal of the strength will be gone, and it will be better to use the manure in the form of a hot-bed, and another frame on a gentle hot-bed has been fitted with French Horn cress. French Potatoes have been started in boxes to fill arched houses, Sharp's Victor and the old Ashpot being the varieties. Thinned out shrubs in a strawberry that was planted a few years ago, and which has become crowded.

4981.—Growing Clematis.—Train the Clematis on wires—painted wires, not galvanised, are best. 12 feet apart would do. Two good varieties would be Jackman's, purple, and Harry's, white; and these two, planted alternately, and permitted to mingle their blossoms, would look well.—E. H.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruits and vegetables. The drawings of these drawings so made will be engraved in our "Gardening" and will appear in due course in our "Gardening" and will appear in due course in our "Gardening".

In cold or northern districts the operations referred to under "Garden Work" may be done 10 or 15 days to a fortnight later than is here indicated, with equally good results.

HOUSE & WINDOW GARDENING.

CUT-FLOWERS IN THE HOUSE.

PLANTS are often now grown as much to give cut-flowers for the house as for their effect in the garden. This is a pity in some ways, as borders are spoiled if the things are cut about to fill bowls and vases on the table. Where possible reserve a part of the garden, so as not to interfere with the plants in the more conspicuous positions. Sweet Peas and similar things could well be grown there, and hundreds of bloom



Narcissus calathymus reflexus.

gathered without interfering with the clumps in the borders. A large number of hardy perennials are delightful to cut for the house, and the more simple the arrangement the better. A bowl of Paeonies, German Irises, or a posy of one kind of Carnation are in every way better than any absurd wiring of the blooms or imitations of the fads of professional florists. In the spring the various kinds of Anemone supply lovely masses of bloom, A. fulgens in particular lasting well in water. Lilies of the Valley, Snowdrops, the Lenten Roses (Hellebore), Iris reticulata, Spring Snowflakes, Forget-me-nots, Daffodils, Primroses, Auriculas, Polyanthuses, Tulips, Tufted Pansies, and Ranunculuses all being of use in one form or other of decoration. Some flowers fade quickly when cut, the Lenten Roses (Hellebore) especially, but this may be in part obviated by occasionally dipping them into water, and removing a little of the stem each day. Daffodils are, of course, the most exquisite of flowers for cutting, and when arranged with Mahonia foliage the shades of yellow are intensified. They should always be gathered when about half expanded, and this applies especially also to the German Iris, half-opened buds expanding in fullest beauty in water. When they open in full exposure to the weather they get much sullied by the storms of wind and rain. In the summer months a well-planted garden is full of useful things to cut for the house. Achillea The Pearl and A. mongolica, the former with double pure-white flowers, each like a little rosette, and the latter also white, large, and single, are worth growing for this purpose alone. Anemone japonica alba is perhaps the most useful of all hardy perennials for cutting; it blooms for many weeks, and the flowers last well in water. Then come may all the White Antirrhinums, Michaelmas Daisies in variety, Early Chrysanthemums, particularly Mme. Desgranges, its sports, and the delicate rose-coloured Mme. Grunerwall, Coreopsis lanceolata (yellow), Ghidoli, Tufted Pansies, and the Sea Hollies. These are very beautiful, the metallic blue lustre, so to say, on the flower-buds imparting to them distinct beauty. Bryngium plantum, which produces a crowd of small, conical, steel-blue heads, E. giganteum, and E. Olivierianum are all useful, and none difficult to grow in light soil. Whether the decorations are extensive, or the flowers are merely cut for the house, they should be simply arranged. One of the most beautiful arrangements, if such it could be called, I have seen was a bunch of Comtesse de Paris Carnation in a Munstead glass. Another point is to use as far as possible the foliage of the flower with it. In the case of Daffodils this

cannot always be, as the bulbs are injured by the removal of leafage; but Roses, Paeonies, and, in fact, almost everything, are better without Ferns, Asparagna, or stereotypical leafage. Chrysanthemums are, however, of course, best with such leafage as the Mahonia, or even twigs of the Beech-tree. The colours of the flowers, especially if they be chestnut-red or shades of orange, are delightful in association with the autumn leafage of hardy Azaleas, the Liquidambar, or commoner things. The pretty little Narcissus figured is rather choice for cutting, but potsful of the bulbs in flower may be used in many ways.

CHRYSANTHEMUMS FOR A WINDOW.

THESE popular flowers can be grown so well by amateurs without fire-heat that no one who is willing to take a little trouble in watering the plants, &c., through the summer, should now be without a few specimens. The earlier flowering varieties (not those of the Mme. Desgranges type, but Chrysanthemums which flower early in November) should be selected, as they last on a long time into the winter with care, and form such valuable decorations just when other flowers fail us. At the present time, when Chrysanthemum shows are so frequent, it is easy to select the names of a few good types of blossom; but if novelties are needed, the following dozen may be relied upon to give good results: Mrs. Charles Blick, deep golden-yellow, very large flowers, with a satin sheen in its long petals; Lord Brooke, a magnificent incurved Japanese, of a rich bronze shade; Mr. W. H. Atkinson, an immense flower of a bright coral-red, very distinct and handsome; Holborn White, of the purest ivory tint, reflexed Japanese; Mme. Edmond Rey, a soft rose-pink, with creamy white centre, which blooms rather earlier than the rest, and is highly decorative in effect; Vice-President Calvert, deep-crimson, with odd-gold reverse petals, a fine Japanese incurved variety; Mr. C. B. Whitwell, the deepest maroon tint yet introduced, which forms an excellent contrast to the paler shades; Miss Ethel Paul, a very beautiful pure-white bloom, with the central petals incurving; Miss Ruth Cleveland, a delicately shaded pink and silver variety, with remarkably broad petals; W. A. Manda, a blossom that has won the title of the "Yellow Ostrich Plum" on account of its soft, fluffy appendages, which give its petals a feathery effect; Colonel W. B. Smith, deep-orange, shading to terra-cotta, which is especially useful as a vigorous and rather dwarf variety; and Mr. Charles K. Shea, of a pale lemon-yellow, very pure and charming. The above dozen does not contain any of the shades of blue and magenta which are often found in exhibitions. These, though beautiful in themselves, are quite unsuitable for decorative purposes, anything like a magenta tint being quite inadmissible in rooms where good taste prevails.

CRYSANTHUS may now be obtained very cheaply, and can be rooted by placing each firmly in a thumb-pot of sandy soil, then sinking the little pots to the rim in a box of a fine ashes, which should be deep enough to take the cuttings without their being touched by the pieces of glass which should cover the box. The cuttings can be kept damp, but not soaking in water, the ashes also being damped so as to afford them a moist atmosphere. The box may be placed anywhere in a room to which frost does not penetrate, the glass being turned or wiped dry daily. As soon as the cuttings begin to grow (which will be in about six weeks' time, or more if they are put in early in the season), they should be gradually hardened off, giving more air and light daily until they can stand without the glass, without drooping their foliage. They may then be repotted, giving slightly richer soil, and the tops should be pinched off a week later to induce them to form bushy plants. This process of repotting and putting back should be repeated three or four times before the end of June, each time giving the plant richer soil with turf-mould, leaf-mould, soot, and sand until they have reached their flowering pots, which may be 9 inches or 10 inches across the top. They are best out-of-doors after the spring frosts are over, and must be well ripened in the sunshine to do well, morning sun being preferable to that of the afternoon. Regular watering, and the addition of liquid manure or soot-water (made by steep-

up some soot in a piece of coarse sacking, and soaking it in a pan of rain-water, which can be renewed for weeks, and should be used in a clear, thin state) from the end of July till the first flower in showing colour are essential to fine flowers, but after this time pure rain-water only must be used. Disbudding should only be moderately done when Chrysanthemums are for decorative use. Some varieties, however, need more buds removed than others to ensure effective sprays of bloom. When the plants are in bloom they may be placed in a sunny window or a bow-window with impunity, but should not be exposed to the fumes of gas. They should be removed at night if this be turned into a bathroom or spare room, where a piece of linoleum or a large tray can be placed beneath them, and watered over the foliage (but not the flowers), from a roseted pot, so as to give them damp, cool air at night. If black-fly should attack them, which it may do if they are kept short of water, or in too dry an atmosphere, the first traces of it must be immediately removed with a bit of sponge and soapy water. If this washing be repeated daily two or three times the enemy will be routed and disappear; but care must be taken that the plants do not become too dry again. They will stand well in a glass entrance porch, or under a verandah. Very slight protection from frost is necessary for the early-flowering varieties of Chrysanthemums; in fact, in seasons like the present many thousands have been grown without any protection at all. R.

4947.—Vallota not flowering. There must be something wrong at the root of this Vallota Lily, as it does not thrive and increase as the bulbs usually do, although the leaves commonly turn yellow and fall during the winter. Perhaps the drainage is in fault, or worms may have entered the pot, when they destroy the young roots as fast as they are made, and thus cause much havoc, preventing the growth of any plant. "A Lover of Flowers" should turn the ball of the roots into the left hand carefully, without much disturbance of them, and ascertain whether this enemy is present, which may be known by the rut-like little roads a worm always makes between the pot and the soil, and if so turn him out. Should there be difficulty in finding him, replace the plant in the pot and lower it into a pan of lime-water—made by stirring a lump of lime the size of a teacup into 2 gallons of water, and letting it stand till clear and cold—when the worms will usually come out at the top to avoid the lime-water. It is now late for repotting, and Vallotas dislike to be disturbed; but in the case of worms in the pot it is necessary to get them out at any risk. If the soil should be



Oliver's Sea Holly (E. Olivierianum). (See "Cut-flowers in the House.")

found to be sour, the bulb would be better taken out of it and planted firmly in good, sweet soil, with leaf-mould, soot, and sand mixed with it in small quantities, and the plant should be kept rather dry, though not dust-dry, until it begins to make growth in the spring. Vallotas like to be near the surface, and, in fact, push themselves almost out of the ground in time. They should not be repotted when healthy for years, as they bloom best when tight in their pots, but supplied with liquid-manure—soot-water being the best of manures for room-plants—and a mulch of rich soil between the bulbs in spring. These little tips and hints, when being properly ripened

in July and August, when they should stand in the open air, if possible, in full sunshine, being applied with plenty of water or liquid-manure at the same time. An easy way to give this, when the pot is very full, is to place them in a saucer of soot-water; but they should not stand in water at any other time of the year, and a saucer, if used, must be empty in winter.—I. L. R.

GENISTA FRAGRANS (CYTISUS RACEMOSUS) FOR A ROOM.

THESE plants, covered with brilliant yellow blossoms, are sold in large numbers in our streets during the winter and early spring, and few flowers are more decorative for the table or drawing-room, while the *Idem* lists, the fresh flowers, too, being an additional charm. With good care and cultivation the *Genista* will produce flowers in succession from early spring to late autumn; but too often room plants, exposed to gas, and insufficiently watered, soon drop their leaves and become unhealthy, when the flower-buds shrivel away, and the beautiful perfume becomes an eyesore. Many of the forced plants sold in the street receive such a serious check from being taken out into the cold wind from a forcing-house that they never recover it, and for this reason they are best bought during a mild break in the weather, or from a reliable nurseryman, who has not over-colded the plants for early sale. The earliest *Genistas* are already in bloom, but those who have a warm greenhouse must take special care of their plants when in bloom at this time of year. They must never be exposed to gas, which has a singularly drying effect on the air, and all room plants do best when it is not humid. If, however, gas is unavoidable, the plants should be removed before it is lighted, into a bathroom with hot-water pipes, or a bedroom, where they can stand until the sitting-rooms have been thoroughly aired the next day. A slightly damp air, in a temperature of 50 degs. to 60 degs., is a great help to room plants at night, but this is not easy to procure without a warmed conservatory. A bathroom, where warm water can be turned on to mist the air two or three times in the day, is often useful in this way, if the hot-water pipes are kept warm at night by banking up the kitchen fire; or, failing this, the plants may be kept in a room with a fire, if they are given a large tray, or flat bath, containing a layer of Moss or Cheong-mat-fibre, which should be kept moist from a rosed watering-pot, the plants standing on inverted saucers, not in water. Plenty of sunshine and air should be given to room plants in mild weather, but during a frost, they should be removed from the window, and covered with newspaper in a sheltered corner at night. *Genistas* stand well in a verandah or balcony during the summer. If they are not back and repotted (using good loam, leaf-mould, and sand as a compost, with plenty of drainage) after blooming, they will make fresh growth, which is often again covered with blossom. They are propagated by cuttings or slips in the spring, but these require the help of coal, dust air to make them take root. This can be supplied by sinking the pot of sandy soil, well drained (in which five or six cuttings can be firmly ranged round the edge), in a box of fine ashes, which can be covered with a piece of glass, the surrounding ashes being kept moist and the glass turned or wiped daily, until the little plants are rooted. L. R.

4971.—Draining a garden.—In country districts it is nearly always possible to find a good labourer that has had some experience in draining, and with one good man to clear out the bottom and lay the pipes, ordinary labourers can clear the top. The cost would depend upon the character of the soil, the cost of tiles, and price of labour in the district. This would have to be arranged on the spot. For garden culture it would be a very good plan to burn some of the clay, pass it through a screen, put the rough over the drain-pipes to the depth of a foot or so, and scatter the fine stuff over the land. This would make a permanent improvement of the utmost value.—E. H.

Cosmos bipinnatus.—This has been very beautiful this year, and it is an annual that amateurs might grow more often. The plant

makes free, feathery growth, and the flowers vary in colour, rose-purple and white. The white kind is charming, one of the most graceful plants of the garden. It likes a warm summer, hence its beauty this year. Get a good clump of it, choosing a rather warm position for it. Seeds should be sown under glass in February in the usual way, and the young plants put out when frosts are over. They will be in bloom throughout the autumn months.—V. C.

FRUIT.

WINTER PRUNING.

THIS is the best time to get on with the pruning of nearly all kinds of fruit-trees and bushes, for although such work can be done during severe frost, I question very much whether that is the best course to pursue. For myself I would sooner keep all the wheeling of manure, grubbing up old trees, etc., for frosty weather, and push on the more important work of pruning while it is mild. Doubtless there are still many who think that pruning is unnecessary, but I think that the best argument in favour of it is found in the greatly increased size of the fruit, borne by trees systematically pruned, compared with those borne by trees left in nature, and we all know, by the experience of the past season, that it is only fine fruit that pays to cultivate. But pruning, like any other thing, can be overdone, and thereby brought into disrepute. I will briefly describe how I prune, and I grow fruit-trees for profit, and unless they yield some they are soon grubbed up as useless. In the first place the more you cut a tree the more wood-growth there will be produced—as a rule; and some kinds such as the Stone Apple can only be kept from getting into a stunted condition, or really all fruit-trees, by cutting off the tips of the shoots, and you will find that trees that have been over pruned, such as pyramids of strong growing kinds that have been sheared off to one uniform height, whether it suited them or not, produce a thicket of gross, sappy wood, quite useless for fruiting; but this is really not pruning at all, and would be more correctly described as mutilating.

STANDARDS or dwarf-stemmed trees that are allowed to develop large heads require very little pruning after they begin to fruit. Young trees for the first three years after planting require a little thinning out, so as to get an evenly-balanced head of branches, shortening any extra strong shoots that are not growing the others; but after they bear full crops of fruit it will, as a rule, be best to keep the centre of the tree cleared of all useless spurs and spray, so as to throw all the vigour into the shoots that are fully exposed to sun and air, as this is where the finest fruit will be found.

DWARF TREES are very useful, especially for small gardens; but they should not be kept cut so closely as one frequently finds them, young wood being absolutely necessary to keep the tree in health, and a few of the older shoots should be removed altogether every year, and young shoots trained in, as it will be found that the finest fruit is borne by the topmost or youngest wood, and trees that have been closely pruned several years ago greatly benefited by cutting off the lowest lot of branches altogether, and the weight of fruit will soon depress the second tier into their place. It is a mistake to reduce the terminal shoot to three or four buds, as half-a-dozen is a good deal better, and, above all, keep the shoots thin. It is surprising how little wood will produce a heavy crop of fruit if it is of the right sort. As these kinds of trees are easily replaced, it is not advisable to let them stand for any great number of years.

PYRAMIDS are the form mostly favoured for Pears—in fact, some kinds grow quite naturally into a good pyramidal form, with very little training. The main thing in their culture is to thin out the centres, so that they get full light in all parts of the tree, and if not too formally grown they are a very serviceable form to adopt.

ESPADERS, or horizontal trained trees, to either stakes or wires, is one of the oldest and most useful of all forms of trained trees. They occupy but little space, and produce fine, well-coloured fruit in quantity.

WALL TREES, of all kinds of training, need as much of the old wood cutting out and replacing with new as the form of tree and mode of

growth admits of. Peaches, Nectarines, and Morello Cherries are as a rule pruned on the system of cutting out all exhausted wood, and replacing with that of the current year's growth, and it would be well if this were partially adopted with other fruit, for there can be no doubt but that the finest fruit is borne by young wood, and although Plums, Pears, and some other fruits do not flower freely on the previous year's wood, there is no question but that they all fruit more freely, and the fruit attains a greater size on wood that is comparatively young, and for this reason old, hard spurs should be shortened back close, so that they may renew themselves, and there should be a constant relay of young wood all over the trees if fine fruit is plenty to be grown.

JAMES GROOM, Gosport.

4964.—Planting Raspberries.—The best and the least expensive way of planting Raspberries is to plant in rows 7 feet apart, the plants to be 2 feet apart in the rows. Cut down nearly to the ground first season to give a chance for the plants to get well established. Afterwards prune to 3 feet, and let the plants produce the crop nearer the roots than is customary. If well-ripened 3-foot canes will bear as much fruit as if left 18 inches longer, and the expense of the crop will be less. Good varieties are Hornet, Norwich Wonder, Superlative, and Fastoff. The last is a good sort for preserving, but will not grow so fine as the others.—E. H.

4963.—Making cider.—In cider-making counties proper mills for grinding by manual labour the Apples, and presser to press out the juice are provided, and where there is any quantity to make these appliances are indispensable. After the fruit is ground into a pulp it is laid on the bed of the press, with a little clean wheat-straw to help to bind it together and prevent it from bulging out at the sides. The top of the press is then brought down, and a large screw from above is worked by leverage with sufficient force to press out all the juice. What was rather a high square heap at first is reduced to a comparatively small mass. The juice is, of course, collected and placed in barrels as soon as it is made. In three or four months after it is raked off—that is, all the clear liquid is drawn off and put into another barrel, and the sediment at the bottom of the cask thrown away. When sweet cider is required, the sour and sweet Apples are kept separate, and used in that way.—J. C. C.

4921.—Pruning Fig-trees.—I would advise "Babcock" to leave his Fig-tree unpruned until the spring. Figs, as a rule, do not require much pruning, but it all depends on whether it is trained to a wall or fruits as a bush tree. In the latter case pruning is unnecessary; but on a wall the wood must be thinned out, so as to allow space for the foliage to spread out. The best plan is to cut some of the longest and barest shoots right back to the base, and keep taking up a few young shoots every year. As the Figs are borne on the tips of the last season's wood, those that are half-grown now are useless, and if not pulled off will drop off next season. It is the ones just formed, but not much more than half-grown, that will form next season's crop; and in cold localities it is best to tie the shoots up in bundles and protect with straw, Fern, and evergreen branches. When these are taken off in spring is the best time to prune.—J. C. Hants.

4903.—Gooseberry-caterpillar.—How often have I seen this question in GARDENING, and never yet have I seen it answered in the way that I found it quite effectual! A dozen years ago my Gooseberry-bushes were almost stripped by caterpillars, and my gardener killed them all (in summer) with one shilling bottle of Fir-tree-oil, mixed with water, as directed, and distributed with a large brass syringe. What fell off the bushes fell into the ground, and did not hurt the fruit, but killed any eggs that might be there. For ten years I never saw a caterpillar, and now if a lush shows any a small dose of the oil puts an immediate stop to the plague.—ADMIRAL F. A. CROSE.

4923.—Grafting or budding Cherries.—Cherries are usually budded, and the budding is done end of July or beginning of August. The bud is inserted in the side of the stem near the ground. The bud will remain dormant during the following winter, and break the next spring, when the stock should be headed down.—E. H.

CHRYSANTHEMUMS.

Pompon Chrysanthemums.—The Pompon Chrysanthemums are amongst the most beautiful of all, the plants free, and the flowers produced in profusion. One of the more popular is Mlle. Elise Jordan, and when grown freely blooms profusely, its flowers neatly shaped and rosy-pink in colour. A few good plants will make a pleasing display in the greenhouse. Two very good new kinds are Laine Fleuri, the flowers orange-yellow, and Marmon, which is one of the most charming recent novelties. The flowers are of true Pompon shape, very neat, free, and in colour rich-orange, a lovely and distinct shade. Eynsford Gem, purple, shaded with rose, is a good variety. The best Poppoms are: Black Douglas (the flowers deep-crimson), Bob (brownish-crimson), Cede-Nulli (in its several colours), La Neige (pure-white), Marabout (white, with fringed florets), Resonance (rose), Scapine (a fringed variety rose-crimson in colour, and with pleasantly scented flowers), Snowdrift (a beautiful white flower), Golden Mlle. Marthe (rich-yellow), St. Michael (similar colour, a variety usually grown for specimen plants), St. Thais (brownish-orange), and Tricolore (especially the white form).—V. C.

4987.—**An amateur Chrysanthemum grower.**—As I was connected with a Chrysanthemum show for some years, in which many professional and amateur gardeners exhibited, I can well assure that there are some things done that one would rather see left alone; at the same time, I do not see that there is anything very objectionable in what this correspondent complains of. If there was nothing more serious done before the show, the managers and members could very well pass unnoticed the selling of a few blooms at the close, and I do not think that such an action disqualifies anyone who does so. There is not any recognised rule in an amateurs' society that will apply to the inquiry referred to, and if the correspondent wishes to establish such a rule he should get it inserted in the rules of the particular society in which he belongs. A kind of mutual understanding between members and exhibitors is not enough, because all men are not conscientious. There must be a clear and well-defined rule made and adhered to if things are to work pleasantly.—J. C. U.

—“Bubs” has touched upon a raw spot. The better plan so far as the Chrysanthemum show is concerned is to drop the amateur classes and let all show together, having plenty of classes, so that all may have a chance of winning in somewhere, only making a rule so that no exhibitor shall take more than two prizes in any class or classes, &c. Many of what used to be the leading amateurs in many societies sell something or other. They may not do it openly in the way stated, but it is done, and my word sets the example, and I very much doubt if anything done or said will alter it. Modern ideas are trending that way, hence the best course is, I think, to sink the amateur class altogether, and let all compete on equal terms. But I think all respectable societies should stop all sales during the show. I believe I saw at the Aquarium show the other day a notice exposed over one stand containing the words in big type, “These blooms for sale.” Business is usually done at these shows, but it might be kept in the background a little more.—E. H.

4988.—**Plants in pots and boxes.**—If the soil is turned in the pots and boxes, and exposed to the atmosphere in a corner of the back yard, a good deal of it might be used again next year. A little fresh loam or something of the kind to mix with it, and a little old manure to revive it, will make it answer the purpose again very well. Getting good soil is one of the difficulties of the town gardener, and by exposing it now and through the winter it will be better than keeping it in the boxes.—E. H.

—More especially as yours is evidently a “town garden,” I strongly recommend you to get rid of the old soil and procure a fresh supply from some country place for your pots next year. The constant watering, as well as the demand made by the roots of the plants, not only extracts the nutriment from it, but renders it more or less “sour,” and if used again the plants will not thrive as they should. If you

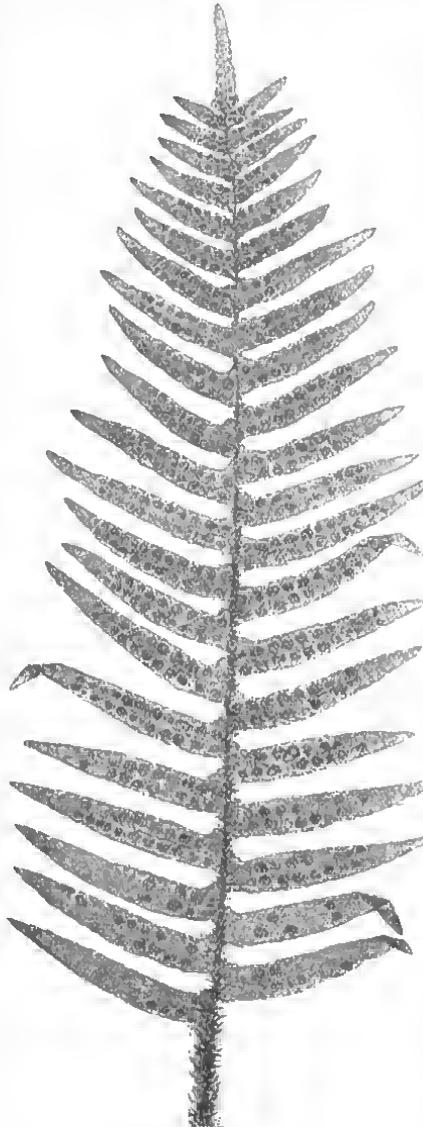
really cannot get fresh, turn the old out into a heap fully exposed to the weather for the winter, adding a little lime to it. Burn part of it if you can, and before using it again add a fourth of decayed manure or leaf-mould, and a dash of some good artificial.—B. C. R.

FERNS.

CHOICE FERNS.

LEPITYSIS SEPTATA.

This species, the subject of our illustration, is a very handsome Fern, well deserving cultivation in even the choicest of collections.



Front of *Lepitysis septata*.

Lepitysis is a small genus, nearly allied to *Polypodium*, from which it differs in having netted veins; thus it comes near to *Goniophlebium*, from which it may be distinguished by the underside of the fronds being densely clothed with ciliated scales. It is an evergreen warm-house plant, the fronds attaining a height of from a foot to 18 inches on well-grown examples, are lanceolate, or ovate-lanceolate in outline, pinnate, the pinnae being closely set and sessile, the under surface being thickly covered with ferruginous scales, through which the yellowish-red sori protrude. The specimen here figured was grown in the nursery of the late Messrs. Rollison, where many rare and beautiful Ferns are always to be found. It is a native of Brazil, Mexico, and Peru.

INDOOR PLANTS.

Begonias.—It may interest those who are fond of Begonias, but who have hitherto hesitated to grow them outside in cold and wind-swept districts, to know that an experiment made with them in Shelton this year has been very satisfactory. A few of last year's seedlings were planted outside in June this summer, and flowered continuously and well till the end of September, when a hand-light was placed over them to guard against frost. Now that the tubers have been lifted, they are found to have more than doubled their size while in the open ground. I hope that this may encourage others living in cold, exposed districts to try them outside next season.—K.

A fine Fuchsia.—Decidedly the finest double-flowered Fuchsia in cultivation is Mrs. A. Huggatt, one of Mr. Fry's seedlings. The tube and sepals are of a deep glossy crimson colour, stout and well reflexed, while the large and full corolla is of a deep purple-crimson hue above, and pure-white towards the tips. The substance of the whole flower is extraordinary, and the habit of the plant is dwarf, compact, and lushy to a degree, with small and very neat foliage.—B. C. R.

A new Zonal Pelargonium “Raspail Improved.”—That familiar and most useful variety, P. V. Raspail, which may be described as the finest zonal-double variety certainly—ever raised, has a second time produced a distinct and highly valuable sport. Its first departure, known as Turtle's Surprise, was distinguished by a much more dwarf and compact habit than its parent, as well as being even more floriferous; but this time the “sport” is in the other direction, the “Improved” form having thicker and stronger stems, larger leaves, and both pipes and trusses fully twice the size of the typical plant. The trusses are simply enormous—too large, in fact, for banquet work—but the single pipes, which are of much the same colour as in the type (a rich crimson-scarlet), are so large, with thick, shell-like petals, that they may prove useful when wired up singly for making up button-holes and so forth. As so frequently happens, this remarkable “sport” occurred in at least two places at the same time, and the foreman in a large and well-known nursery told me that he had only a few days before noticed that one of the plants of “Raspail” was making an unprecedentedly vigorous growth, and producing some enormous trusses, when a man brought a specimen bloom of the very same break which had occurred with him also. Every collection should include this really remarkable novelty.—B. C. R.

4975.—**Cacti from Mexico, &c.**—It is obvious that unless you can enter into some compact with a collector, or you have a friend in Mexico, you cannot get the plants. The only way is to treat with a collector who is going up the country, and make arrangements with him. I do not know what the cost would be, as much depends upon circumstances; but I think there is little demand for Cactus plants here, unless for the many beautiful hybrids of *Phyllocactus*, as J. T. Peacock and others.—C. T.

4920.—**Cinerarias in a cold frame.**—In reply to “Rector” as to whether Cinerarias in a cold frame should be watered overhead with a rose pot, or at the edge of the pot through the spout of water-pot, I should decidedly put the rose away after October, for in cold frames dampness causes more loss than actual frost, and in watering with a rose you not only wet the parts requiring moisture, but you wet the parts that should be kept dry, and although Cinerarias are moisture-loving plants, and should never get quite dry, yet when kept in cold frames at this time of year they require extra care in covering the exterior to keep out frost, and when watering requires to be done I always do it about ten o'clock a.m., leaving the lights open until the afternoon to dry up superfluous moisture, and in the South of England, Cinerarias for late flowering can be grown in frames up to the time when they show flower, and can then be removed to a drier atmosphere.—J. G., *Hants.*

4984.—**Temperature for a greenhouse.**—For “Geraniums” a temperature of 45 degs. to 50 degs. during the winter is ample, and with 10 degs. more they ought to bloom

freely, but in this case they must be kept near the glass, on shelves, etc. In order to keep *Colera* alive the temperature must not fall below 55 degs., with an occasional rise during the day of 5 degs. or 10 degs. more. This is where the disadvantage of growing in one house plants that require such different temperatures comes in—you cannot do both justice. *Rhynchospora* requires a warmth of about 55 degs. while being forced, and in the whole you should endeavor to keep the house at about this temperature, seldom less, and with a rise to 60 degs. or so when the sun shines. Keep the "*Geraniums*," etc., on shelves near the glass, and the *Colera* at the warmest end or part. Seventy degs. at night is altogether too much; you must not have much steam about, and if the stove gives off too much heat I should say the best plan would be to surround it with brickwork; even a single brick would make a lot of difference.—B. C. R.

PERSIAN CYCLAMENS.

The *Cyclamens* now so largely used for pot cultivation are almost wholly confined to the race of scodling varieties of *C. persicum* that in recent years have been so much improved both in the size and colour of their flowers, as also in the disposition to produce them in much greater quantities than the original species could be induced to. So great is the improvement that the *Cyclamens* of the present day are amongst the most beautiful and continuous bloomers of all greenhouse plants. The cultural treatment, with more warmth stimulating quick growth, that this new race is found to best succeed with, is very different from the old slow method of growing them, by which the plants were yearly, after blooming, subjected to a severe drying process whereby they were much enfeebled. The ordinary, and much the best way of propagation is from seed, which may be sown at different times of the year, according to the season they are required to flower. If well managed the plants will be large enough to admit of flowering when from fifteen to eighteen months old. To bloom in spring sow about November or December; if wanted to come into flower during the late autumn and winter months sow about the end of July, in shallow pans filled with a mixture of sifted fibrous loam, with some leaf-mould and a little sand added. Press the material moderately firm, scatter the seeds 1 inch apart over the surface, and cover them with about a fourth of an inch of the soil. When sown at this time stand in a temperature of about 60 degs., where they will soon vegetate if the soil is kept a little moist; to do this without giving too much water a thin paper may be laid over the surface and removed as soon as the plants are up, after which they must be kept close to the glass, and the sun not allowed to reach them. The best place in which to grow them through their early stages is a low heated pit where an intermediate temperature (which is necessary) all through the first autumn and winter so as to get them on large enough to flower satisfactorily by the close of the ensuing year and on through the subsequent winter) can be kept up. Give a moderate amount of air daily from the time the young plants are up, keeping the atmosphere a little moist, and syringing slightly in the afternoons; as soon as large enough to handle move singly into small pots, using soil similar to that in which the seeds were sown. Stand them on a moist bottom, still close to the glass; leave off shading as the soil decreases in power, and keep up a night temperature during the winter of about 50 degs., in which they will go on growing so as to require watering at the beginning of April into 3-inch pots. Then use similar soil, but add a little cow-mannure that has got old and mellow. They will now require a little more warmth, and until the season is farther advanced enough fire should be used in cool weather to keep them up to 55 degs. in the night, and proportionately higher by day when there is an absence of sun to raise the temperature.

A thin shade will again be needful through the spring and summer whenever the sun comes on them. Care must be taken at all times through the season of growth that they never want for water at the roots, or they will receive a severe check. Keep the atmosphere and the material on which the pots stand moist, syringing overhead each afternoon by which a

quiescent to keep them free from red-spider. Give air every day, but avoid draughts; towards the end of June move the plants into 6-inch pots, which will be large enough to flower them in the first season, and use a fair amount of drainage. Continue to treat as hitherto advised in the early part of the summer until September, when give more air, and discontinue shading and syringing so as to solidify the growth and induce the formation of flowers. Still let them have a position near the glass, but through the autumn and winter let the material in which



A root type of White Cyclamen.

the pots are dry. If each plant is now stood on an inverted pot it will allow a better circulation of air round them; with the same view do not crowd them too close—a condition that should in all the stages of growth be avoided or the leaves will get drawn and weak and the plants spilt. If all has gone well they will now be sturdy examples, with short stout leaf-stalks, the foliage half covering the pots; they will flower freely through the last months of the year and early part of winter, during which they should be kept in a night temperature of 45 degs. or 50 degs.

After blooming keep a little cooler, and when all danger of frost is over they may be turned out under a north wall, the pots plunged in ashes, or, still better, they may be kept in a cold frame, placed where they will be out of the full sun, and given enough water to prevent the soil getting quite dry. The plants will lose most of their leaves through the early part of summer, but will afterwards push up quantities; as soon as these are visible give more water, and when a little growth has been made move into pots a couple of inches larger, shaking away the old soil and replacing it with new of a like description to that hitherto recommended. Afterwards stand them in a pit, frame, or house and treat as advised for the preceding season, except that they will not now require to be kept quite so close. The ensuing winter the plants will yield numbers of flowers proportionate to the increased size they have attained. After blooming again treat as in the previous spring and summer in the matter of standing out, repotting, &c. They may be kept on after they have again flowered, or be discarded and their place taken by younger stock, which it is well to keep coming on by sowing some seed each season. When the sowing is deferred until autumn keep a little cooler both before and after the plants come up, and it will be well to prick them off when large enough, 2 inches apart in pans, allowing them to remain until spring before potting singly; afterwards treat as advised for the early sowing stock. Red-spider, to which they are liable, will usually be kept under by following the course of cultivation detailed. Thrips and aphids sometimes attack them, getting to the undersides of the leaves. These insects should be repeatedly sought for, when discovered dip in Tobacco-water or the same with Tobacco.

Indian Azaleas for forcing.—The most promising-looking plants of the best kinds for early forcing may now be placed in warmth. They can thus be had in flower by the middle of January without any undue haste. The florists I know have been cutting *Azalea* flowers for some little time past, but as far as this pertains to private gardens, there is no practical utility in it. In these latter a succession is more what is wanted, whilst in the former it is more a question of getting the best price for the blooms. I do not favour bottom-heat even of leaves, but have no objection to standing the plants over fermenting material, the moisture arising therefrom being decidedly beneficial in encouraging the buds to swell freely. Too much water at the roots must be guarded against, but the plants must not suffer from the opposite extreme. By plying the syringe freely, thrips, &c., will be kept down, whilst it will also save watering. When plants have been forced a few seasons they will quickly respond to a little warmth about now; in fact, at times they will flower almost without any additional warmth. I have noticed this in the case of *Roi Leopold* and *Deutsche Perle*, particularly the latter. The old white alba and *Fielder's White* with *Deutsche Perle* are about the three best of their colour. Of the striped varieties, *Roi Leopold* alba, *punctata rosea*, and *vittata elegans* are all reliable, the two latter hardly wanting any forcing. In the reds, *Roi Leopold* is still one of the most reliable to force early of the large flowered type; *calyciflora*, a bright salmon-red, larger than, but somewhat similar to, *amena*, is a free-growing and as free-flowering a variety as that old kind, which should also be included. Another fine old kind is *obtusum*, a variety that is, in spite of its age, not nearly enough grown. The foregoing, as the earliest, are about the best to choose, as expensive kinds are not desirable.—H.

4973.—An unheated frame.—You can't grow any except hardy *Orchids* in an unheated frame, although it may be used for *Cypripedium* insignis, which does not need heat during the summer, although often seen in an intermediate temperature. The less artificial heat given to this species the better, taking it to the greenhouse in September to flower, which it will do through the early winter. *Cypripedium spectabile* is as beautiful as any indoor kind, more so than many of the dingy-coloured hybrids, praised for virtues they do not possess. It will grow well in a peat and loam soil. *C. calceolus*, a British *Orchid*, now nearly extinct, is very charming, the sepals and petals deep brown and the lip yellow, and *C. guttatum* compose a good trio. The latter has very distinct-looking flowers, and *C. pubescens* may be added. One of the most handsome of all *Orchids* for pots is *Orchis foliosa*, which is very vigorous in growth and free. One often sees names of it in exhibitions. It varies in height, but is usually about 2 feet. The flowers, borne numerously on a strong spike, are of a purplish colour, deeper in the lip than the sepals and petals. It blooms in May. You may also choose *O. latifolia* and *O. maculata*. These are the cheaper and more vigorous kinds.—C. T.

4982.—A lean-to greenhouse.—With a house of the dimensions you give, you should not have any difficulty in keeping out the frost with a good oil-stove, such as Toope's or Rippling's, with an extra lamp, perhaps, in very severe weather. And if you only use the stove when the temperature in the house falls to the freezing-point, you will be more likely to save your plants than by keeping the house warmer by the same means. It is the constant use of the oil-stoves in greenhouses that injures the plants, whereas they ought not to be lighted until there is danger of the frost entering the house. In such cases as this inquiry refers to, it is better to keep the soil in the pots rather dry than wet, and to open the top ventilators a little every day when it is not freezing, and in mild weather a current of air should pass through the house by opening one or two of the front ventilators.—J. C. C.

—Certainly. An apparatus consisting of two rows (or six or 20 feet) of 3-inch piping, and a properly-constructed copper boiler to consume paraffin, would do all that is required with a minimum of trouble, and the cost would not be great. In case something still cheaper would be preferred, a couple of the little oil-heated

stoves now made so well and sold so cheaply would exclude any ordinary frost from a house of this size, especially if a thick, warm covering or blind could be drawn over the roof on cold nights. Use the stoves only when necessary, employing the best oil and keeping them clean, and give air freely whenever the weather outside is moderately mild, and all will go well. In severe weather it is better to keep the plants, Geraniums, &c., especially, moderately dry.—**R. C. R.**

ROSES.

SEASONABLE NOTES.

Now that "chill December" is with us, and boisterous winds are swaying the most valuable growth of Roses about, no time should be lost in securing them in some way. On no account follow the plan many have been in the habit of doing, and cut off these strong shoots. I have often seen them cut back severely, and when inquiring the reason, have been told it was to balance the growth! Now this is quite a mistaken idea, as each variety has its own characteristic, and it is natural for many to make a few extra vigorous shoots. Indeed, the most valuable wood of this class consists of the strong shoots produced late in the summer, and which I am now calling attention to. If removed so completely as I have often noticed, the plant simply devotes its energies to producing more of the same growth; and a little thought will show us the reason for this. As the extra strong growers (no matter what class or section they may belong to) flower more freely upon the maiden wood of the preceding year, it is only natural for the plant to produce this in the endeavour to follow Nature's laws and reproduce its species as freely as possible. Growers of these vigorous varieties require quantity of bloom in preference to quality; fortunately a full meal of the litter can be had without loss of quantity, as this section provides us with a vast number of blooms of one stamp. Other Roses are more amenable to culture as regards quality of their flowers. If we allow wind to sway these branches about, they are often much chafed against one another, or else broken off entirely. It is very simple to secure them to a stout stake, if in the open border; or by a few strong shreds if against a wall or fence. I would not tack them in their permanent position now, but simply make them safe from injurious rubbing and swaying.

MULCHING AND PROTECTING.—Now is the best time to apply manure to the Rose-beds. In the first place we can get at it better, and the stimulating effects can be retained in the soil until wanted; it will also act as a considerable protection from frost. My own plants are all earthed up similar to Potatoes when first coming through the soil. I am now alluding to dwarfs only. In this class of plants the most vital and important part is the crown, or lower eyes. If this be covered with soil or rough manure no amount of frost will affect them. Even if we get weather sufficiently severe to kill or seriously cripple the top growth, covering the base of the plant in the way described will secure a few healthy eyes that are sure to do well the next summer. I do not believe in protection to the extent many practise, as even in the north Roses are among the hardiest of flowering shrubs; but it is one thing to go the extreme and quite another to afford a little judicious protection, especially to a few of the more tender constituted varieties. One of the simplest and quickest forms of protection consists of sticking a few branches of Fir, Horse, Birch, &c., between the plants, care being placed on the north and north-east sides. These are far preferable to shaking litter among them, as rain causes this to clog around the base, and when frost comes the frozen moisture is even more injurious than if no litter had been applied. Wind also removes it, and as a frost-laden wind is by far the most destructive agent, it is much wiser to shelter the plants with twigs as suggested. When the weather is open the twigs do not need removal, as they allow of light and air having free access to the plants, while Bracken, straw, and litter do not. The heads of standards may be drawn together slightly, and then have a few branches tied around them.

CUTTINGS.—Some time ago I gave a few hints upon the propagation of stocks from cuttings,

also of Roses. These will be much better if a little protection can be afforded should hard weather set in. Amateurs only need a few, and their stock is easily sheltered with a layer of Pea-boughs, or similar branches. Very little shelter is all they need, and this small amount of trouble will be paid for with a far more satisfactory strike than if left entirely to chance. On an emergency a slight scatter of litter might be given, but should be removed directly the frost goes, as it will keep the tops wet, and more liable to harm later on. Finally, it is astonishing how much frost a slight protection of branches will keep off; and as they are quickly applied, and do no harm if allowed to remain, I much prefer them to any other. **T. U.**

TEA-SCENTED ROSES AND THEIR USES.

The above heading suggests rather an extensive subject, for the purposes to which this popular section of Roses can be put are many and varied. As this class has been so much improved of late it is even more serviceable than before. Not a great many years ago there was among the Tea-Roses few climbers that had any pretensions to quality. Now, however, we can number some of our finest Roses among these, whether as individual towers or collectively as masses for effect. They have also been greatly improved in constitution, for we have many varieties that are among the hardiest of all Roses. As garden Roses they are surpassed by none, while to the exhibitor they are invaluable—so much so, that of late classes have been devoted exclusively to them at the majority of Rose shows. It matters little in what form or position one requires the Rose; he can be well suited from among this class. For forcing under glass, covering walls, arches, pillars or trellis-work as dwarfs or standards in the Rose garden, the Tea-scented Roses are equally at home. The earliest as well as the latest Rose of the year is almost certain to be one of this class, while for delicate perfume no flower can surpass them. There is such a large amount of vitality about this section, that all of the varieties will thrive much better as standards than any of the Hybrid Perpetuals, excepting those of very vigorous habit. They will also

grow in any soil and any aspect, and are free from red-rust and Orange-fungus. Their

Rose shows scheduled a class for six or twelve kinds fifteen years ago, we now have classes of eighteen, twenty-four, and even thirty-six varieties; more than this, they are shown in trebles up to the twenty-four class. Twenty-four trebles of Tea-Roses would have been declared an impossibility only a few years ago; not but that the number of varieties was easily obtainable, but it is the high standard of the present day exhibition flowers that would have been deemed the difficulty. In looking over a box of eighteen treble Teas four years ago, I was surprised to find that no less than fifteen of the varieties were of comparatively recent introduction. None of the Tea-Roses are so useless and deceiving to the amateur as many of the show varieties of the Hybrid Perpetual division; such, for instance, as Emile Hansburg and Horace Vernet—two grand Roses as seen on the exhibition stand, but quite useless for any other purpose, and even as exhibition kinds causing a great deal of trouble and seldom giving a flower. You may choose among the show Teas and be certain of being pleased. Such free-growing kinds as Anna Olivier and Marie Van Houtte (here figured) will climb very well if given a little time, although they are not generally considered as climbing varieties. Under glass is where the true beauties and charms of the Teas are most generally found. Here they throw enormous quantities of flowers, that are all exceedingly pretty and useful on account of being free from dirt. When growing in the open air, large numbers are often spoilt by unpropitious weather.

TEA ROSES should be grown on the Brier stock in some form. It matters little whether they are on dwarfs of the cutting or seedling Brier, or upon full or short standards of the hedge Brier. I much prefer them on the short hedge Brier, say with a stem of 18 inches to 24 inches. In this form, such dwarf and drooping kinds as Souvenir d'Ami and Niphotos are much better than as dwarfs. Their flowers in this way are kept away from the dirt, and at the same time the plants have not to obtain their nourishment through a great length of a Brier stem. The blooms of the Tea-scented and Noisette Roses last much longer when cut than the majority of those of the other classes, nor are they so liable to lose their colour and freshness as those of the Hybrid Perpetuals. Taken as a whole, a dozen plants of Tea-Roses will give three times as many flowers as the same number of Hybrid Perpetuals. The so-called "Perpetuals" do not flower more than twice during the summer, while the Teas will give from four to six crops of bloom. The flowers are also produced in greater abundance and in larger trusses.

R.

4890.—Marechal Niel Rose in a pot.

—Seeing your plant is so weak, I would advise your cutting it back at once. You will then secure a good growth during the coming spring and summer, provided the plant is in a healthy state now, and receives a due amount of attention. An unheated lean-to house, with south-east exposure, is excellent for this grand Rose; but you must first of all get some long and well-ripened wood upon your plant, or you will not have satisfactory results. Prune it hard back to the two or three lowest healthy eyes, and grow generously as soon as the roots are well to work.—**P. U.**

— You had better remove the flower-bud at once. If you do not do so it will most likely drop off, as there is not warmth enough in an unheated house to cause the bud to open. If you want to get a strong plant you must give it a larger pot in the spring, or about the beginning of March; one 14 inches in diameter will not be too large. Do not prune the plant this winter. You are more likely to get a stout shoot or two from near the base next year by leaving it alone than by hard pruning now.—**J. C. C.**

4968.—Rose W. A. Richardson.—This Rose is quite as hardy as the majority, and the south-west aspect you mention will suit it admirably. It will be better if a little natural shelter exist against the south-west winds, as these are apt to buffet the blooms and growth, often spoiling a crop of flowers. You may plant now or in the spring. Unless severe weather sets in I should plant now. You ask if it should be cut back or not. Much depends upon



Tea Rose "Marie Van Houtte."

freedom from these two diseases is a great point in their favour, as there are many of them well worth growing for the charming metallic hues of their foliage. Few things in the culture of Roses are more disappointing than to find the plants suddenly attacked with these blights, and the rapidity with which they turn the leaves rusty and shabby, causing them to drop and leave the plants bare in a few weeks or even days, makes the Tea-scented class of Roses more than ever. As a proof of their great improvement both in quality and quantity of varieties, I may state that whereas only a few

whether the plant be in a pot or lifted from the open ground. Any wood upon it in the latter case will be of little service during the coming year, and may be pruned back partially now, and the job completed in spring. If from a pot, and carrying a good healthy rod or two, wait until spring. Then only shorten the growth slightly, and follow the instructions which will appear in these pages in due course.—P. U.

— Yes, this Rose will grow and blossom well in a south-west exposure. With regard to planting—if your plant has been taken from the open ground it may be put in at once in mild weather. If it has been in a pot and kept under glass you had better defer the planting until the spring. You do not say what form you intend your plant to take, whether as a climber or a bush. If it is intended as a climber it will not want cutting back. If it is intended for a bush any long shoot may be cut back in the spring to within 2 feet of the ground.—J. C. C.

— This Rose will do well in a south-west exposure, and it may be planted now. Prune back to well-ripening wood in spring.—E. H.

ROSES AS STANDARDS.

It is not many years since the bulk of Roses were grown in this form, but probably there are not more than one-tenth so cultivated at present. Why is this? I think the majority of my readers will be quite ready to agree that the following reasons are quite sufficient to account for their evident decline in popularity; Standards do not produce so many blooms. They are much shorter lived as a body, far more susceptible to a severe winter, and cost about three times as much as the same Rose would when cultivated upon some stock of a dwarf character. In order to start upon a fair basis, I will now enumerate one or two points in their favour. They are exceedingly useful in showing off the weeping or drooping tendency of some of the prettiest climbers, and are also very showy on the outskirts of a lawn, or in the centre of a bed of Roses. But the main idea when starting these notes was to warn against ordering Roses upon the standard Brier stock before knowing if the variety is thoroughly suited. I should have no difficulty in naming upwards of fifty choice Roses which positively refuse to thrive upon standards for any length of time. The same varieties will do well as dwarfs, but do not possess sufficient vigour and vitality to be satisfactory in standard form. The question of standard *versus* dwarf Roses has frequently been mooted in the horticultural press, but like many another subject upon which there are different opinions held a middle or medium course is much the wisest. Few—I may say no Roses refuse to do well upon short stocks of the hedge Brier; and I certainly lean strongly to the opinion that most of them produce superior blooms upon this stock. True we do not secure those grand shoots from the base of the Rose which are so plentiful among the pure dwarfs, but if we get less wood with better finished blooms the benefits are about equal. For Teas and H.P.'s of a drooping tendency these dwarf or half standards are admirably adapted. I am by no means a lover of these bashful Roses, hanging their heads and hiding their charms until touched under their chin and forced to look upwards. They also catch the dirt from showers of rain whatever style they may be grown in; but this evil is got over to a great extent by cultivating them on the short-hedge Briers. However, one point in their favour must not be omitted; if dirt arising from heavy storms soils them when grown as dwarfs they escape the injurious hattering that the colder and more upright varieties are subject to.

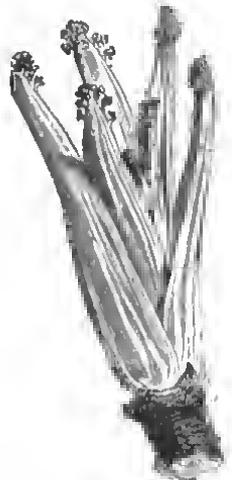
THE TEAS AND NOISSETTES do remarkably well as short standards of one and a half up to two feet, so, too, do such climbers as *Maréchal Niel*, and it is usually a long time before that mysterious disease, canker, affects this variety when growing on what I shall henceforth style the foot Brier. Very many of our successful exhibitors grow the bulk of their plants upon this stock, a point which speaks for itself. Some of the more delicate varieties are different Roses when grown upon the foot Brier, while it is very unusual to find the plants cankered at the base, or with unpurified wood at the end of the season as an

generally be found upon dwarf Teas and late-growing H. Perpetuals. Louis Van Houtte, Horace Vernet, Duchess of Bedford, and many others of similar growth have been splendidly exhibited during the past season, and will naturally be ordered by many who do not know their habit of growth. Being weak, or at the best of uncertain vigour, these varieties are altogether unsuitable for cultivation as standards, but will thrive much better upon the foot Brier. No Rose without a vigorous constitution can draw its nourishment through the length of a three to four-foot Brier, and it is only courting failure and consequent disappointment when such varieties are grown in this form. R.

THE KITCHEN GARDEN.

FORCING SEAKALE.

TO OBTAIN the earliest supplies of Seakale in a very simple way. Two boxes, each 2 feet square and 18 inches deep, are provided, and 6 inches of soil is put in the bottom. The crows are



A head of "Forced Seakale" properly cut.

especially grown for the purpose in rich soil in one of the quarters of the kitchen garden, and to have them in proper condition for forcing I lift them about the middle of October and place in the earth again. If this were not done the plants would retain their green leaves for some time longer, and then they would not force so readily. By allowing a month between the time of lifting the crows and their being placed in the boxes, I find the roots obtain all the rest required. About the middle of November one box is placed in a temperature of 60 degs. where it remains, and the Seakale is fit for cutting in about a month. At intervals of a fortnight other boxes are taken to the house, and by this means a constant supply is kept up until I commence cutting later on from plants that are forced on the ground. The great value of forcing in boxes is that when the Kale has grown sufficiently the boxes can be removed to a cooler place, so that if the produce is not wanted for immediate use it may be kept fresh for a week or two if desired. In many gardens it is the practice to take up the roots and force them in Mushroom-houses and similar places all through the season. But after the beginning of the new year I like the old-fashioned plan of placing pots over the crows. When forced in this manner the produce is, I think, of better flavour. Cutting Seakale is an important matter, and the heads should be removed as shown in the annexed illustration. J.

493.—**Storing Turnips.**—Take up the Turnips before injured by frost. Cut off tops and pack in salt in a cellar, or take up with tops entire and bury the bulbs 6 inches deep in a trench, leaving the top sticking out.—E. H.

4976.—**Badly coloured Beet.**—I have never grown the variety named. It may be badly cultivated, and is too large and coarse or too small in consequence of the hot summer. There is something wrong either in the variety or the culture, or the soil has not suited it. The information given is meagre.—E. H.

PROTECTING VEGETABLES.

With the return of frost kitchen gardeners must be on the look-out lest their crops get caught by the dread enemy of vegetation, and rendered useless after all the toil and care bestowed on them.

CALIFLOWERS of the Autumn Giant and other kinds now coming in fit for use need looking over every few days, breaking down the foliage over the heads until nearly fit to cut. Then lift the plants and either place them under cover out of reach of frost, or lay them in closely together out-of-doors where snails and litter can be easily applied.

CELERY keeps safely if well moulded up; but a covering of litter placed over the tops of the ridges keeps the frost from penetrating, and lifting is much easier done.

CARROTS are never better than when freshly pulled from the soil, and if any were sown at midsummer they will be much more tender if left in the soil than if pulled up and stored in sand or any other covering; but to get them out of the soil readily during frost a good covering of litter must be placed over the bed as soon as frost begins to penetrate.

TURNIPS of the white kinds, although hardy enough to withstand moderate frost, will not do so if fully exposed to freezing right through, and it is a good plan at this time of year to pull up the roots and lay them in trenches, covering the roots right over with soil, but leaving the tops exposed, and the flavour of the roots will be much superior to those stored under cover or to those left exposed to the full action of frost. J. G., *Hants.*

4927.—**Early Tomatoes for market.**—

I should say that it would be quite soon enough to sow your Tomato-seed in March. Keep the plants always in a state of healthy growth. I find that I get just as early crops from seeds sown at that time as if sown earlier. It is also of much importance (if you want an early crop) to sow a variety that will stand the heat required to bring it on without drawing or growing long jointed. I have grown for some years a variety which I have never seen surpassed for earliness and productiveness, combined with good quality. It is of medium size, good colour, and, I think, the best flavour of any Tomato I have grown. I get it from seed supplied by Messrs. Cannell, of Kent. The variety I ordered was *Horsford's Prelude*, and out of the plant from that seed I found one that had larger and better-looking fruit than the rest, so I decided to save the seed, and I have found it to be the best for early work, and always commands a better price than any other. I grow this year a house 4 1/2 feet by 12 feet of this variety, the fruits of which sold at 1s. per lb. A market grower at Harrogate intends to plant 1,000 plants in one house next year, he having tried it with success this year.—H. DUNN, *Harrogate, Yorks.*

4972.—**Compost for Tomatoes.**—

Tomatoes will grow in any good soil fairly manured. One of the best crops I ever had was from a piece of newly-trenched ground under a glass roof, manured with an old Cucumber-bed just before planting, and mulched with same material when the bottom trusses were set. Leaf-mould will do for mulching, but something stronger which contains more nutriment will be better.—E. H.

Tomatoes do not require a very rich soil to grow in. If much manure is added before or when planting them, they run away too gross and strong at first, and do not set or fruit well. The best material to plant them in is good, sound fibrous loam from an old meadow or hedgerow, mixed with a fourth or fifth of burnt earth, and a sprinkling of superphosphate, or, better still, of Thomson's manure. If the loam is at all heavy, you may add a third or fourth of leaf-mould, but I should keep the manure, and use it as a top-dressing, mixed with an equal quantity of loam when the plants are in full bearing. After the plants have fairly begun fruiting, they may be fed liberally with liquid-manures, guano, ammonia sulphate, rich top-dressings, and so forth, with great advantage.—B. C. R.

4961.—**Cucumber plants for sale.**—

The plants should be grown in such the same way as if to be planted out and fruited at home, but when growing specially for sale it is

necessary that they should be extra well hardened before being sent out, or the journey and probable exposure to cold air will impart such a check to plants taken straight from a warm, close house as they may never recover. Sow the seed six or eight weeks before the plants are likely to be required, placing it by preference singly in small (thumb) pots, and using a light rich compost of loam and leaf-mould, or very old and well-rotten manure in nearly equal parts, with plenty of sharp sand. Plunge the pots in a hot-bed at 75 degs. to 80 degs., with an overhead temperature of 5 deg. or 10 degs. less, and unless the bed is already close to the glass, move the pots up well into the light directly the seedlings appear. When strong enough, and the pots getting full of roots, shift them into 3½-in. or 4-in. sizes, using the same compost, but making it firmer than before. Water must be given freely, and a nice moist atmosphere be regularly maintained. If necessary the plants may be shifted on again into 5-in. or 6-in. pots, but take care to handle them off well before sending out. I have always found Cucumber-plants sell best either early in the season—in February and March—or later, towards the end of May or the early part of June, when people are clearing their houses and pits, and want something for a summer crop.—B. C. R.

— Sow the seeds singly in small pots, and plunge in bottom near glass. The plants so raised should be sold, if possible, as soon as they have made one or two rough leaves, otherwise to keep them mowing on they will have to be shifted into 4-inch pots, and this adds to the cost of carriage. Plants in small 60's if carefully packed can be sent safely by Parcels Post. They may be packed as follows: Envelope the pot in warm, dry Moss, tying it round with matting. Place one stake to the plant in the centre of the pot, and tie the plant to it. Then place four stakes round the sides of the pots, bring them over the plants at the top, and secure them together. Run some soft matting round the stakes from bottom to top, and place a covering of paper over both plant and pot, and tie firmly. A dozen plants might be packed in a moderate sized box, as they may in any way without taking any harm. Boxes are warmer than baskets for packing, especially for sending long distances.—E. H.

4965.—Potatoes in a house.—Fifty-five days, night temperature will be high enough till the days begin to lengthen. The house should be a light one for potatoes. Earth up the plants as they grow to keep the stems erect as long as possible. Give liquid-manure about the time the tubers begin to form. Give air freely when the weather is suitable.—E. H.

CABBAGES AND THEIR CULTURE.

At one time we seldom could prevail upon the cook to send any kind of Cabbage to the dining-table, though Brussels Sprouts were, during the winter and early spring months, in great demand; now, however, the latter are rather despised and Cabbage is in favour. This change has doubtless been brought about owing to the short-lived admiration of coarse, strongly-flavoured sprouts; while the Cabbages of recent introduction are decided improvements, as far as quality is concerned, on the older sorts. A small, quickly-grown, and not too closely-packed heart of Cabbage, at any time during the winter or spring months, is really superior to any kind of winter green vegetable, not even excepting Broccoli, and I am glad to find they are now better appreciated by all classes of society than formerly. There are several small, or comparatively small, varieties to choose from, either of which will be found more profitable, and certainly of a better quality than the much coarser sorts that used to be thought best for autumn sowing. Ellam's Early Dwarf is of quick growth, fairly hardy, and of superior quality. Reading All Heart is quite a little gem, and we have good reason to be well satisfied with Veitch's Matchless. Wheeler's Imperial, if supplied true to name, is scarcely so tender and mild in flavour as Ellam's, but, on the whole, is yet one of the most reliable small sorts that can be grown. It is very hardy, and I had it good throughout last winter. At least two or three varieties ought to be grown, as it sometimes happens that the season that suits one may be unfavourable to another, and by growing several varieties, some of them are almost certain to be

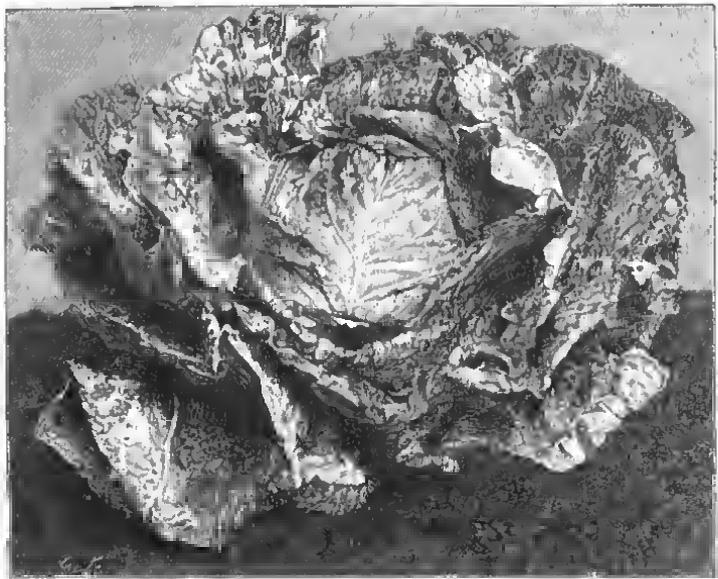
extra good. If larger sorts than the foregoing are needed, the well-known Enfield Market, Heartwell Marrow, and some of the Drumheads may be grown, these under good cultivation producing very fine, tender heads. A good type, Dwarf Drumhead, is here figured. Other good Drumhead Cabbages adapted for market work are Early Drumhead, Dax Drumhead, Quintal Drumhead, Early Dutch Drumhead, and the Hundredweight, or Mason's Drumhead Cabbage. Such are best for the market, but they are too large for home consumption, and, besides, they form too many leaves to be profitable. The

GROUND BEING WARM, the seedlings will grow rapidly, and instead of making our first sowing early in July, it will be about the middle of the month before it is done. In colder seasons, or in late localities, we would sow seed early in the second week in the month, and again at the beginning of August. It is always advisable to sow a second time, say at about an interval of fourteen days. Some seasons the early-raised plants are apt to bolt, or run to seed prematurely, and, consequently, if no second sowing had been made, a general failure would be the result. Raise sufficient early plants to fill half the proposed bed, and complete the plantation from the second sowing. If one batch fails, complete failure will yet be avoided, and if both the well so much the better, as a long and acceptable succession will be secured. For the seed-beds I select a good open spot, a free-working soil being preferred. The weather and ground being dry, the latter is well watered a few hours previous to sowing, after which it can be raked down finely. It may be again moistened, then if the seed is sown thinly broadcast, and covered with fresh, fine soil, the moisture will ensure a quick and even germination. If kinds are troublesome, they may be kept off with fish-nets, branches of trees, or lines of cotton strained a few inches off the surface of the ground. It is not advisable to water the plants in the seed-beds until they are ready for transplanting. Then, if the ground is hard and dry, a heavy watering given a day or two previous to drawing them will start the growth of fresh root fibres, and facilitate lifting without giving a severe check to the plants. Few need to be told that Cabbages well repay for

GENEROUS TREATMENT—in fact, if grown on

as soot, lime, salt, singly or in mixture, and not infrequently some kind of artificial manure is also given. In all probability the Onions do not half exhaust this liberal supply; at any rate, there is always abundance kept in the soil for the next crop. As before stated, firm ground suits Cabbage, and all that is necessary, therefore, is to hoe over the surface of the bed and clear off the weeds. Drills about 18 inches apart for small, and 2 feet apart for the larger sorts may be drawn with a hoe, and the plants put out either with a trowel or dibber, according to the size of the ball of soil and roots. They ought to be sturdy stuff when put out, be firmly planted, and, if the weather is dry, watered in. We dispose the small sorts about 12 inches apart in the rows, but if they were hit to give second or third crops of hearts or greens, they would be allowed another 6 inches. Sometimes an old Cabbage bed is found very profitable, but we find fresh or summer-planted breadths of Caldworts superior in every way, and these do not rob the ground so much. They are planted 1 foot apart each way, and usually in succession to the autumn-sown or Tripoli Onions. Before the young plants are far advanced they are lightly mulched up, this both stealing and protecting them. If we wanted extra fine heads early in the spring, the furrows raised by moulching up the plants would be filled occasionally with liquid-manure, this soon getting extra vigorous into the Cabbages. It should be remembered that firm and dry ground is usually much the warmest during the winter. Being naturally drained, the worms contributing to this, it is much less liable to become saturated with moisture, and is warmer in consequence. We are not troubled with

CLEANSING OF THE ROOTS, but this disease is frequently prevalent on light lands. The best preventive in the case of old gardens is trenching, and plenty of soot and lime well stirred into the surface of mowing ground is beneficial. A dressing of gas-lime applied in the autumn and well forked into the surface has been found a remedy for chalking; but this has to be on the ground several months before Cabbages or anything else can safely be put out. If this is used spring planting must be practised. If the disease is not very widespread, the plan of trenching off the knotted roots from the plants when drawn from the bed and then pulling the



OUR READERS' ILLUSTRATIONS: Cabbage "Dwarf Drumhead." Engraved for GARDENING ILLUSTRATED from a photograph sent by Mr. Norman Blake, Bedford.

poor ground they are almost certain to be slow in growth and tough when cut. A loose rich soil favours rank growth, and this again is objectionable. No better site for a Cabbage bed than the ground just cleared of Onions can well be found. This is almost always very freely manured, and deeply dug, and in addition receives one or more dressings of such fertilizers

remaining roots in a mixture of clay, soot, and lime, will sometimes cure it. M.

4974.—Good loam.—A really good loam for potting purposes should be fibrous—i.e., have in it the decayed roots of the Grass which grow upon it. The best loam (turf loam) is the first 2 inches of an old and well-mended pasture.

This is pared off in a similar manner in turves for turves, stacked up with the Grass side downwards, and allowed to stay for at least a year. The more is the ideal turfy-loam, the use of which is easily recommended, but which is very expensive and difficult to obtain, except in a few favoured instances. "Constant Reader" will find the mole-hills, mixed with more or less leaf-mould and sand, according to the purpose it is to be put to, and also the nature of the loam, will make a good compost for general purposes. Mole-hills and decayed vegetable refuse, or the remains of an old hot-bed, with the loam, will also be very useful.—P. U.

— Although good loam can be found in many parts of the country, there is generally a difficulty in getting it, and, as a rule, gardeners on the estates where it is to be found are the worst off in this respect, as they are not allowed to get it. The best loam is that of a fibrous character, which generally may be found in public commons or on hill sides. Ordinary turf rotted down and mole-hills used with it in equal parts, with a fair sprinkling of sand, will make an excellent compost for general use in the garden.—J. C. C.

— Loam may be roughly described as a virgin earth of a more or less alluvial character, and yellow, red, or light-brown colours. It varies from nearly pure sand on the one hand to clay on the other, but the medium is best for most purposes. Loam of fairly good quality can usually be found in most districts, and the best is that from an old pasture or meadow, cut about 4 in. thick, and laid up in a heap until the Grass is dead. It is then full of decaying fibre, and with a little rotten manure or leaf-mould will grow almost anything.—B. C. R.

— Good loam is the top 4 inches, including the turf, of an old pasture where cattle and sheep continually feed. Mole-hills do not come under the gardener's idea of good loam; the gardener wants the turf and the fibrous roots to enrich the soil as they decay. There is nothing of this sort in the mole-hills.—E. H.

ORCHIDS.

CYMBIDIUMS.

I am asked to say a few words about these orchids by several readers, some mentioning one species and some taking another, so that I may take it as an indication that these plants are becoming extremely popular, and so it is well for those who have these plants under their charge to ask for what information they require now early in the season before they begin to flower. I will therefore devote some of my space to reviewing the various showy kinds of the genus. Some few of these, however, I omit because I think they are too scarce and too expensive to be in the hands of the readers of this paper; but the kinds here named are of surprising beauty, and they are, moreover, easily managed, mostly requiring cool treatment. There is one thing, however, which I would warn my readers against in the cultivation of these plants, and that is to guard against giving them too large a shift. There is another thing because they thrive in more solid earth than many kinds of Orchids that they will, therefore, take a mixture of manure, and I have seen plants that were so treated a few years ago which have been getting smaller ever since, and they have never flowered half like they did the year before this manure took place. The Cymbidiums are all thick-rooted plants, and as they root very freely they require ample space for them to spread in, with a fair amount of soil, so that they are not disturbed every season. Many of the kinds come from considerable elevations, say some 5,000 feet or 6,000 feet or more, and these require cool treatment, but others are more tropical kinds, and need more warmth; but I will indicate these when describing them. Good drainage must be given them all, and the soil should consist of good turfy loam, fibrous peat, and leaf-mould, to which may be added some chopped Sphagnum Moss and some sharp silver-sand, pressed firmly down, and not raised above the pot's rim, which admits of the plants having a better supply of water to their roots, and this they must have, but at the same time the surplus quantity should be carried quickly away, and not be allowed to stand and stagnate upon them. The temperature should be about as cool as that of

the Cattleya-house in the winter months, and in the summer-time the heat of the Odontoglossum-house will be all that they require, differing, however, from the Odontoglossums in liking good exposure to sun and light.

C. BRANTLEY.—Of this plant I have a flower from "G. T.," asking its name and its treatment, the first of which I have given, and it is a very good form of the species, being large, over 4 inches across the sepals, and petals being of a yellowish-green, streaked with lines of reddish-brown, the lip being much blotched and spotted with red. It always blooms at the latter end of the season, the flowers lasting long in perfection. This Orchid comes from Sikkim and Nepal. It is a mountain plant, and grows at about 6,000 feet elevation, but it does come lower down. The temperature already indicated suits this plant well. It likes an abundance of moisture during the summer months, when it does not in any way object to strong heat. It must be also borne in mind that these mountain-plants require plenty of air. Indeed, to stifle these plants up as I have seen them done, appears to me to be the very worst system for these and any other Orchids, and its persistence in is sure to lead to failure and disaster. Therefore I say, be sure to have these plants well ventilated.

C. LOWIANUM.—"C. D.," "M. G.," and others that have sent in a request about this plant will find them all answered in the following lines, and those of my readers having plants sufficiently strong to flower will now begin to see them pushing up their spikes. These continue to grow for two or three months before attaining their full size, when their flowers begin to open, and they continue to display their beauties for some three or four months longer. This plant was sent home by my old friend Boxall to the Messrs. Low, of Clifton, for the first time some sixteen years ago, and those having any unflowered plants of it must look out for their blooming, for from amongst them may spring up another grand type of the fine C. Tricorymum. The only plant which has yet flowered came from a hatch of C. Lowianum, and from which it presented no appreciable difference, but when in bloom it is a grand and beautifully distinct kind, and it is a very valuable plant. The only specimen I have seen of it at present is the plant which exists in the collection of the Baron Schroder, and which came out of my friend Tracey's collection at Trichenham. This C. Lowianum varies somewhat in colour, the most distinct being the variety which is named C. Mauldinum, the sepals and petals of a pale apple-green, and the lip is bright yellow, white at the base, very distinct, and a striking contrast to the normal state of the plant, which is very beautiful and showy, having a long stout raceme, bearing from one to four dozen of its large flowers, each measuring nearly 4 inches across, the sepals and petals being greenish-yellow, streaked more or less with deep reddish veins. The side lobes of the lip, which stand erect, but which do not enclose the column, are light yellowish-white; the middle lobe is white at the base, and the front part stained with a rich deep-violet-crimson with a pale, narrow marginal border. These, as before remarked, last several months in full beauty. This plant forms a beautiful large specimen for the centre of a house, and now it is showing up its spikes it should be given a slightly warmer atmosphere, and it may have also a little more water than has been given them for the last month or two.

C. DRAGONIA.—"H. H." says of this fine species he has a plant, bought at the sale of M. Seegar's collection, but now he doubts its being the true kind, only because the plant is growing well, and he hopes it will flower? Well, it may do so, as the plants sold at that sale were strong and in good condition. The plant is a broad-leaved, dwarf-growing one. It makes pendent spikes of bloom, which are from a foot to 18 inches long; the flowers are numerous, and about an inch and a-half across; the sepals and petals are soft green, with dotted lines of deep-purple; the lip is deep-crimson, having a large spot of deep blackish-purple at either side near to the throat. Although not so showy as those previously named, it is a very handsome species, and until the present season it has been one of the rarest in cultivation. This plant likes to be grown in good peat-fibre, and it also likes the temperature of the Cattleya-house. It comes from Northern India.

C. EBURNUM is a beautiful species, having narrow leaves of a deep bright-green. This obtained the name of a bad grower and a shy bloomer, but this came about through bad treatment in keeping it both too dry and too hot, and so in my young days it was quite an exceptional thing to get a plant with even a few blooms upon it. Now, however, it is treated more rationally and cool, never letting it become dry. It grows exceptionally well, and flowers profusely, so that we have here a large pure-white, waxy flower, which measure some 3 inches or 4 inches across. These are also very fragrant, and last long in full beauty. There are one or two varieties of this plant, differing in being more or less spotted. This comes from about the same altitude as the previously-named kinds, and thrives under the same conditions.

C. THURSONI.—In this we have a very different plant. It comes from Barmah, but although from this warm part of British India, it comes from about 4,000 feet altitude, and so it comes into about the same category. It is just about thirty years ago since this plant was received by Messrs. Low, of Clifton, from the Rev. Parish, and a few years since I saw it in the very best state I have ever seen it with Mr. Shuttleworth, in his nursery at Clapham-park. The flowers are borne about four or five together; these are green, more or less spotted with reddish-brown; the lip yellow, streaked with reddish-brown.

C. MASTERSI.—This comes very near to C. eburnum, and, indeed, it has the appearance of that plant very much when not in flower. This plant was found by Griffith, nearly sixty years ago, so that the plant is well known in British gardens. It occurs in various parts of Northern India at some 6,000 feet elevation. It flowers in the autumn months, bearing a short raceme of white flowers, with a yellow throat, and these have a delightful fragrance. Some forms have a beautifully spotted lip, and these have received distinctive names, but all have thin flowers in short racemes.

C. ELEPHANS.—This plant is the one which the genus Cypripedium was established; but there is not much difference in the plants that are put into it. It was found in Northern India about the same time and in the same place as the previously named plant. It produces dense pendulous spikes, the flowers being of a pale-yellow, but not fully opened. This has been a very rare plant in our collections; although introduced nearly sixty years, it has not been cultivated to my great extent. Beside the above there is the old C. penhulm, which is figured in Curtis' *Botanical Magazine* in 1797 under the name of *Epidendrum albidum*. Another is C. grandiflorum, C. Finlaysonianum, and the variety adnatum. C. Hookerianum, which I really do think is different from grandiflorum. All these plants have fine flowers, and are well worthy of a place in every collection.

MATT. BRAMBLE.

CELECYNE GARDNERIANA.

I AM in receipt of some flowers of this elegant and somewhat rare plant from "John Jenkins," asking if I can tell him how to manage it after flowering? Well, I will try to tell him all I know about it. I had the plant growing with me through the fifties and part of the sixties in some quantities, when it was considered quite a rare Orchid. It was found originally by Wallich, but it was left to my old friend Gibson to first send the plant home to our gardens, and Paxton flowered it at Chatsworth. The spike is pendulous, and the flowers are prominent, purest white, stained in the lip with pale lemon-yellow. It lasts long in full beauty, and when it is just flowering it should be hung up in the Cattleya-house, and be well exposed to the light, and this plant should be kept moist, and it should never be allowed to become quite dry. It should be potted in rough fibrous peat and Sphagnum Moss. The pot or basket in which it is grown must be well-drained, and the soil should be made up into a mound above the rim, and kept fairly moist all the year round. This plant likes plenty of sun and light, but yet it requires to be shaded from the sun when it is too strong. It likes the warmth of the Cattleya-house, but after the growing season is done it should be moved into the warm end of the Odontoglossum-house, and after the flowering season is over the plant should be put into the Cattleya-house, and not started into growth until the spring.

MATT. BRAMBLE.

OUTDOOR PLANTS.

SINGLE PÆONIES.

THE PÆONIES have been exhibited in excellent condition at the metropolitan flower shows this year, the double varieties of *P. albiflora* being numerous and very good, and the colours of the most varied kinds. Some of them are deep purple, purple-crimson, crimson, carmine, pink, delicate rose, bluish-white, &c. Amongst them the single forms of this species were very attractive to the visitors. They were distinct in character from the double varieties, and are certainly more elegant. The many species now in cultivation in our gardens form a noble and distinct feature in May. I grow thirty-three species and varieties of species, but this being a rather late season they were not fully in flower until the last week in May. Although not much known at present in English gardens, they were cultivated many years ago, and some of the prettiest of them have been longest known. *P. tenuifolia* is a very elegant plant with finely divided leaves, distinct from any other. The large crimson flowers with yellow stamens are very striking. It is stated to grow "naturally in the Ukraine and about the precipices on the borders of the Volga," &c. The first to

from wet. In my garden it stands well enough. *P. Emodi* was next in order; it has large cream-coloured flowers with golden anthers. It is said to be more tender than any other species, being a temperate Himalayan plant from Kummou to Cashmere. *P. triterinata* has flowers of good form, rose-coloured. This is distinct both in leaf and flower. *P. peregrina* compacta and *lyzantina* also flowered with this group, and are distinct from the species. All the above flowered the last week in May and up to the 6th of June, when the following were noted: *P. humilis*, a dwarf species with rosy-purple flowers and yellow stamens, the plant dwarf and compact; *P. Wittmanniana*, creamy-white, very distinct. This was said to have yellow flowers, and was introduced so long ago as 1842. It was discovered by a certain Count Worouzz in Alaharia. Dr. Lindley also stated that 25 guineas were demanded for a plant of it. Broteri had rich-crimson flowers with yellow anthers, the plant dwarf and distinct. Brownii is very distinct; it is planted on the rock garden, and is a neat-looking little plant, but so far I have failed to flower it. *P. Russi* has well-formed crimson flowers, with a mass of bright-yellow anthers; the leaf and plant distinct. The true *P. albiflora* and varieties *laciniata* and *rubescens* flowered freely, and are

4600. — **Plants for a herbaceous border.**—I would recommend the following as all being good hardy free-flowering plants, and of about the average height you mention: *Achillea ptarmica* alba pl., white free-flowering, one of the most useful plants grown; *Anemone japonica* H. Jolbert, white, and *A. japonica*, rosy purple, universal favourites; *A. fulgens*, dazzling scarlet, handsome; *Matricaria inodora* pl., white; *Scabiosa caucasica*, lovely pale blue; *Dianthus Napoleon III.*, bright red, pretty; *Gypsophila paniculata*, white, an extremely elegant plant, fine for bouquets; *Lychnis chalcidonica*, fl. pl., fine bright scarlet; *Chrysanthemum maximum*, white, fine; *Dielytra spectabilis*, pink, one of the finest herbaceous plants; *Trollius europæus* (Globe-flower), yellow. *Papaver orientale* (Oriental Poppy), scarlet, with black spot; *P. nudicaule* (Iceland Poppy) orange-red, white and yellow, great favourite, fine for cutting; *Coreopsis lanceolata*, yellow, very showy; *Rudbeckia speciosa*, yellow, black centre, very handsome. *Campanula carpatica*, blue, and alba, white; *Centaurea montana*, blue; *Antirrhinum filiastrum* (St. Bruno's Lily) elegant spikes of pure-white flowers; *Aquilegia glandulosa*, blue and white, fine; *Spirea palmata*, rosy-crimson, one of the most beautiful hardy plants in cultivation; *Yucca filamentosa*, tall spikes, covered with white flowers, noble appearance. — E. J. P.

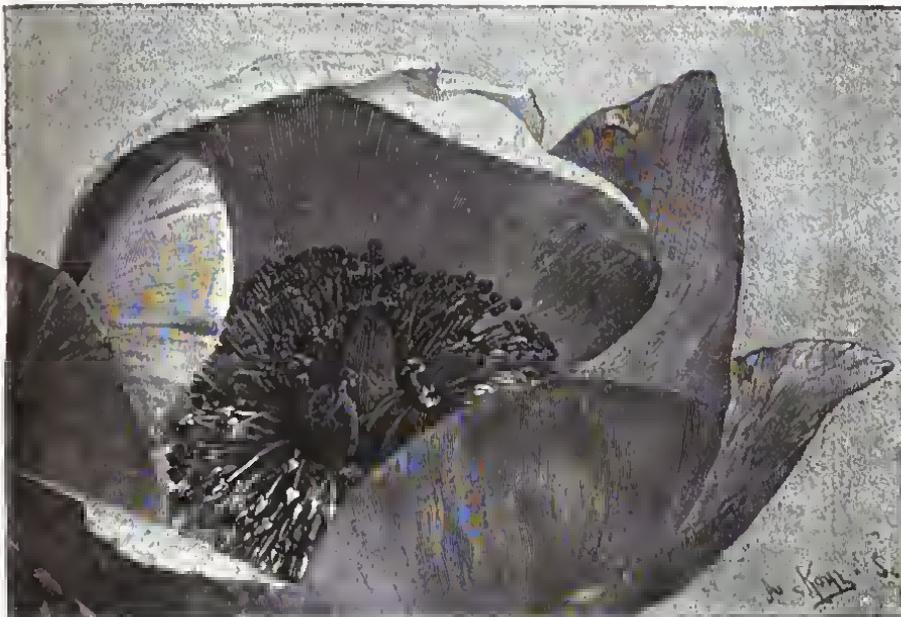
4917. — **Japanese Anemones.** — The present month is a good time to plant the above in your garden. They are exceedingly handsome plants either for borders or rockwork, and where cut flowers are required for house decoration are most useful, the white variety (*A. jap. Humorie Jolbert*) being a most profuse bloomer, and specially adapted for this purpose. *A. jap.*, with its large red flowers, and *A. jap. elgicus* (rose) form a nice contrast to the above. — E. J. P.

4962. — **Planting Gladioli.** — There are several sections of Gladioli, early and late flowering forms, some species, but the majority beautiful hybrids. The time to plant is sprig—ray, April—not now, as Gladioli are not really hardy, and frequently get killed in the winter months when the position is very favourable. Gladioli are best when planted amongst such things as Dahlias, although if there is space a bed of *G. breucheyensis* makes a brilliant picture in early autumn. The soil must be well prepared, and the bulbs put in bold clumps. Good turfy loam is the best soil, and at this time the bed or soil in which the bulbs are to be planted in spring should be thoroughly well dug up, and plenty of old hot-bed manure incorporated with it. — C. T.

— Plant Gladioli in March and April. A good loan enriched with old manure will grow Gladioli well. — E. H.

LIFTING AND REPLANTING HARDY PLANTS.

FINE weather without frost in November gives the hardy plant grower the chance of going through the stock, lifting, dividing, and replanting where necessary; but it is not wise to lift everything in the borders and to manure and dig the ground all alike, for some plants are better left untouched till spring, others resent frequent disturbance, while others again do not need it, and all vary in the amount or kind of manure they want; some will assimilate a large quantity and some are better without any. When this is borne in mind it will be seen that any attempt to treat all alike would be folly, and that the better way will be to decide on the proper site for each plant. After Carnations are planted no time should be lost before commencing the work, and in some cases it would be even better to take it in hand earlier if possible. First, attention should be given to those things which are intended for naturalising in out-of-the-way places, which cannot easily be got at in bad weather, as by leaving these till last a serious loss is often lost, or the plants have not a fair chance of establishing themselves. This question of naturalising requires much fore-



A Single Peony (*P. Wittmanniana*).

flower with me was *P. peregrina*, another crimson-flowered Levantine species with large bold leaves, but not so striking as those of some kinds. It was cultivated by Miller, and also by Mr. Salisbury at Brompton. The next to open its flowers was *P. decora*, not the most handsome species, but the flowers were a distinct purplish-rose. The downy leaves of *P. mollis* are distinct from those of any other Peony; the flowers deep-purplish-red; anthers bright-yellow. *P. aretina* and *P. aretina Baxteri* are two good sorts; the first has rosy-crimson flowers, and the variety *Baxteri* crimson; they flowered about the same time. The common *P. officinalis* in its single state was very pretty, the flowers being of a rosy tint, the petals rather crumpled. This plant was cultivated in England as long ago as 1548. In Parkinson's time single and double forms were cultivated. The variety *anemoneiflora* flowered with me also. In this variety the flowers are purplish-crimson, and the yellow stamens are replaced by numerous purplish filaments. The plant has been sent from a certain Prince de Salin Dyck about 1830. *P. anomala* came next in order; the flowers crimson, set off by lanceolate leaves. It is not very striking as a garden plant, but interesting as a distinct form, and it is termed the jagged-leaved Siberian Peony. It is stated to perish in gardens in winter, not from cold, but

the most beautiful amongst the single Peonies. They are all very easily grown, and I do not care to rot them up in pots; even the little *P. Brownii* takes its chance out-of-doors. The border where they are growing has been deeply trenched and well-manured. Some decayed manure was also placed on the surface during the winter, but even this is not necessary, as they seem to be all perfectly hardy. They need only to be left alone and will in time grow into large specimens. J.

"4878. — **Outdoor plants.** — In my own practice I like to get as much of this work done in autumn as possible, because it eases the spring work, and it is an advance, especially in the case of spring or early summer-blooming plants, to get them established before winter sets in. Then, again, in the average herbaceous border there are bulbs of various kinds, and it is better to move these in autumn, than wait till spring. When borders are rearranged and manured it is not always possible to get the replanting done before Christmas, and then it will be as well to wait till growth becomes active, say in March. — E. H.

Lime and coal-ashes. — Ashes and lime are useful to open up heavy land. Put ashes and stable-manure on your beds in the land up roughly, and let it lie for the winter. In the spring, just before planting the crop, give a dressing of lime and fork it in. — E. H.

thought, and if this is not given failures will be more frequent than successes, for there are many things to look at in planting in places which do not often come under the eye, and there are many enemies to contend with unless one wishes to court failure. There are not many effective plants grown in the majority of gardens which can be naturalised successfully and allowed to take care of themselves for any length of time, and if plants outside the limit are chosen, the grower must be prepared to devote some time to keeping the groups free from weeds at least. Bulbs of most kinds should be planted at once if this is not already done, for the sooner they commence root action the finer the flowers will be. Irises are all impatient of removal, and must be left alone if possible; but when planting is imperative, early autumn is the best time to do it; this sometimes saves a year in the time of flowering, though little must be expected of them for the first year. Some of the Helianthus occasionally get killed in a severe winter, but I find that divided pieces often escape when established clumps suffer. Anemones are best done soon after flowering. Anemone japonica alba I have found grows better when autumn-planted. This plant acts very differently in some soils to what it does in others, for sometimes it becomes a troublesome weed, but in light sandy soils increase is very slow and it never gets out of bounds. Alliums, such as A. Moly and A. neapolitanum, may be broken up and replanted now if necessary. Asters (Michaelmas Daisies) and Doronicums enjoy frequent division and plenty of manure. Many of the Campanulas are better for breaking up, replanting only the strongest crowns. Chrysanthemum maximum, the perennial Centaureas, Geums, Mertensias, perennial Poppies, Monardas, and many other things well repay attention, and in our light soil I find that some plants generally supposed to do best when divided in spring, such as Delphiniums, Phloxes, Trachelium, and Primula Larpentae, do equally well when autumn-planted, and are well out of hand before the spring comes upon us. J.

CHRISTMAS ROSES.

The Christmas Rose is a good plant for the smaller gardens. It is a familiar flower by name, but not often seen grown well, as it likes a rather damp, shady position, which cannot always be given. A variety of *Helleborus niger* named *maximus*, and is known under several synonyms as *major*, *gigantens*, and more commonly *altifolius*. It blooms earlier than the type, opening its large white flowers in November, and both leaf and stem are mottled with purple. This kind and St. Bridget (white) are the best of the many kinds in cultivation, not forgetting the type. If there is a little ditch in the garden, the sites shingly and moist, establish the plants there, and they will develop into broad, leafy clumps, a pleasure to look at even when flowers are absent. If to be planted in the border, let the soil be of a good, light, bony character, and not likely to get stagnant, as, although Christmas Roses want moisture and partial shade, they will not grow in water-logged spots. Another place for them is by the margin of shrubberies, if the soil is not exhausted by the shrubs. Where a small quarter is set apart for getting flowers for cutting, the plants should be covered with a bell-glass when the buds are coming on, and the bloom will be earlier and purer than if they were in full exposure. Another way is to pot them, and a few patfalls in the greenhouse are enjoyable, as one cannot always go into the garden; the flowers, too, in bad weather, getting much sullied, unless the clumps nestle safely in the more sheltered spots in the rockery. Large specimens, either put into baskets or piled up with light soil or Cocoa-nut-refuse, will, if placed in gentle heat, provide a splendid lot of flowers, and so pure that they can be used in the choicest decorations. They must not, however, be too much excited into growth, nor directly they are past their best placed out where they are likely to suffer from frost. Hardy plants of all kinds do not relish artificial heat. The *Helleborus* after being forced, so to say, this year, should be left alone next, as they cannot stand being lifted and potted every year. Christmas Roses are not difficult to propagate, and may be raised by seeds or from

division of the roots. The best way for amateurs who only want a small increase of stock is to propagate by division of the roots. The place in which they are to be planted must be well prepared, and the crowns divided with a sharp knife. The time for this is the spring, and during the ensuing summer give ample supplies of water, also mulching with Cocoa-nut-refuse or well rotted horse-manure. V. C.

TREES AND SHRUBS.

WEEPING TREES.

GRACEFUL in outline, elegant in growth, impressive and attractive in appearance, weeping trees possess all those characteristics which render them especially valuable for the embellishment of landscape, park, and lawn. This peculiarity of form among weeping-trees is a precious one, inasmuch as the contrast between the rigid upper portion of the tree and the pendulous outer and lower parts forms a very striking and attractive feature, quite distinct from the aspect usually presented by other trees. But for all this they require to be employed discreetly, or the good effect which they are capable of producing is destroyed. They should be planted sparingly, and not near one another, and carefully selected and suitable sites must be chosen for them, or half their charm will be lost; when met at every turn or too often repeated their interest and attraction are greatly diminished. They



Weeping Ash at Cawdor Castle.

should never form large groups or masses, nor be mixed up with other trees in belts or borders. In the hands of a skillful planter they are capable of producing the most charming results, and are more effective in giving character and expression to a landscape than any other trees. The Weeping Ash (here figured), as is well known, is a tree of great beauty, and so is the

WHITE-LEAVED WEEPING LINDEN (*Tilia argentea pendula*), which is a handsome, drooping variety, with large, round leaves of a greyish-green colour above and silvery-grey beneath. Worked upon stakes standard high the branches shoot out almost horizontally, and as they increase in length bend gracefully towards the ground, giving to the tree a decidedly pendulous character. Being a strong grower, it requires to be vigorously pruned to keep it in shape. In this way it can be trained into a round symmetrical head, and will always be found a desirable addition to any collection on account of its distinct silvery foliage, which contrasts effectively with the deep-green of other trees. G.

Pruning and clipping shrubs.—Many questions are asked in GARDENING about the best way to clip or prune shrubs, Conifers, and such-like things? This shows that much of it is done, and we know from observation that the beauty of shrubs in both large and small gardens is spoilt by the absurd long process

The fault in the first place is in planting them too thickly together, and the clipping has to be done to prevent them overshadowing everything else in the garden; but the better way is to remove one here and there to enable those remaining to develop their natural beauty. A shrub is a beautiful object, but made objectionable by clipping. Conifers when clipped are deprived of their true elegance and beauty, and when hacked about carelessly never recover their true character. In dealing with Lilacs, Weigelas, and shrubs of this kind so commonly seen in gardens, the proper way is to remove crowded-up growths to give the younger wood space to develop. The suburban amateur gardener takes, I fear, the London parks as his model, where the shrubs, as a rule, are wanting in variety, and regularly clipped in to make them uniform to a set space. They lose their natural beauty, and are a positive eyesore in many cases. Each autumn the ground about them is regularly forked up, destroying fibrous roots in the process, and the effect of such treatment above and below is to produce ugly, stunted bushes. It is unnecessary to write against Privet, Aucubas, and common shrubs being planted in gardens until one gets heartily sick of them, as lists of beautiful flowering trees and shrubs are given from time to time. Gardeners of any kind, whether in town or country, can never be made beautiful unless a good selection is made, the shrubs well planted, left alone to develop their natural beauty, and not dug amongst in the autumn. Aholish *Aranarias* from small gardens. They are rarely satisfactory in big places, and the complaints frequently made about lower branches dying off is through the soil and situation being unsuitable. — F.

4979.—**Lime-trees.**—The red-twigged Lime will flower as soon and as freely as any. Alba, the white-leaved variety, has rather larger flowers, and is about a fortnight later. It is rather difficult to say at what age a Lime-tree will come into bloom, as so much depends upon soil, situation, and other local matters; but a great number of flowers will be produced till the tree is from fifteen to twenty years old. Limes are generally propagated by layering in autumn. What are termed studs are kept in nurseries for the purpose. Studs are old plants which, from being frequently cut back, throw up annually numbers of young shoots. E. H.

4980.—**Quick-growing Ivies.**—It is scarcely wise to give lists of Ivies, as they vary so greatly in name in different gardens. The following, however, may be recommended and are fairly accurately named in most nurseries: Emerald Gem, or Green, as it is sometimes called, is one of the finest, the plant making very rapid growth, and producing a wealth of rich-green leaves. It shoots up remarkably well, and does not get straggling or leave bare spaces in the walls as in the case of many kinds. This should be selected amongst the deep-green-leaved kinds, and if you wish for one with a very large leaf, almost as big as a plate, choose *Riegeriana* or *dentata*. It is better for planting against out-buildings than a wall. *Glyna* and *atropurpurea*, which has bronzy-purple leaves, are also very fine, particularly the last-mentioned, an Ivy which we do not see sufficiently of in gardens. Its foliage is quite of a self-purple chocolate tone, very rich during the winter months. One would scarcely believe how tender some kinds are, as *algeriensis*, which last winter I saw practically killed, the leaves browned as if they had passed through a fire. In selecting variegated Ivies carefully avoid those that make a patchy growth. *Mudicronis* variegata is really too straggling. It is not sufficiently hardy for general planting, although were used, perhaps, than any other variety. H. aurea elegantissima, Gold Clouded, Lees Silver, and variegata elegantissima are good kinds, for the most the leaves being very distinctly and attractively coloured. Plant Ivies well, preparing the soil carefully for them, if it is bad, and through the first summer help them with liberal supplies of water when the weather is dry. The common Ivy of the hedgerows is very pretty and its leaves varied in colour, and pleasingly veined. I once planted a wall with it. It took some little time to establish, as the bits were cut from the hedge-grows, but once it obtained firm hold grew vigorously. The second year the shoots were cut down pretty closely, and the growth then made was proportionally robust. — C. T.

THE BETTER KINDS OF TULIPS.

As bulbs are now being planted, it would be well to get a few of the better kinds of Tulips in gardens—not the Dutch varieties, which are very fine, but often repeated in gardens. The flowers of the species and varieties are superb for colour, and a few clumps in the borders tell well. Such kinds as T. Chusiana are dainty Tulips, rather expensive, and rather troublesome to do well, requiring a warm soil and position. It is rather T. fulgens, T. elegans, T. macrosepa, and T. gesneriana that deserve to be well planted in gardens for their colour. T. fulgens is a tall, stately form, the flowers of deepest crimson, and T. elegans is a beautiful Tulip, the flowers very rich crimson in colour, and the single reflex, T. macrosepa (carmine), the fine T. gesneriana (often so beautiful in cottage gardens), T. retroflexa (bright yellow, with the segments reflexed at the apex), and T. viridiflora (green, with borderings of yellow) are all worth planting; but get the first three mentioned before the others, and the bright little T. persica, a very dwarf kind, the sweetly-scented flowers in the bud are of a coppery tint, but often of a bright yellow. The bulbs vary from one shilling to half-a-crown a dozen, so are rather expensive to plant freely. T. Greigi is very shiny, the flowers orange-scarlet in colour, and the leaves bold, glaucous in colour, bloomed with a chocolate colour. It is a very expensive species, however, although introduced many years since, but it is not always satisfactory. A small bed of it on the outskirts of the lawn is showy, and the bulbs are hardy, liking a light soil and open position. The Parrot Tulips are comparatively cheap, and the quaintly-shaped flowers, coloured in a quixotic and bizarre way, are delightful, the flowers being exceedingly interesting, and the colours often the most brilliant, the segments splashed with crimson and yellow, and gashed at the margin in a curious way. One seems to lose sight of such fine Tulips as those mentioned in modern gardens; but bold clumps in the borders or beds are very beautiful in early May, or they bloom later than the Dutch varieties in May. F. C.

TREATMENT OF TUBEROSAS.

HAVING a batch of these sweet-scented and popular flowers now in bloom, and which will last well over Christmas, a few notes upon their treatment may be useful. As a general rule, these bulbs are grown in a temperature much higher than the average amateur can command, and it is very seldom that we find them well done by the unprofessional grower. There is not the least need for strong heat to secure a good batch of these flowers during late autumn and winter, and my plan is as follows: Purchase a few sound bulbs early in the year—say, January or February. Tuberosas are generally sent over in two batches, one from Africa and one from America. If we get the latest bulbs and pot them into strong, turfy soil, making them very firm, and covering the bulb a little more than half way we may secure a more even batch than is generally seen. Pot into moist soil, and place a little sharp sand at the base of each bulb. Stow them in a pit or frame, and cover with Cocoa-nut refuse. Early in March is a good time to pot. The chief cause of failure under this cool treatment comes from damp, but if the bulbs are potted into soil of a medium moistness, and covered with the Cocoa-fibre, there is no fear of damp, as water is not needed until the roots are well at work. By this time the weather will be warm and dry, and watering must be carefully attended to. Almost full exposure may be given during the midsummer and early autumn months, by which time most of the bulbs will have started their spikes. When growth has well commenced frequent applications of weak liquid-manure are very beneficial. As autumn approaches and before we get cold nights the plants should be housed, when if the forwardest be brought into a warm greenhouse as needed they will flower freely, and keep up a supply all through the winter. If there be any preference, I would give it to American-grown bulbs, as I think we get fewer failures from these. The secret of cool treatment is avoiding a cold, damp soil, and this is easily done if plunged, so as to get rid of the necessity for water until summer has arrived, and the pots are fairly full of roots.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of GARDENING, 47, Southampton-street, Great-street, London. Letters on business should be sent in the Post-office. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by indicating, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and manure vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appeared.

5004.—Reflexed Chrysanthemums.—What are the names of the best twelve varieties of reflexed Chrysanthemums for exhibition?—R. H.

5005.—Damp wall-tiles.—Will anyone kindly tell me of any solution for flies found efficacious in keeping damp out of a dwelling-house? To be applied outside.—BLACKWOOD.

5006.—Celery for show.—I shall be greatly obliged if someone will give me the names of the best kinds of Celery for show, and how ought it to be grown to have it ready in August?—H. H.

5007.—Bees and Carnations.—Will anyone inform me whether, in the keeping of Bees in a garden where Roses and Carnations are grown, the flowers will be spoiled or any way affected?—E. M.

5008.—Chrysanthemum cuttings.—Will someone kindly inform me if Chrysanthemum cuttings can be struck in a cold greenhouse, and what kind of soil is the best for that purpose?—R. H.

5009.—Seeding Brier stocks.—These have just been transplanted into the beds where they will be bedded next year. Will someone kindly state if it is necessary to cut them back at all? If so, when?—J. T. P.

5010.—Treatment of Petunias.—Will anyone tell me how to treat double Petunias which have just finished flowering to get a stock of cuttings for next season? Must the cuttings be of old or new growth?—ISABELLA.

5011.—Chinese Primulas and Dentzia gracilis.—Will somebody tell me how to grow Chinese Primulas (single), so as to get seed? Also how to propagate Dentzia gracilis, and the season for doing it?—ISABELLA.

5012.—Heating a greenhouse.—I wish to know if earthenware socket-pipes would answer for heating a greenhouse with hot water, as they will run much cheaper than iron ones? Will they be liable to burst?—W. H.

5013.—Roses in a cool glasshouse.—I have Climbing Deconino and W. A. Richardson Roses now growing in a cool glasshouse. I want to know if they are suitable for forcing with Marechal Niel, or are they summer Roses?—W. C. Bristol.

5014.—Japanese Chrysanthemums.—Will someone kindly give me the names of the best eighteen varieties of Japanese Chrysanthemums for exhibition? Also the names of the best eighteen varieties of incurved kinds for the same purpose?—R. H.

5015.—Cost of heating a greenhouse.—Will you tell me what is an average consumption of coal yearly for heating a range of glass-houses, about 45 feet long, pipes 4-inch? Half the house kept at above heat, the rest temperate. The best household coal used.—STURTA.

5016.—Treatment of a Fern, &c.—I should be very grateful if any reader of GARDENING could give me information concerning the treatment of Fern Platycoma excelsa, and also the Rock-plant Poterium sanguinolent, both of which I have just had given me?—C. M. M.

5017.—A greenhouse wall.—Is there any objection to covering the brick wall of a lean-to conservatory with rough Cork, and are there not some delicate or rather small creeping plants or Ferns that might be rooted in its crevices? Does the Cork encourage insects?—G. E. C.

5018.—Hoya and Draena, &c.—Will someone kindly tell me how to treat a Hoya and Draena terminalis? I have only a sitting-room to keep them in. Do they require much water? I should like also to know how to treat the Polystichum angulare. What should it be potted with?—E. M. S.

5019.—Treatment of Cherries.—I have some Cherries which were budded a year and a half since; they have grown well in one long rod. Should I cut it back now to make them fruitful? I want to train them for a wall. They each budded about 6 inches from the ground on Cherry-stocks.—PINK.

5020.—Plants for carpet-bedding.—I shall feel obliged if someone will kindly mention in GARDENING a few things suitable for carpeting the front of a mixed border, of low growth, and evergreen (like London Pride, for instance), to plant about near Rose-bushes and amongst other things?—MRS. TAYLOR, Blackheath.

5021.—Ferns in a greenhouse.—Will Ferns do well planted in a border round wall below pipes (which will only be heated in cold weather)? What soil is suitable for them, and how to mix Lycopodiums and bulbs of Daffodils with Ferns? Would Maiden-hair Ferns grow on south side, and what sorts would be best on west?—G. E. C.

1022.—Covering for a stage.—I have three rows of 4-inch piping along the front of my greenhouses, and the stage is immediately above, but only 12 inches higher. It has occurred to me that my plants on this stage will be dried out. Perhaps someone will kindly suggest some covering for the stage? Would corrugated iron do?—EMULWAST.

5023.—Pear-trees not growing.—Two years ago I trencned up a mallow, brought it into a kitchen garden, and planted pyramid Pear-trees; but they do not make any wood or bear fruit. Will someone kindly tell me what I ought to do to make them grow and bear? The trees have not been pruned since they were put in. The soil is sandy.—G. A.

5024.—Artificial manure.—Will someone please say what would be the best sort of artificial manure to use for flower border in small garden, into which there is no means of bringing dairy or other like manure? The flower border is about 80 feet long and 5 feet wide. Would decayed leaves be better than the artificial manure? and, if so, what is the speediest way to make the leaves rot?—L. K. B.

5025.—Growing early Rhubarb.—Having several large roots in my garden, will someone kindly inform me how to proceed in obtaining an early supply? I have plenty of leaves. Should I put them on the crowns and cover with a tub or pot, or should I put the tub on and leave round outside? Do they also want fermenting before using? Any information as to best means will oblige?—NURSE.

5026.—A bed of Lily of the Valley, &c.—I am very anxious to make a new bed of Lily of the Valley. Kindly give me directions as to soil and best manure? Also if it would do well in a sheltered spot about a yard away from an old Beech-bush? Any suggestions as to making a Carnation bed would be gladly accepted. Would rabbit-sand do? What is the best mixture for planting Carnations in?—PERRINIA.

5027.—Forcing Lily of the Valley.—Would someone kindly tell me, when forcing Lily of the Valley, how soon should they be taken out of the hot-bed, and thrown a Vine-house or a fernery till them best? I had some that have been in hot-bed a month; most of them are gone, and a little I have then plunged in a Melon-frame, which has a hot-water pipe. Would it help them to keep that hot?—EGLWISSA.

5028.—Climbing Roses in a greenhouse.—How many Climbing Roses could be grown in a lean-to house of 12 feet south and 20 feet west? Which would suit best, for each aspect, and for cool corner in west? How far from glass must they be kept, and will the shadow from them injure other plants? What is the name of a good Crimson Passion-flower with drooping blossoms, and would anyone say if it is difficult to manage, and also give names of other good plants for hanging-baskets?—G. E. C.

5029.—Bulbs in pots.—Will the following bulbs—Kewensis, Duffieldii, Narisusis, Chionodoxa, Cressonii, Snowdrops, and Tulips—each 1 have now in pots for blooming this winter and spring, bloom satisfactorily if left in the same pots next year? I shall be very glad to hear from some of my more experienced brother readers respecting the treatment, &c. It is a matter of considerable expense to have to procure fresh bulbs every season, I may say I do not possess a garden.—KEXESSA.

5030.—Pruning and repotting Tea Roses in a cold greenhouse.—Will someone kindly give me the following information in regard to some Tea Roses now in a greenhouse which is almost entirely unheated? When should they be pruned? When should they be repotted or their roots otherwise attended to? When should they be stood out-of-doors? When should they be taken in again? The Roses have been blooming freely in tubs recently, and are in a span-roofed house standing east and west.—LEWISDAITE.

5031.—Marechal Niel Rose and Vines, &c.—I have a large Rose-tree in ainery where I have just finished cutting the Grapes, will someone kindly inform me the proper treatment for the above during the winter? Having pipes through the house, I can give heat if it is required, and good ventilation top and bottom when necessary. Should the hot air be kept on all night in the above? Would it affect either by planting Lettices in the house, having plenty of floor space (50 feet by 29 feet), which I want to make the most of?—NORICE.

5032.—A new greenhouse.—Will someone kindly oblige me with hints how best to furnish a new greenhouse, not intended to be fitted with many stages, and where flowers are desired that can be fairly easily managed without a very skilled gardener, and where it is intended only to keep sufficient heat (if it can be so regulated) as to keep out frost? The conservatory is built on the angle of my house, and opens on of room; spare will be left in it to walk or sit. It measures 12 feet to south, but 20 feet to west, is 8 feet broad, and has Loughborough boiler, and pipes all along south side and to 4 feet of west, where they are stopped by floor out to lawn, and opposite to that in room, so that there is a cool corner to the west about 7 feet square. It contains a tank for soft water on south side.—G. E. C.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

5033.—Pleiones (Tar).—I should be happy to assist you with names for your plants, but they must certainly come to me in much better condition than the blossoms sent, which might have been from their appearance some of last year's flowers.—M. B.

5034.—Black Hamburg Vines (Pine).—I have some good young Vines (Black Hamburg) two and three years old, grown in pots. I want to dispose of them. Where would I be most likely to do so to the best advantage? (Advertise in GARDENING, &c.)

5035.—Hymenophyllum (T. Baxter).—Yes; the plants of which you send specimens are of great beauty. They are popularly known as Filmy Ferns, and the two specimens sent are (1) Hymenophyllum austriacum, (2) H. hibernicum, and there is another one which is included with them, this is the Killarney Fern (Trichomanes radicans), and is more beautiful member of the family, and grows in a cool or cold room.—J. J.

GARDENING ILLUSTRATED.

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ROSES.

FORCING MARECHAL NIEL ROSE.

ALTHOUGH this is such a disappointing Rose sometimes, inasmuch as no manner of coaxing will induce a plant to start into growth, there is no other Rose so valuable for growing under glass. I refer to the great length the branches will extend in one season, the number of flowers they produce, and the ready way in which the growth responds to fire-heat in the dead of winter after a short season of rest. The only profitable way to grow this Rose for forcing is to plant it out in a border where there is a fairly good root-run. It is not necessary to provide an expensive border for the roots, as the condition of my plants as I write testifies. If the natural soil is fairly deep and not too light, there is no danger of the plant not making good growth if the roots are given three or four doses of liquid-manure while the young growth is being made. My plants are put out in the natural soil of the garden and get a few doses of sewage during the summer, and they make splendid growth every year. With regard to pruning, I have not the least doubt but that the plan of cutting back as soon as the first lot of flowers is over is the proper way. The blooms produced by the young shoots are so much larger than those produced from spurs, that there is a considerable difference in their value when the produce has to be realised. My object is to get the flowers as large and as early in the year as I can. To do this, I find it necessary sometimes to thin out the young shoots early in the summer to give the others more room, as I find that the stronger the growth the larger the flowers. My plants are trained up near to the glass, and each shoot has a space of 9 inches allowed it. I find this is the only way to get thoroughly strong and well-ripened growth, and unless these shoots are well hardened by full exposure to light and air, the flowers come small and poor in colour. The next

POINT IN THE MANAGEMENT is to give the plants a season of rest. This is of the utmost importance when the plants have to be forced early. In my case I devote the house to the Roses, and leave the ventilators open night and day all the autumn and up to Christmas, except when it is actually freezing. Even then the joints of the shoots will continue growing in mild weather. I have found that it is of no use to attempt to try to stop them growing, so that I let them alone until about a week before forcing commences, when I cut off 2 feet or 3 feet from each shoot, as I find the best blooms are produced by the growth that is better ripened farther back. In previous years I did not commence forcing until the 1st of January, but this season I started the fire a week earlier as an experiment. This I shall not do again, as I find the flowers were not so fine, as well as giving me more anxiety when the young growth is being made. I could see if I had not managed the temperature very nicely the young shoots would have kept growing instead of forming flower-buds. Until the flower-buds

are formed the night temperature is 50 degs. to get it down to that point I had on several occasions to let the fire out. The reader will hear in mind that the temperature referred to was in the closing days of January, when the daylight at the best is often dull and of short duration; but at about the end of the first week in March it may be safely from 5 degs. to 7 degs. higher. Until the flower-buds were quite prominent the day temperature by fire-heat was not allowed to exceed 60 degs. In the middle of February I raised it to 70 degs. when the outside temperature admitted of the top ventilators being opened. Taken altogether, the previous season was not a good one for the forcing of fruits or flowers, as there was but little sun, and we had quite an average number of frosty nights and dull days, so that although I began forcing my Roses a week earlier last season, I did not have a proportionate number of blooms at the same date. About this time in former years I had out about sixty libons; last season the number did not amount to quite 100, an increase that did not pay for the additional fuel consumed and the anxiety caused by the uncertainty of the flower-buds forcing. I know that many amateur readers are averse to thinning out the bloom-buds of Roses, but this is what I do both under glass and in the open air, and my Marechal Niels are so vigorous that quite half of the young shoots produce three buds on a shoot; these I reduce to one as soon as I can see them, as one well-developed bloom pays me better than three small ones.

5028.—Climbing Roses in a greenhouse.—A single plant of Marechal Niel would fill up 20 feet of space in two years if it started well into growth, as this Rose sometimes does. For a lean-to house I should, however, prefer Climbing Perle des Jardins as one of the plants for the south aspect, General Jacqueminot for another, and Climbing Niphetos for that side. This selection gives you three distinct colours, and they are all Roses that can be kept within bounds by judicious pruning. For the west side W. A. Richardson will do for the cool corner, and L'Idéal and Reine Marie Henriette for filling up the remainder of the space. You must keep the growth at least 12 inches from the glass; 14 inches would be better. The only Passion-flower bearing crimson flowers that would be likely to suit you is one named principis; but this requires more warmth in the winter than would be good for the Roses. I think you must mean the Tacsonia; if so, the one named Van Volxemi is the kind you want; but if you do not give it plenty of roof-space it will overrun the Roses. The best plants for hanging-baskets are the Ivy-leaf Geraniums and the drooping forms of Tuberos-rooted Begonias.—J. C. C.

5013.—Roses in a cool greenhouse.—You may treat the two varieties you name exactly the same as Marechal Niel, as they are of similar character. W. A. Richardson is more perpetual blooming than C. Devonlands or Marechal Niel, but all three of them should be treated upon the long rod-system. There have been a good many queries lately about Roses in

cool-houses, and as the time is fast approaching when a considerable amount of work will need attention among them, I propose giving a few notes very shortly.—P. U.

I have never been able to do anything with Climbing Devonlands under glass. It makes too much growth, and does not flower freely. Possibly in a large, light house, rather pinched at the roots, it might do better. William A. Richardson and Climbing Niphetos would do very well with Marechal Niel.—E. H.

5031.—Marechal Niel Rose, Vines, &c.—As your Grapes are late you will need to give them a slight rest. The Rose will also benefit from this for a time longer. You cannot bring one on more forward than the other. I should allow a little air every day, except during severe frost, until the early part of January; then let them break steadily and naturally, aiding them with gentle fire-heat as they advance. You could hardly have a better plan for your late Lettuces, and no harm can come of placing them in this structure. There are several other subjects, such as Dentzia gracilis, pot Roses, and other hardy flowers, which would benefit very much from a short period here before being introduced to heat.—P. U.

The Rose will do well with the treatment you give the Vines if you only use fire-heat to keep out frost. You are, however, quite right in supposing that the growth of this Rose requires plenty of air to ripen, and the more you ventilate the house the better your Rose will behave, and the Vines will be benefited rather than not. You may plant Lettuces on the floor of the house without doing any harm to the present occupants, and if you wish you may use fire-heat sufficient to maintain a temperature of 40 degs.—J. C. C.

5000.—Seedling Brier-stocks.—I take it that there is a slight misprint in your query—the word "bedded" should read luddled. Presuming such to be the case, I may say that they should not be cut back at all until the spring following their being luddled. Do not plant them deeper than the collar of the stock. It is a good plan to plant them rather shallow, and then draw some soil around them. This protects them through the winter, and also makes it much easier to bud upon the roots in summer, as the soil is quickly removed, and leaves the bark in a softer and better state for working.—P. U.

Straggling shoots may be shortened back to make the plants shapely, but there should be no general cutting back. Whatever pruning is required should be done now.—E. H.

5030.—Pruning and repotting Roses.—Tea Roses in a cold greenhouse. The Roses should be pruned at once, and the repotting may be done any time before the end of January, but do not repot in your case in frosty weather. As soon as potted bring the plants to the south side of the house, and stand them on the floor, and if the frost is likely to be severe enough to freeze through the ball of soil, you had better cover them up with mats, not that the frost will injure the roots, but it will bring the ball of soil away from the side of the pot, which is not desirable. From the beginning to the middle of June is a good time to stand them out of doors, and the middle of September is a good time to take them under glass

again. You must, however, be guided by the weather prevailing at the time when the last two operations are advised to be done. The more genial it is the longer they may remain in the open, providing they stand in a position pretty well sheltered from the wind. You had better have a bed of coal-ashes to plunge the pots in while they are in the open air.—I. C. C.

GARDEN WORK.

Conservatory.

Large Chrysanthemums may be shifted into larger pots if large plants are required, but a good deal may be done with stimulants. Pelargoniums may be shifted on as soon as the pots they now occupy are filled with roots. Under no circumstances should they be permitted to get very much pot-bound before repotting. If insects appear on the foliage, which is not unlikely, either fumigate with Tobacco or dip in a solution of some insecticide, of which there are now numbers in the market. Half a tumbler of Sunlight Soap and one ounce of Potash-ash will make a good wash for three gallons of water. Half the soap in a gallon of water, and add the other two gallons afterwards. Use at 100 degs. of temperature. Take cuttings of Chrysanthemums. After this date it is best to take good cuttings as soon as they can be obtained. The best cuttings are the strong sucker-like shoots which spring from the bottom of the plants. Those who are thinking of buying any of the new Chrysanthemums should send in their orders to get the plants in the plants. Big things will keep hold of the public taste, and the limit of size has not yet been reached. Some day, I suppose, there will be a reaction, and the Pompons will come in again. As plants go out of bloom and become shabby take them out and fill in with other plants coming on. Personally, I feel rather glad some of the Chrysanthemums are over, for when present in such numbers as are grown now they take possession of the place, and are a very bad thing. What they are thought down we begin to realise how beautiful groups of Bulbs, Cyclamens, Primulas, and Geraniacs can be made with a setting of Ferns and other foliage plants. Small seedling plants of the green-leaved Brassicas are suitable for mixing with dwarf flowering stuff. Cyperus distans in small pots may be used on this principle. Geraniacs and Aralias may all be raised from seeds, and have some decorative value when about a year old. A rearrangement of the subjects always gives pleasure, as if different subjects as they come into bloom. A good deal will be done in the future with the new dwarf Camas; wherever there is warmth there will be plants in bloom. The only fault to be found with them is, the flowers do not last long; though, perhaps, this will not be noticed much, as the flowers open every morning. Tuberosa fragrans will now be dried off, and their place will be taken by the Illinois-rooted species and varieties which are now coming in, one of the most useful being Indigo and its varieties. A mass of this will now be a special feature in many conservatories. Poinsettias are now at their best, and with a careful regulation of the temperature and the atmosphere humidity the leaves will last a long time. There is now a prospect of cheaper fuel, and, fortunately, up to the present there has been no very severe frost.

Stove.

Dendrobis and other winter-flowering Orchids are coming in, and, besides these, there are many other plants that will flourish freely in a night temperature of 40 degs. or a day, or two more. We shall soon pass the shortest day, and the increasing daylight will stimulate the opening buds, both of leaves and flowers. Many of the plants will be for the most part at rest now. Some exceptions there are, among which may be named Fuchsia caryocina, a beautiful winter-flowering stem shrub that flowers with the greatest freedom when the wood has been well ripened by exposure in summer. Gardenias will now be coming in, and among them Benjamin graefii-flora, Impatiens Nordallica, and the Scarlet Passion-flower (Passiflora prurispes) will help to beautify the upper part of the house. For Tulareas, as soon as they come to hand, at intervals of a month or so. The earliest potted bulb will now be on the move, and may receive more heat. If plunged in a brick bottom-heat the flower-sticks will come on faster. Atmospheric humidity should correspond with the amount of fire-heat used. A dry, scorching atmosphere will soon fill the house with insects.

Bedding Plants.

For the present these cannot be kept too cool, provided the least is kept out, and being kept cool means, of course, they will not require much water. As soon as the new year comes in those plants from which cuttings are required may be taken to a warm pit or house, as young cuttings strike so much better than the shoots produced in a low temperature. Dead leaves should be frequently removed from the bedding plants. Verbenas must be dusted with sulphur if thrips appear, or dipped in a liquid in which it is soluble in strong green-fly, in which they are rather subject. The usual run of plants employed in carpet bedding, such as Cobuses, Primroses, and Alternantheras, cannot be kept safely in a much lower temperature than Cobuses. The back shelf of a stove or forcing-house will suit these very well.

Forcing-house.

There will be a good deal to do in this department now, in addition to the usual flowering plants which are in demand for Christmas and New Year's parties, and which include Dutch bulbs, Azaleas, Rhododendrons, Deutzias, Spruces, Arums, Iron lilies, Tea Roses, Lily of the Valley, &c. French Beans may be brought forward, Vines in pots and Cucumbers are sometimes grown in the same house. Careful management is required where the occupants of the forcing-house are many and various. In small places where the houses are few in number I have seen all the above, with Tomatoes in addition, all being well treated in the same house. There is often more skill

* In cold or northern districts the operations referred to under "Garden Work" may be done ten days to a fortnight later than in these districts with equal success.

brought to bear on the moderate-sized forcing establishment than in large places, where separate houses are devoted to the different subjects grown.

Early Strawberries.

Where many Strawberries are forced, the first batch of plants will soon be started. Strawberries are rather accommodating in the matter of temperature, but they do best when started in a night temperature of about 50 degs., gradually advancing as the plants progress, 65 degs. during the maximum when the fruits are set and swelling. A low pit filled with leaves is a good starting-place for the first batch, the plants to be moved to a light, airy structure, with a night temperature of 55 degs. to 60 degs. when in bloom, with air more or less always when the weather is mild, the cannel's hair brush used daily when the plants are in blossom.

Cold Frames.

Violets and all other hardy subjects must have as much fresh air as can be safely given. Keep all plants free from dead leaves. A freely stirred surface-soil tends to keep the atmosphere pure, and the plants are always healthy under such conditions.

Window Gardening.

There are plenty of plants in blossom now suitable for filling starry windows. Among these are Cyclamens, Roman Hyacinths, Primulas, Fuchsias, and Joss or Sacred Lilies. The latter will grow just as well in soil as in water and pebbles. Flowering plants and Ferns must not be allowed to get dusty, and a little weak stimulant may be placed in the water occasionally. Half an ounce in a gallon of water will be sufficient to make some impression upon both growth and blossoms.

Outdoor Garden.

At this season there are always improvements to be carried out, and as long as it keeps open alterations of all kinds may be done. The removal of trees and shrubs to create special features is always interesting work. Some trees are planted which are not adapted for that particular position, and it is more for just to remove them so perfectly arranged as to require no changes—and it is far better to move some of the things altogether than try to make room for all by cutting and lopping. This is, in fact, one of the greatest evils attending the planting of small gardens. Many things are planted at first that were required, and the further error is made by cutting back instead of thinning out. A mutilated tree or shrub is never satisfactory, because the true character is not seen. Very interesting work is the formation of such special features as Borders, or borders for Chrysanthemums, or groups of shrubs and lilies. All of these things require special care in the preparation of the soil, and the winter, when there is more leisure than usual, and when cheap labour can be had, is the best time to carry out such work. Creepers on walls may be gone over, and what pruning is required may be done, and the necessary tying or nailing should be seen to. Hedge-rose plants, Gulls, &c., will in many instances require new labels. Names of plants are very apt to be moved or lost during the autumn clearing up. It is, perhaps, not advisable to have the labels too conspicuous, but still they should be seen without much difficulty. If the names of Roses are lost, it is not every person who can name Roses at sight; and, of course, such things as Phloxes, Drillingiums, and other hardy florists' flowers are in a hopeless condition when the names are lost.

Fruit Garden.

The early Peach-house and the early luxury should be placed in condition for starting. This means that the house requires a thorough draining in every part with soap and water, and the walls should be whitewashed. When this is done, and the ladders have received their annual top-dressing of free loam and Thomas's, or some other manure, the houses may be closed preparatory to forcing if early Grapes or Peaches are required. I am assuming, of course, that the trees require their annual dressing before the house is drained. This annual dressing in many gardens resolves itself into a wash with Gishurst compound or soft-soap and water. Where there are no insects strong mixtures are not necessary; if there has been any mildew on the trees during the past year, extra precautions should be taken to destroy the spores which are present in the house. A strong solution of Gishurst compound (6 oz. to the gallon) will destroy any mildew spores which may be hidden away in the bark without injuring the Vines in any way. Hardly fruit of all kinds will benefit from a dressing of some simple insecticide. Sant, lime, and soft-soap made into a wash that will pass through the garden-engine will do much good in cleansing trees from parasites of all kinds, and it brightens and cleans the bark. This dressing may be given as soon as the pruning is completed, and may be repeated any time during the winter. If anything stronger is required increase the quantity of soap to 4 oz. per gallon. Apple-trees affected with American Blight must be thoroughly scrubbed with Gishurst compound (6 oz. to the gallon), brushing the liquid into every part of the tree. These trees which are badly affected had better be grubbed up, and after grubbing and in the roots and remaining some of the excavated soil and fill up with fresh plant a young tree. In most gardens the old should give place to the new.

Vegetable Garden.

Trough and manure laid for plantations of Asparagus. The soil cannot be too deeply stirred, and the manure dressing must be liberal. Continue to make up Mushroom-beds at intervals as required. A Mushroom-house cannot well be too large, as so much work can be done in them besides growing Mushrooms, and the larger they are, if properly reeled, the roofs covered with thatch, the less fire-heat will be required. They may seem paradoxical, but the larger the house the more beds it will contain, and fermenting masses of manure will keep up the requisite temperature. Many gardeners have broken away from the old-fashioned plan of sowing the manure in small quantities and drying it in a shed. If the manure is brought fresh, or nearly so, into the shed, and after the longest litter has been shaken out, one-fourth of good loam is mixed with the short manure and thoroughly mixed. As well as use in it at once, plant the rows here and there as soon as the proper temperature is reached, and the use of good deal of time and labour. Liquid manure may be given freely to beds which have been sown some time. Sow early Peas and Beans on warm beds. These

the seeds with rod lead before sowing. It will not take long, and will keep them safe from mice. Put long litter over Jerusalem Artichokes. Globe Artichokes will require protection from severe frost. Potato heaps may perhaps require more covering. Never a severe frost comes in, but roots are frozen which ought not to have been left in an insecure state. Make provision for securing a stock of Parsley in severe weather. It is a good plan to have a bed on a south border which may be covered with a frame, and the frame made secure with mat or litter. Salad material must be looked after carefully now, especially Lettuces, Sorrel, Mint, Cherril, and Tarragon may be potted in winter. E. Hobdair.

Work in the Town Garden.

Christmas will soon be here again, and as most of us will see a few flowers about, then a little extra heat may be employed to push things on into bloom by that time. Roman Hyacinths that were potted early—in September or the beginning of October—will have formed plenty of roots by this time, and be beginning to move a little, and if now cleaned and brought into a genial temperature of 50 degs. during the day, the soil kept at 60 degs., and what can be secured, and prefer the single-flowered pure-white form "Narcissi of several kinds, but notably the Paper-white and "Stella" (Incomparabilis), will bloom quite as early and readily as the last, with the same treatment and very little forcing, and the pretty little Scilla sibirica also responds quickly to a little warmth at this season if planted early. These may either be grown separately in pans or pots, planting the bulbs rather closely, or else be planted among the Roman Hyacinths, with which they produce a charming effect. An important point in forcing both Hyacinths and Narcissi at this early season is to prevent the spikes and foliage from becoming unduly drawn, and this is easily prevented by keeping the pots near the glass, and by avoiding a very high temperature. When such things are grown simply for supplying cut flowers a great saving of both space and labour is effected by plunging the pots in the bath in which there is 3 inches or more deep, in which they lie quite as well as in pots. The market-growers, indeed, almost invariably grow them in this way, even for pot work, lifting and potted the plants when in bloom, as by this means far more even pots are secured than by the other method. Lilies of the Valley are always admired, but these require more heat than the preceding, and are best managed by plunging the pots in crowns in Cresson-nut-tree or ashes in a warm-house or pot, and covering them about 6 inches deep with the same, which must be kept constantly moist. As soon as the tips of the leaves appear through the flure take out the pots, lean them, and introduce them gradually to the light in a temperature of 40 degs. to 50 degs., when the foliage will quickly gain colour and the flower expand. In very sunny places Chrysanthemums, like the Zonal Pelargoniums, prefer to expand in the depth of winter; but strong, early-sown plants bloom beautifully now in a light house kept at a range of 45 degs. to 55 degs., where the air is tolerably pure, as in country places, or even the outer suburbs of London. The Persian Cyclamens, however, do not on a shelf near the glass in a tolerably warm structure. The early-flowering varieties of Epacris are now expanding beautifully in a warm greenhouse. These are far better town plants in every way than the Ericas, and the flowers very enduring. I. C. C.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary from December 9th to December 16th.

Put in cuttings of Chrysanthemums of various kinds, chiefly of those which require time to bring up the flowers. The cuttings are in a cool-frame placed in a cool-house, where they will be kept in a position which is a better position than a cold-frame or pit outside, where heavy coverings would be necessary to keep out frost. From the time the cuttings are inserted till the plants are moved outside in May, they cannot have too much light or too little fire-heat. Dipped Peargoniums in a solution of Sunlight soap. A greenfly in two has been seen on the plants lately, and dipping is cheaper and usually more effective than fumigating. Made up hot-beds with leaves and manure. Asparagus, Potatoes, Lettuces, &c. A good deal of produce can be raised under glass with the cheap frames, if there happens to be any, as there generally is a good supply of leaves in a country place, which can be had for the labour of raking up and carting. A bed made up now for Asparagus, when the Asparagus is removed, will come in very useful for Lettuces, Radishes, Potatoes, and Turn Carrots. Still busy among the trained fruit-trees, pruning, training, and washing. Always make it a rule when the training and training is finished to give the trees a thorough wash with an insecticide. It is usually done in this way. When a wall of Plums or Pears or Cherries is finished sufficient wash is made up in a large tub to do the trees in that particular wall, and when that time is done the borders are manured, if necessary, and dug or loaked over to put in the air. All ground, whether planted with fruit-trees or not, should have the surface opened up now to let in the air to make the surface of the soil well pulverised. Roots do not, I think, enjoy being always in a dark, close soil; therefore, as far as possible, without breaking or digging among the roots at close quarters, we endeavour to let in the air and what little sunshine may be had between this and next March. I have just planted a lot of young Apple-trees on the Paradise stock. The varieties include Eschlinville, Pott's Seedling, Blenheim Orange, Cox's Orange, Pippin, Golden Pippin, Ashleaf, Green Pippin, Red Pippin, Golden Wonder, Pearmain, and a few others, including Dumblow's Seedling. The trees are all established, with blossom-buds, and, bearing in mind a previous experience with the same kind of trees, a light crop could be had next year if it was desirable. For small garden planting, or large either for that matter, I have the greatest faith in these dwarf, sturdy, thickly-budded Apples. Top-dressed Cucumbers with turfy loam mixed with a little of manure. If a good light, roomy house for Cucumbers, and the plants do better when they have room to strike out, and where the house is large enough to expose the air to be always in motion. My experience has been that Cucumbers are not nearly so difficult to keep in good condition in large houses as they are

In small, stuffy places. Started more Seakale and Rhubarb in Mushroom-house, and moved a few more shrubs, Roses, Lily of the Valley, &c., into forcing-house to take the place of the plants moving out to conservatory. Planted more French Beans in pots for forcing, No. 118 Ultra being the variety. I like this best for very early work, as it turns in so quickly.

GLADIOLI.

THESE beautiful flowers have of late years become very popular, and right well do they repay all the care that can be bestowed on them, for whether you cultivate the brilliant G. Brenehleyensis or the more varicoloured G. gandavensis, or the mixed hybrids now so much grown as market flowers, including, of course, the beautiful addition of Mms. Lemoine, with their wonderfully varied colour, the work is pretty much the same. I have just lifted the roots of all these kinds. Thrusting a steel fork well down beneath them, I lift them from the soil, with the tops on them, and lay them carefully in boxes, so that all the tiny little tubers that form around the base of the old bulb may be saved for planting out again early next season. They are set in any cold greenhouse or shed where they are safe from frost until December, when the old tops are cut off, and the bulbs sorted into different sizes, all that are of flowering size being stored in bags or boxes, secure from frost, and the small bulbs are put away for growing on. The work of preparing the site for next year's flowering beds should now be taken in hand, and if possible fresh soil should be selected for them every year, as there is a great difference in the size of the blooms and bulbs as well when they are planted on soil solely devoted to them and planted at a good distance apart. I am now manuring and deeply digging the soil intended for my next year's Gladiolus beds; it will then lay up roughly exposed to the elements until next March, when, selecting a dry day, the surface is levelled down, and rows marked out 2 feet apart, the bulbs being then put in with a trowel 1 1/2 feet apart; they are let down about 4 inches below the surface. All the attention they need in summer is keeping the surface-soil frequently stirred to keep down weeds, and if the season proves very dry artificial watering will be helpful. But we seldom resort to that on deeply cultivated soil. The bloom-spikes will begin to push up soon after midsummer, and during August and September they will be in full beauty. In cutting the spikes on well-grown plants, flower-spikes will be seen pushing out from the main stem, and these side-shoots keep up a succession until very late in the season; in fact, we had Gladiolus blooms until the frost stopped them, and few flowers are more appreciated in private houses, or sell more readily in market; the bulbs increased rapidly, not only in size but in number. The beautiful Gladiolus called "The Bride," much grown in pots, is also excellent for outdoor work, but flowers earlier in the season and should be planted earlier. I plant my stock of The Bride at the same time that I lift the others, and I find that some of those left in the soil all the summer are pushing up strongly, although the weather is by no means exciting to growth. They are very useful for cutting, being pure-white.

JAMES GUNN, Gosport.

5021.—Artificial manure.—It would be a difficult matter to decide which is absolutely the best artificial manure, so much depending on the nature of the soil and the special requirements of the particular plant to be benefited. Ichthonic Guano or Chy's Fertiliser are excellent manures. If you have leaves at command by all means make use of them; their decay would be hastened by weeds or other green vegetable matter being mixed with them in a heap together. Kitchen refuse is a good manure. Not far from me is a small garden that has been transformed from poverty to fertility by the employment of material that most people let the dustman take away. Where land is of a close, heavy nature, anything of an organic nature, such as paper, rags, old bags, pieces of carpet, &c., would improve its texture; but where the soil is full of inert vegetable matter, as it is in some old gardens, these things would do more harm than good. But Cabbage, Broccoli, and Turnip-leaves would benefit any kind of soil. Some years ago, and long ago, soil that I was planting with Potatoes, I dug in

some green Broccoli-leaves by way of experiment. Where these were dug in the haulm was higher and greener than that in the rest of the plot where nothing was used, and when the tubers were lifted there was a great difference in the size of those that grew where the Broccoli-leaves had been put than where nothing was dug in at planting. Leaves of the plants of the Brassica tribe give a bad smell when undergoing decay, but this can be remedied if they are covered with earth.—L. C. K.

HOUSE & WINDOW GARDENING.

HARDY CLEMATISES FOR WINDOW DECORATION, ETC.

Few plants are capable of being used in so many ways as these Clematises. They may be well employed to adorn the walls and windows of the dwelling-house, for which they are especially well adapted, as their habit of growth is so free and graceful, and the blossoms are produced in great profusion, and contrast well with any other flower near them. They may also be employed with great advantage to cover any



Clematis "Lady Caroline Neville."

other bare wall-space near the dwelling house, and for pillars out-of-doors or in cool conservatories, for overrunning tree-stumps and shrubs, or for hedging purposes, they are admirably adapted, and when well grown they furnish a mass of gay flowers for months during summer. In order to induce Clematises to produce a long succession of bloom, liberal culture is necessary—indeed, indispensable; for unless a vigorous growth in the plants is secured they will flower but sparingly. A deep, well-drained soil, consisting of good friable loam, rotten manure, and leaf-mould, is the best compost in which to plant them, and during very dry weather liberal supplies of weak manure-water may be given with advantage. Although the choicer kinds are usually increased by grafting, if cuttings of the young shoots be taken off in spring and inserted in a gentle bottom-heat under a hand-glass, they will form good flowering plants under favourable circumstances the following season. Two of the best Clematises for home-decoration are C. Jackmani and C. Lady Caroline Neville. The former kind is here figured. The names of other good and hardy kinds may be found in almost any nurseryman's catalogue.

CHRYSANTHEMUMS.

GROUPS AT CHRYSANTHEMUM SHOWS.

A GROUP of Chrysanthemums is very showy, and with the varied colours and forms lends itself to more tasty arrangement than any other flower; but, however well they may be arranged, there is a certain amount of heaviness. I have seen groups at all of the southern shows this season, and grand as the premier group at Brighton was, both in arrangement and quality of blooms, it would have been considerably improved if one-third of the plants had been missing, and their place taken by a few Ferns. The adaptability of these two to form a pleasing combination was well exemplified at Eastbourne, where a class was framed for them. An imitating bed of Ferns, having a few good blooms showing well above them, and the outside of the group set off with various Pteris and Adiantums, was a feature of the show. There is far too much attention given to good flowers where groups are concerned. Plants are grown with two, three, or at the most four blooms, and when these are placed so thickly together, as is generally the case, the size and weight produce a ponderous and heavy effect. Smaller, more naturally-grown blooms, having an occasional large flower slightly raised, would have a much more pleasing appearance, besides acting as a foil to one another. These large blooms are too frequently obtained at the expense of leggy and gaunt plants, and this defect would be covered by the use of a dwarfier and bushy habit, which is easily secured with a full show of medium blooms, and if, combined with this, we use a few Ferns, the effect is exceedingly good. On suggesting this to a well-known grower, he asked which the judges would take most notice of; were they to judge the Chrysanthemum only, or the whole combination? The classes at Eastbourne read, "to consist of Chrysanthemums and Ferns," and, again, "Chrysanthemums and other plants, Chrysanthemums to pre-eminence." In awarding prizes the combined effect should certainly be the test. In both of the above classes I noticed that a few good flowers had a much better effect among other subjects than when among their sister flowers only, where they are comparatively lost.

P. U.

5014.—Japanese Chrysanthemums.

—The following thirty-six varieties will be found suitable, the first half being Japanese and the remainder belonging to the incurved section: Vivian's Mirel (deep-mauve), Charles Davis (brunze-yellow), Mlle. Thérèse Rey (creamy-white), Avalanche (pure-white), Edwin Molyneux (crimson, reverse gold), Stanstead White (pure-white, large), Sunflower (rich-yellow), W. H. Lincoln (orange-yellow), Mrs. F. A. Spaulding (brunze-yellow), Mrs. Fulmer Jackson (brunze, tinted and striped with yellow), Etiole de Lyon (deep-blue, rose, shaded silver), Florence Davis (pure-white, green centre as it expands), Excelsior (crimson), W. Seward (blackish-crimson), Mlle. Marie Hoste (white striped, and bordered pale amaranth), Mrs. G. C. Schwabe (delicate rose, shaded salmon), Alberic Linden (amaranth), and W. Tucker (delicate rose, full and handsome). Incurved: Lord Abinger (primrose-yellow), Queen of England (rosy-blush), Golden Empress (yellow), Golden Rose of England (straw-yellow), Empress of India (pure-white), Charles Gibson (deep bronze-red), Hero of Stoke Newington (rose-pink), Jeanne d'Arc (bluish-white, tipped purple), Lady Dorothy (pale cinnamon-luff, suffused with rose), Lord Wolseley (brunze-red), Prince Alfred (rose carmine, shaded purple), Miss M. A. Huggan (soft-yellow), Princess of Wales (bluish-rose, striped deeper), Mrs. Culnham (bright-rose shaded yellow), Mrs. Heal (creamy-white), Princess Teck (bluish-white), Miss Violet Tomlin (bright violet-purple), and Jardin des Plantes (rich orange-yellow).—E. MOLYNEUX.

—The following are all well up to date, Japanese: Duke of York, Excelsior, G. C. Schwabe, Princess Mary, Viscountess Hambleton, William Seward, Col. W. B. Smith, Golden Wedding, George Savage, Lord Brooke, Mrs. T. Denne, Mrs. E. D. Adams, President W. R. Smith, Primrose League, Mrs. C. H. Payne, Mme. Hoste, Gen. W. Childs, Chas. Davis, Mrs. Dr. Ward, Infant des Deux Mondes, Incurved: Baroness, Brockleigh Gem, Robert Pettell, Ami Hoste, Mrs. R. King, C. B. Whit-

nall, Lucy Kenhall, Mrs. J. Mitchell, Mrs. S. Coleman, Mme. Darrier, Violet Tomlin, Miss M. A. Haggas, Lord Wolsley, Princess of Wales, Mrs. N. Davis, Lord Alcester, White Empress of India, Jeanne d'Arc.—E. H.

5008.—Chrysanthemum cuttings.—You may strike the cuttings in a cold green-house, as coddling of all kind must be avoided. When they are struck, however, in an ordinary cold frame there is delay from frost, and the wiser plan is to have a hand-light or small propagating frame to an ordinary greenhouse, with a temperature of about 45 degs. No air must be admitted until it is seen that growth is commencing; but after that period give air gradually, and cautiously take care that only sufficient water is given to thoroughly moisten the soil, otherwise they will damp off wholesale. The culture of Chrysanthemums for exhibition has now fairly commenced. Grow them freely throughout is a good axiom for the novice. Once allowed to receive a serious check and stunted, unsatisfactory growth will result. Always attend closely to such simple but too often neglected operations as potting and watering. The plants are better if kept in the greenhouse, and plenty of air maintained above them to ward off mildew and other ailments. Where the cultivator is not the happy possessor of a greenhouse or cold-house of some kind the frame must be used. Many have to rely upon an ordinary frame for growing their treasures. Select the best cuttings, not those from the stem, and about 3 inches in length, sturdy, and cut just below a joint. The plants may also be propagated by suckers, and the best way is to put each cutting in a small 60 pot, not inserting, as is the usual custom, several round the sides. See that the pots are thoroughly clean, and use good light loamy soil.—C. T.

—Chrysanthemum cuttings may be struck in a cold greenhouse, but they must not be exposed to frost. I am now striking mine in a frame set in a cold span-roof house, but fire-heat enough will be used to keep out frost, or else the frame will be covered with mats. The less fire-heat the cuttings have the better, but they must not be frozen. Any good light soil will do. I generally use loam and leaf-mould in equal parts, mixed with a little sharp silver sand.—E. H.

5004.—Reflexed Chrysanthemums.—The following are the best dozen belonging to this section: Cloth of Gold (light yellow, full flower), Dr. Sharpe (purple-magenta), Golden Christine (light-fawn colour), Pink Christine (pink), Peach Christine (pale-peach-colour), Mrs. Forsythe (creamy-white), Putney George (crimson), King of Crimson (rich sanguineous-crimson), Cullingfordi (brilliant dark-crimson, reverse gold), Felicity (pure-white, lemon centre), Chevalier Domago (orange-yellow), R. Smith (reddish-magenta, reverse gold, spart from Dr. Sharp).—E. MULYBEX.

—A dozen of the best in this class are: Cullingfordi (crimson-scarlet), Chev. Domago (deep golden-yellow), King of Crimson (dusky-crimson), Putney George (bright-crimson, with gold tips), Elsie (canary-yellow), Hetty Dou (pearl-white), Progne (amaranth, fragrant), Phidias (rosy-blush), R. Smith (a kind of orange or reddish-crimson), White Christine and Boule de Neige (both white), and A. J. Banks (primrose). Dr. Sharpe (magenta-crimson) is very free and excellent in every way, but its colour is against it; and Julie Lagravere, a beautiful rich velvety crimson flower, is, unless afforded special treatment, usually too late for the November shows.—B. C. R.

—This is not a very large but interesting class. The best varieties are Amy Furze (best described as a delicate rose-lilac shade), Boule de Neige (white, and valuable for its lateness), Chevalier Domago (golden-yellow), Cullingfordi (rich crimson-scarlet, the most useful of all in its line of colour, and a really superb flower), Dr. Sharpe (a variety that has been many years in cultivation, the flowers of a purplish-crimson shade), Elsie (a lovely variety, the flowers beautifully reflexed, and very soft-yellow in colour, one of the best Chrysanthemums for decorations in cultivation), Golden, Peach, and White Christmas are all worthy of a good place, the colour of the flowers indicated by the name. Phidias (rose), Progne (amaranth, scented like Violets), and Putney George (crimson, the reverse of the florets golden-yellow, and tipped

with the same shade). All the foregoing are of value for exhibition. Julie Lagravere is a reflexed Chrysanthemum, but not a show variety. It is a splendid kind for November flowering in the open, and is the dark-crimson variety one sees so much of in the parks in the autumn.—C. T.

TREES AND SHRUBS.

FLOWERING TREES AND SHRUBS.

PHILADELPHUS (Mock Orange).

A VALUABLE genus of shrubs commonly represented by the lamellar Mock Orange, or Syringa (Philadelphus coronarius), found in almost every shrubbery. There are a great many kinds, but



Philadelphus microphyllus (natural size).

such a strong similarity exists amongst them that it is necessary to make a limited selection of the very best. To many the common sort is objectionable on account of the powerful odour of its blossoms, but it is such a vigorous grower and profuse flowerer that one cannot well do without it. It is well met to plant it too near the house or a walk. Very much finer in every respect are the North American species, which are best represented by P. grandiflorus, P. inodorus, P. speciosus, and P. Gordonianus. These are all of large growth, rising from 6 feet to 10 feet in height, forming a rounded mass almost as broad as high. They have all large white flowers in clusters, with little or no scent, produced from midsummer till the end of July. The largest flowered kind of the Mock Orange is P. grandiflorus, the blossoms of which are fully 2 inches across and of snowy whiteness. Scarcely less beautiful is the variety of it called laxus, on account of its habit of growth and flower-clusters being less dense. There is not a finer white flowering shrub in our gardens than this beautiful Mock Orange, and if there is only room in a garden for one kind, this is certainly the one to plant. The others, though they resemble one another in growth and flowers, are desirable because they flower in succession, and so extend the blooming period. P. inodorus, Gordonianus, and hirsutus are all fine species, and if space will admit, to these may be added the slender-growing P. Satsumi from Japan, P. Lewisii from North America, and P. verrucosus, also American. Most of these are procurable in nurseries, but are not invariably known under the names cited; indeed, so confused are the names of the Mock Orange in nurseries, that, with the exception of such as P. coronarius and grandiflorus, one can never be sure of getting the species true to name. There are numerous named varieties of P. coronarius, including one with semi-double flowers called primulaeflorus, but it is not desirable, as the doubling of the flowers is not

complete. A really ornamental variety is the golden-leaved form (folia aureis), whose foliage is of a bright golden-yellow tint and particularly bright in early summer. It is a most effective shrub to plant in company with contrasting foliage like that of the purple Hazel or purple Cherry Plum. It should be planted if possible in partial shade, otherwise its foliage is damaged by the hot sun during summer. An extremely pretty little shrub is P. microphyllus (see illustration), which is the pigmy of the genus. It has smaller foliage than the Myrtle, has slender branches, which in summer are whitened with a profusion of small flowers. It has been rather recently introduced from New Mexico, and though hardly enough for the south, is perhaps too tender for northern or cold districts. The variegated leaved form of P. coronarius is also an attractive shrub, the variegation being creamy-white and deep-green.

MOVING HOLLIES.

DURING the past week I saw a splendid hedge of Holly being transplanted; and as the present time is by no means suitable for transplanting this evergreen, and many of the failures respecting Hollies can be attributed to unseasonable moving, I venture to give a few notes upon the subject. December, January, and February are the three worst months that can be chosen. Hollies are never so much at rest as many other evergreens, about April being the least active period of growth. It is then that they shed the leaf, and experience proves that April and May are the two best months for transplantation. Early in September is also a good time, but I prefer early spring planting. If showery weather does not prevail, it will be necessary to give considerable attention to watering, both at the root and overhead. During the dry spring of 1893 and havoc was caused among fresh-planted Hollies, as owing to the scarcity of water it was impossible to aid them in the required direction. I could point to more than one hedge where some 15 per cent. to 30 per cent. only survived. In this respect autumn planting is a little safer, but unless we do this sufficiently early to secure new roots the same season, good results are not often secured. Whichever period be chosen for transplantation, I would strongly advise a good watering, followed by a mulching of manure to ensure moisture being retained. So many evergreens are moved during winter and early spring that I thought a caution note to move the Holly too early might perhaps save many readers from disappointment.

P. U.

The Chimonanthus.—A delightful winter shrub is *C. fragrans*, which blooms in midwinter. It should be planted against a wall, and will grow in comparatively small gardens. One of the finest specimens of it is on an old wall at Kym House, Isleworth. The leafless shoots are identified with comparatively large flowers of yellow, with crimson sepals, and they are richly fragrant. It should have as sheltered a position as possible, or facing south, the flowers being then less likely to suffer from adverse weather. When twigs are cut and placed in a small vase in the house they spread abroad in sweet, but not fragrant, smell.—C. T.

4909.—Quick-growing Ivies.—The broad-leaved Irish and Hibberd's Emerald Gem are fast-growing Ivies. The last-named will make the neatest cover, the leaves being smaller. It may be planted now.—E. H.

5007.—Bees and Carnations.—I should not think the flowers could be greatly hurt by the Bees, if the hives are not too numerous. Show Carnations should not be cultivated in their vicinity, unless they are protected in some way. Bees will not be affected—at least, the little damage Bees inflict would do no harm to the effect of the flowers in the garden.—C. T.

—I keep Bees, and also grow Carnations and Roses, but have never known either to be injuriously affected by them. The honey-Bee visits the wild Brier Rose, but I have never noticed it at work on either my garden Roses or Carnations; it may, however, visit the latter, as I have seen it at work on the Pinks, but certainly without any harmful effect, so far as my observation goes. For every honey-Bee which visits a flower there must be twenty other insects which also visit it, all equally injurious. If fruit is desired, either in the shape of seeds or in the shape of Apples, Pears, &c., the honey-Bee is the gardener's greatest assistant towards that end.—E. T.

INDOOR PLANTS.

FORCING WHITE FLOWERS.

Those who require a large supply of white flowers during the early spring should lose no time in getting the plants or roots prepared by potting or repotting, so that they may be gradually brought forward in a higher temperature. The following are all reliable:—

AZALEA INDICA, of which beautiful plants, full of flower-buds just ready to burst into bloom, can be bought at a very reasonable cost, are sure to give satisfaction, as they need but very gentle heat to make their blooms expand very early in spring, and as a decorative plant, or for cut flowers, they are almost unrivalled. *Dentsche Perle*, *indica alba*, and *Fiebler's White* are amongst the best.

CALLA ETHIOPICA is one of the very easily grown plants that flower at all sorts of times in the year, but never better than in early spring. They should get a rest out-of-doors during summer, and be repotted about midsummer, when they will push up very sturdy growths, and must be placed under glass in September and well supplied with liquid-manure, and kept near the glass in an intermediate-house, with a temperature from 50 degs. to 60 degs. If fly appears fumigate immediately. They will commence to flower about Christmas, and continue to push up their pure-white spathe freely as the sun heat increases, and as cut flowers for church decoration they are very valuable.

CHRISTMAS ROSES are lifted and forced in heat, but the plan weakens the plants much more than placing hant-lights or small frames over strong established clumps out-of-doors, and as they flower without any artificial heat at midwinter, there is really no need to hasten their blooming, and few plants suffer more from root lifting than these.

DELIZIA MARSHII is one of the most floriferous of white flowering plants, all the young shoots of the preceding season's growth being complete wreaths of bloom. If cut down close to the pots after they cease blooming, and kept under glass until June, they will have developed a good head of young shoots, and may be planted out-of-doors in good soil, and kept well supplied with water to perfect their growth; they will now inveshel their foliage, and should be lifted and potted preparatory to introducing to gentle heat, and by introducing a few in succession, they will keep a supply from February until June.

LILIUM HARRISI, one of the very best of White Lilies, may be had in bloom over a large part of the year, but about Easter is the best time for flowering it well under glass. For that period the bulbs should be potted at once; one large bulb in a 5-inch pot does well, and placed in a cool-house until rooted, and then placed in a temperature of about 55 degs., they make splendid heads of the purest of white trumpet-shaped Lilies.

LILY OF THE VALLEY is such a universal favourite that it is always acceptable, and finds a ready sale. The main thing to ensure fine heads of bloom is to have large, plump crowns, similar to those imported, but they can be grown equally as fine at home, if the crowns are planted out singly in rows 1 foot apart, and 5 inches in the row. They may be lifted now, all small crowns being saved for planting out again, and the largest ones potted or placed in boxes of rich soil. They require rather a high bottom-heat, and should be buried in Cocoa-fibre, and kept quite moist until they push up at least an inch; then gradually inure them to the light, and when expanding their flowers place them in a cool-house, to harden off the foliage, which greatly enhances the beauty of the spikes of bloom.

GLADIOLUS "THE BRIDE" should be potted up at once, placing half-a-dozen bulbs in a 6-inch pot. Keep them in cool-house or frame until they are well-rooted, and the tops in full growth; then place in warm-house to flower.

"GERANIUMS," single and double whites, are very useful, and plants that were cut down in August will now be covered with young shoots, which will flower freely if set on shelves near the glass in a warm-house, with rather a dry atmosphere.

HYACINTHS (Roman) only need very slight heat to bring them into flower at Christmas, if potted in September, and will flower in cold

house or frames in February and March. The best of all bulbs for those who have no heated houses.

SPIRÆA JAPONICA must be potted at once and placed in cold frames. As soon as rooted they can be transferred to more heat. Plenty of root moisture is the great thing to ensure success with Spiræas, as they are nearly aquatic.

TULIPS, of the early kind, such as *White Van Thol*, flower freely quite early if potted in October, and when well rooted placed in warm-house or where a little bottom-heat is available. *La Reine* is a fine kind for cutting. *J. Groom, Gosport.*

CHOICE SHRUBS FOR FORCING.

AZALEA MOLLIS AND ITS VARIETIES.

The natural disposition of these Azaleas to bloom early is an advantage, as on account of this tendency they require less forcing. There is one thing connected with the forcing of these plants that should be borne in mind, which is that they should not be hurried into bloom by subjecting them to a high temperature, as, if so treated, the flowers do not last half the time either when cut or on the plants that they will if brought on slowly. This is what occurs with the flowers of most things when hard forced, but more so with the mollis Azaleas than the generality of plants. Large numbers are raised from seed, but they can be also readily propagated from cuttings. Plants that have been forced early, if kept in a little warmth after their flowering is over, soon break into growth that affords cuttings early in the season, so that there is time for them to root and get established during the summer. When the wood of the young shoots has got firm enough—that is, in a similar state to that which is used for cuttings of the Indian varieties of Azalea—they will strike in a few weeks, if kept close and moist in

and moist, to make all the growth possible. Those I raised in the way described from cuttings produced by early forced stock made nice little plants, with several shoots each before autumn; the pots were plunged in ashes during the winter in the frame they occupied in summer, covering to keep out frost. In March they were turned out of the pots and planted in a bed made up of peat, sand, leaf-mould and a little rotten manure, the points of all the strongest shoots being cut away before they began to move, the effect of which was that they were as full and compact in growth as possible. Some flower-buds were set in autumn, but another season's growth was given them before the plants were taken up and potted, at which time they were so full of buds that when they came into bloom the flowers all but hid the wood. The treatment described may seem to entail a good deal of labour to bestow on a hardy shrub, but there are few things that give a better return for the attention they receive. When these Azaleas are forced, like most other hardy shrubs, the plants are often very badly treated afterwards; when the flowers are off them they are crammed into any out-of-the-way corner, not unusually out-of-doors, exposed to the cold cutting winds and frosty nights, and this after having been subjected to the exciting influence of a temperature higher than they like. The plants forced are mostly not larger than will admit of their being grown on and prepared for doing duty in the same way a second time.

To prepare them for this as soon as they are out of bloom, all the shoots should be cut well back, after which the plants ought to be placed in a cold pit or frame, giving them air in the daytime when the weather is suitable, with as much water as will keep the soil in a healthy state. So managed they will be in a condition for planting out as soon as the cold weather is past. A suitable bed should be prepared if the natural soil is not such as will suit them. They are fond of peat, but they will thrive in good free loam, if not too sandy. As a matter of course, plants that have been forced will not move nearly so freely the summer following as others that have not been so treated; but the second season, if all goes well, will see them quite recovered, so that they will make plenty of growth and mature flower-buds in quantity, that will make a display much exceeding that which is obtainable from smaller examples. One great advantage which these Azaleas possess is that they are equally adapted for pot culture by those who have no place where a higher temperature than that of a greenhouse is kept up, as they are for forcing, as if the plants are potted in autumn and at once moved to a greenhouse, they will bloom to perfection at the end of winter and beginning of spring. So managed, the flowers naturally have more substance in them, lasting proportionately longer, whilst the much-prized pink tint which many forms of the plants possess is more intense.



Flowers of Azalea mollis.

an intermediate temperature. As soon as the cuttings begin to grow the points must be pinched out. It is essential to attend to this in good time when the plants are required for flowering in pots, as they should be as close and compact in growth as they can be got; for on this depends their ability to produce the most flowers on small plants. Directly the little plants have got well rooted, move them into 3-inch or 4-inch pots, and transfer them to a cold frame or pit, where they must be encouraged, by keeping them moderately close

5029.—Bulbs in pots.—All the subjects you mention will bloom the second year if left in the pots they now occupy; but not so well as in the first year, and probably not at all if they are not well cared for. Unless you are prepared to devote some time to them after they have gone out of flower you had better not keep them over for another year. The treatment they require is that the foliage should not be injured from any cause, and that the roots get sufficient moisture to keep the soil moist until the leaves die down of their own accord.—*J. C. C.*

—The better plan, of course, is to take the bulbs out of the pots and keep them in a dry place; but if you do not force them hard, really only letting them come into bloom naturally almost, you may for one year let them remain in the pots, particularly the smaller kinds, such as *Snowdrops* and *Chionodoxas*.—*C. T.*

—If carefully managed most of the bulbs named would flower in a window year after year; but they must have attention with water after flowering till the growth has ripened, and they should be repotted in fresh, sweet soil early in autumn. Of course, such bulbs will not force so well as those newly imported.—*E. H.*

5017.—A greenhouse wall.—You might cover the wall with Cork if you like, but I much prefer such things as *climbers*—*Ficus repens*, which makes a surface of deep-green leafage, the beautiful *Plumbago capensis*, and its variety *alba*, *Lagereria rosea* and *L. alba*, or you can build up a sort of rockery, and plant in varieties of fine-leaved *Begonia*, *Maiden-hair Ferns*, and many other kinds. I was in quite a cold house

the other day—at least, only sufficiently heated to keep out frosts—and the fine-leaved varieties of *Begonia Rex*, besides a number of such Ferns as *Adiantum emarginatum*, were in full beauty. You could also grow the *Lady's Slipper* (*Cypripedium insigne*), which would succeed under such conditions.—C. T.

— Except the affording a harbour for insects, such as woodlice, &c., there is no objection to doing as you suggest—indeed, it is a very common practice, and if plenty of moisture is supplied the results are, as a rule, good. There are plenty of suitable subjects for planting in the crevices or pockets, including varieties of *Pteris*, *Adiantum*, and other Ferns, *Isoplepis gracilis*, *Panicum variegatum*, *Tradescantia zebrina* and multicolor, fine-folaged *Begonias*, &c. If the whole is kept moist, insects will be much less likely to be troublesome.—B. C. R.

— A greenhouse wall covered with Ferns and creeping plants is very pretty, but to a certain extent *Virgii Cork* does encourage insects, and the continual dampness weakens the wall to some extent. For such a purpose the wall should not be less than 14 inches thick. Pretty well all the smaller greenhouse Ferns and Mosses will grow in such a wall, and in addition *Anthericum variegatum*, *Coprosma Baccata variegata*, *Enklia japonica variegata*, *Pennis repens*, *Dactylis glomerata variegata*, *Pestiva glauca*, *Leucophyton Browni*, *Sedum carneum tricolor*, *S. Sieboldi variegatum*, and *Vinea elegantissima* may be used.—E. H.

7011.—**Chinese Primulas and Deutzia gracilis.**—The best thing to fertilise single Chinese Primulas is a small camel's-hair pencil, which can easily be passed down to the pollen-bearing organs, and transferred from flower to flower. It must be done when the pollen is dry—about eleven o'clock in the forenoon. I have generally had a better crop of seeds from blooms fertilised later in the season than now, and for that reason I generally keep the later-blooming plants for seed purposes. *Deutzia gracilis* may be easily propagated from the young shoots in heat in spring; but a better way of getting up a stock is to plant out a number of strong bushes rather deeply in a bed of light, sandy soil. Every stem will then form healthy roots round the base.—E. H.

— These must be crossed with a camel's-hair brush, inserting the pollen from one to the other, selecting, of course, colours that are likely to produce offspring of some interest and value. One must be very successful nowadays in the hybridising of Chinese Primulas to get anything distinctive or an advance on varieties already in cultivation. In crossing, aim at getting good colours, fine form in the individual flower or "pip," and a robust frond that is crowded with flowers, strong, sturdy, and the foliage of robust character. After hybridising place the plants on a shelf by themselves and in a sunny corner, so that the pots can ripen up well. Be careful to give ample water.—C. T.

— The simplest way of getting Chinese Primulas to seed is to choose those plants which flower late in the spring, and stand them out-of-doors. If you have only a few plants to deal with you may take them out of the greenhouse in the morning and move them back again at night; the insects will then fertilise the flowers sufficiently to obtain plenty of seed. I have seen many scores of these plants in the open air at the beginning of May, with only a mat placed over them at night to protect them from frost or heavy rain, and they have produced more seed than those plants that were manipulated upon with a camel's-hair brush and had the protection of a warm greenhouse. A few plants stood on a shelf well up to light and air in a greenhouse in the months of April and May will generally furnish sufficient seed for one's own use. Fairly hard young growth of *Deutzia gracilis* will strike freely during the summer in a close frame if they are kept watered and shaded.—J. C. C.

7027.—**Forcing Lily of the Valley.**—Leave the pots in the hot-bed until the growth is 4 inches or 5 inches high and the flower-buds just appearing, then clean them over (of course, the crowns will have been buried some inches deep in fibre) and bring them into a warm-house or pit at 69 degs. to 70 degs., exposing them gradually to the light, and by the time the leaves are green the flowers will be expanding. They need to be kept in this heat for the year.—B. C. R.

PALMS FROM SEED.

At no time were Palms more popular than they are at the present day, and consequently large importations of seeds reach this country by means of which the supply is kept up. Not only do our nurserymen import seeds for their own stock, but large numbers are frequently offered for sale at the London auction rooms, and as a considerable quantity has been announced for distribution in this way, a few words as to their general treatment may not be



"Bungalow" or "Cabbage" Palm (*Scaevola elegans*).

out of place. The all-important consideration is to obtain good seed—that is, with the germ in a plump state, and ready to start into growth when placed under favourable conditions, for in the case of many kinds if the seed has been kept too dry or from other causes, the germ will shrivel up, while the body of the seed remains quite fresh and sound, and to anyone unacquainted with this peculiarity it appears to be in very good condition. With the more rapid means of transit and superior mode of packing, the seed reaches here as a rule in better condition than was formerly the case. The usual way is to pack the seeds in dry earth—that is, a layer of fine earth—then a layer of seeds till the box is filled, when of course the seeds will be perfectly air-tight, and, generally speaking, they reach this country in good condition.

RAISING THE PLANTS.—In sowing the seeds, whether in pots, pans, or boxes, the soil chosen should be a good yellow loam, lightened by an admixture of coarse sand. All mixtures of peat, manure, or leaf-mould should be avoided, unless the loam is of too heavy a consistency, when a little well-decayed leaf-mould will be of service. It is better to pass the soil through a sieve with half an inch mesh, as the young roots are not so liable to be injured when potting the seedlings. In preparing the pots, pans, or boxes for sowing, fair drainage should be ensured, but Palms do not require nearly so much drainage as some subjects, all that is needed being to allow the surplus water to drain away. The soil must be pressed down moderately firm and made level; then when the seeds are sown care must be taken that they are

not overcrowded, and they should be covered with soil to about their own depth. Until the young plants make their appearance above ground light is, of course, not essential, so that the boxes may be stood underneath the stages or in any out-of-the-way place, provided a good heat is maintained and the soil not subjected to any great extremes either of drought or moisture. The very best position is a bed of Cocoon refuse with a gentle bottom-heat, in which the pots or pans should be plunged, when if the seed is fresh it may be reasonably anticipated to

soon germinate, though in this respect many Palms behave in an erratic manner, for frequently a few will make their appearance quickly after sowing, while the bulk will not germinate till a long time after. When the first leaf is well developed is a good time to pot off the young plants, for which purpose the soil should be the same as that above recommended in which to sow the seed. For

The first potting it will be found an advantage to sift the soil as for sowing. For most of the generally cultivated Palms small pots known as thumbs are large enough, and if one good piece of crock be placed in the bottom of each pot, it will afford sufficient drainage. As the seed remains for some time attached to the

young plant, a good general guide as to the depth it should be placed in the soil is thereby furnished, and that is in potting to place the young plants at such a depth that the seed just rests on the surface of the soil. The compost employed must be pressed down moderately firm. Should the roots be as all matted together, they must be carefully disentangled, or if broken or bruised however slightly, the result is likely to be the death of the plant. After potting and a watering sufficient to settle the soil, the pots should be plunged in a gentle bottom-heat, when the after treatment will consist in watering when necessary and in syringing more or less frequently, according to the season of the year and the weather experienced. It should be borne in mind that a humid atmosphere is favourable for most Palms, being very conducive to rapid growth. As repotting is necessary, much the same kind of soil may be used, except that a little well-decayed manure will in the case of the stronger growing kinds be of service. Palms, as a rule, very much resent being over-potted, and to the uninitiated it is surprising what effective specimens can be grown in pots 5 inches or 6 inches in diameter. Of course, as the pots get full of roots an occasional stimulant is necessary to maintain the foliage in good condition, and the soil must not be allowed to get dry, as if this happens the foliage is very apt to acquire a sickly hue. When in small pots and they are full of roots, it is almost impossible to overwater them, provided the surplus water is able to drain away. Where Palms are kept in the dwelling-house, a very important factor towards maintaining them in good condition is to frequently sponge the leaves with tepid water to remove the dust, which quickly gathers on the foliage. As the roots of most Palms are of a deep-descending nature, they, as a matter of course, coil round the bottom of the pot, and when repotting takes place, these roots should be allowed to remain undisturbed, as if injured it may prove fatal to the plant. The principal insect pests from which Palms suffer are different forms of scale, some of which are more troublesome than others; but in the case of any of them the object aimed at should be to clear them off directly they make their appearance, as if allowed to effect a thorough lodgment on the leaves they are very difficult to eradicate without injuring the tender, unfolding foliage.

VARIETIES.—Of Palms that are used for decoration in a small state may be especially mentioned the different *Kentias* now so extensively grown by all our nurserymen, *Lataria borbonica*, *Coccoa Weddelliana*, *Geonoma gracilis*, *Scaevola elegans* (see cut), *Arcaea lutescens*, *A. sapida*, *A. Buerei*, and *A. Verschaffelti*, *Phoenix rupicola*, several species of *Chamaerops*, *Rhapis thalictroides*, and *Corypha australis*. As several of these will do well in a greenhouse temperature, they are suitable for a dwelling-house. But in raising them from seed, even the hardiest are much

better if kept during their earlier stages in the stove, as they make much more rapid progress, and consequently form effective specimens in much less time than if they do not get the additional heat when young. The hardiest of all the above are *Chamaecyparis exelsa* and *C. Fortunei*, *Corypha australis*, and *Rhapis flabelliformis*. This last is an exception to the others in its method of increase, for seeds are rarely obtained; but as a set-off, it pushes up suckers freely, which when sufficiently advanced can be taken off with their attendant roots and replanted. H.

5012.—**Heating a greenhouse.**—I have used the earthenware pipes for lines many a time, but so far never for hot water. I recently, however, saw part of an apparatus taken from a house that had been heated in this way, and the pipes were all sound and tight. I really do not see why it should not answer, and, indeed, intend to try it myself one of these days. If the joints are carefully made with fresh Portland cement the whole will be quite tight, and ought to answer satisfactorily, but I should endeavour to avoid getting the pipes overheated at any time, the water certainly ought never to boil. With the tank not more than a couple of feet higher than the pipes, and one or more good sized air-pipes, there would be no pressure in the pipes likely to do any harm.—B. C. R.

5015.—**Cost of heating a greenhouse.**—This is a question that has troubled the minds of a good many people before now, and is likely to do so for all time, because, as no man can foretell the kind of weather we are going to have, it is impossible to estimate the probable cost of fuel to heat a given space. Six weeks of frost in the dead of winter will make all the difference in the calculations. Even without actual frost, if a low outside temperature prevails for several weeks, that will make all the difference in the consumption of fuel. So will also the form of houses, especially if they are high ones, and the span-roof form is more expensive to warm than a lean-to. "Scotia" will understand that the superficial area to be heated is a consideration that cannot be ignored in framing an answer to his question. Employers of gardeners often think that more fuel is consumed than is necessary; but a little consideration will show that they are mistaken, because if a higher temperature is maintained than the plants require it would do them injury, and no skilful man would so act against his own interests.—J. C. C.

5022.—**Covering for a stage.**—Yes, pot plants standing on an open stage just over three rows of hot pipes are sure to get badly dried at times. Your best plan will be to lay down sheets of the galvanised corrugated iron, or stout slates would do, covering them with 2 inches or 3 inches of fine "ballast," beach shingle, or gravel (not ashes), and stand the plants thereon. The material should be kept moist by frequently syringing between the pots. If you give the iron a coat of hot limo before using, it will last all the longer.—B. C. R.

Corrugated iron will make a good covering on the stage. Run a line of angle iron back and front of the stage for the corrugated iron to fit into. Sand or fine gravel will do to stand the pots on.—E. H.

You could use corrugated iron, and it is done under such circumstances. Put the plants upon shell or small stones, which will retain the moisture fairly well. During the whole year it will be very necessary to look after the plants well, otherwise they will soon wither.—C. T.

Asparagus plumosus as a basket plant.—This forms a splendid basket plant. To grow this plant well it must not be cramped at the roots, my baskets being quite 2 feet over. The plants, as they grow, climb up the chains by which the baskets are suspended, and also depend all around, forming altogether beautiful objects. Last season I saw some magnificent baskets of this plant in the large winter garden at Witley Castle.—A.

4973.—**An unheated frame.**—"Lady's Slipper" will find the following (orchids do well in an unheated frame: *Cypripedium calceolus*, *C. spectabile*, *C. macranthum*, and *Epipactis gigantea*. I have had plants of the above in a similar position for the last five years, and they grow well and bloom well.—AN ORCHID LOVER.

5018.—**Hoya and Dracæna, &c.**—Supposing that the Hoya is the ordinary *H. carnosa*, or Wax-flower plant, little difficulty should be experienced in wintering this in a sitting-room; in fact, it makes an excellent window plant. It should be kept nearly dry at the root until growth recommences in the spring, and, indeed, in severe weather, if allowed to become quite dry, will be all the safer, and also more likely to bloom freely next season. *Dracæna terminalis*,

belonging to the variegated-leaved section, is more delicate, and really needs the warm, moist atmosphere of a stove. Keep the plant as warm as possible, and the soil moderately but not too dry, and it will probably survive, though it is almost sure to become more or less shabby. *Polystichum angulare* is a hardy British species, and thrives best in good sandy loam, made fairly firm. It is nearly or quite deciduous, so must not be overwatered while at rest.—B. C. R.

FRUIT.

SOME GOOD DESSERT APPLES.

PERSONALLY I am strongly of opinion that Dessert Apples approaching coarseness are objectionable, and certainly do not give the greatest satisfaction on the dining-table. Coarseness, I know, is a term that can rarely be applied to Cox's Orange Pippin, Margil, Ross Nonpareil, Fear's Pippin, and such like, but Ribston Pippin, Gravenstein, Bleuheim Pippin, Adams' Pearmain, King of the Pippins, and other popular varieties that could be named are frequently seen in prize-winning collections of a size qualifying them for cooking rather than for dessert. There are plenty of really good medium-sized to small-fruited sorts available for cultivation other than the dozen or so varieties on which there has been such a great run during the past decade, to a few of which I will direct attention, taking them somewhat in alphabetical order:—

AROMATIC RUSSET is largely grown in the south-western counties, but, according to my experience, not often met with elsewhere, yet it is a first-class variety. It succeeds well under any form of training, good pyramids being easily grown, while there are few more reliable as regards free bearing. The fruit is of medium size and nearly covered with russet, therefore not particularly attractive in appearance, being, however, of excellent flavour, and,

sized, prettily-coloured fruit, which are of excellent quality late in August.

BRADDICK'S NONPAREIL I have frequently praised in these pages, being of opinion that it is one of the most valuable dessert Apples in cultivation. In habit it is somewhat straggling and slender, horizontal or espalier training answering best, though fairly good bushes, pyramids, and standards may be grown. It is one of the sweetest bearers, the fruit being of medium size, much flattened, and very distinct. When ripe it is fairly attractive in appearance, of excellent quality, and keeps admirably. The season extends from November till late in April.

COURT OF WICK, a Somersetshire Apple, and at one time a favourite variety, is now much less grown, owing, doubtless, to the smallness of fruit. It is a juicy, however, that such a pretty and richly-flavoured variety should go out of cultivation. It is not a very strong grower, by no means fastidious as to soils or position, and a sure bearer. The season of this superior dessert Apple extends from November to March inclusive.

GOLDEN KNOB, of which an illustration is here given, is distinctly a Kentish Apple—at any rate, I have never met with it much elsewhere than in Kent and that part of Sussex adjoining, though why its cultivation should be so much limited is hard to determine. It is excellent either for home consumption or market, keeping good till long after most other varieties are over. Standard or orchard-trees attain a moderately large size and rarely fail to bear well. The variety is also admirably adapted for garden culture. The fruit is somewhat small and completely covered with russet, while the flesh is yellowish-green in colour, juicy, and brightly flavoured. Too often, however, the trees are cleared of their fruit before it is fit to store, the proper course to pursue being to leave the Golden Knob to the very last before gathering, a moderately severe frost doing it more good than harm. If they are dragged from the trees the fruit shrivels badly and is not fit to eat at any time. The variety ought to be at its best from midwinter till April.

GOLDEN PIPPIN is far more common than the foregoing, and though one of the smallest of dessert Apples, is also one of the best. Every lover of Apples who can afford the space ought to plant a tree of this delicious variety, and would not often be disappointed as to its cropping qualities. The bush or informal pyramidal form of training best suits it, while the fruit is about 2 inches long and the same in depth, rich yellow in colour, crisp, juicy, and agreeably flavoured, being fit to eat in November, and keeping good till the end of March.

GOLDEN REINETTE, another very old and excellent variety, still finds plenty of admirers, and it is to be hoped, will continue to do so. On our cold clayey soil it fails badly, but where the subsoil is of a more gravelly nature the tree attains a good size and crops heavily, garden culture suiting it well. The fruit is medium-sized, very pretty, and (when ripe) juicy and richly flavoured. In season from November till well into April.

KERRY PIPPIN, a small and pretty variety, ripening during September and October, still has plenty of admirers, and fully deserves that distinction. It is amenable to any form of training, and seldom fails to be productive.

LAMP ABBEY PEARMAIN.—This, a few years ago, was usually included in most selections of dessert Apples, but, being small fruited, I am afraid it is likely to drop out of cultivation. The variety is adapted for either orchard or garden culture, and for any form of training. The fruit colours prettily, and when in season, or say from mid-winter till April, is decidedly superior in point of quality.

LORD BURGHLEY is much less well known, but is equally worthy of being largely grown. The tree is inclined to canker somewhat on heavy soils, but in spite of this failing it should be given a trial everywhere. It can be trained as a pyramid, and makes good dwarf or corner on the Paradise stock. With me it seldom fails to



Fruiting-branch of Apple "Golden Knob."

as its name implies, highly perfumed. In common with most other russet-cotyled, yellow-fleshed Apples, care must be taken not to gather the fruit too early, or otherwise it will become tough and flavourless. The proper season is December to February inclusive.

BENONI is even less well known, but, all the same, it is one of the best flavoured second early Apples I am acquainted with, and is a great favourite with that experienced pomologist, Mr. W. Pragnell, of Sherborne Castle. It is said to be of American origin, and both in the mids and cordons bear good crops of medium

hear well, and if not gathered too early will keep fresh and good till most Apples are over. The fruit is somewhat dull in appearance, but it is very juicy and of good spicy flavour.

PEARSON'S PLATE AND SAM YOUNG are both good growers, very prolific, small-fruited, and of excellent quality. The latter variety is in season from November to February, while the former lasts about a month longer.

SEEK-NO-FURTHER is not often met with, but it is quite deserving of being preserved. It forms a medium-sized tree, its habit suiting small gardens well, and in most favourable seasons crops satisfactorily. The fruits are somewhat oval, very richly coloured, and tender and pleasing. Carefully stored, the season extends from November till March.

WYKES PRINX is generally recognised as being a very reliable and good Apple, but its smallness militates against it. The tree grows moderately strongly and may be grown under a variety of systems. Though not particularly showy, a well-selected dish looks well on the dining-table, and no fault can be found with the quality. It is in season from November till April. W. I.

5023.—Pear-trees not growing.—One sentence you use in your inquiry appears to me to explain the cause of your trouble. You say two years ago you had the meadow trenched up. Now, as the word trenched is understood by gardeners, it means that you placed the good surface soil at the bottom and brought the inferior to the top. If this is what you have done, it is sufficient to account for the trees not growing; the soil is too poor for them. To make a permanent job of it, you cannot do better than trench over the ground again, and bring the good soil to the top. Probably a heavy dressing of rotten manure placed on the roots after the surface soil is laid on one side, will start the trees into growth, but you will have to repeat this operation every year in a sandy soil until the roots have found their way down to the turfy soil below. You have acted wisely in not pruning the trees, nor should you do so until they have made sufficient growth to require it; not, in fact, until it gets crowded or unlimb in length.—J. C. C.

Give the Pear-trees a good top-dressing of rich manure. They require something better than sand to grow. E. U.

5019.—Treatment of Cherries.—Prune the shoots back to within five eyes of the base where it was lopped; this will allow of two branches being made on each side and a leader in the centre. By this means the trees will be furnished with branches properly from its base. When maiden trees, such as the one quoted by "Pine," are not cut hard back the first year, the tree eventually becomes leggy, owing to the non-development of the buds nearest the base, consequent upon the flow of sap going direct to the upper part of the tree.—S. F.

The Cherries should have been cut back before. It would have been better stopped when about 18 inches high, and the laterals made labour laid in. However, cut back now to within half-an-inch buds of the bottom, and next summer train all the shoots in.—E. H.

Vine snags.—It is difficult to find a more appropriate designation for the long, crooked, and ugly snags found so frequently on old Vines. There seems to be no reason why these long snags should be left on rods, but it seems to be a practice with many growers. In time the product is small, thin wood and very poor bunches. If the process of pruning compels the formation of these long snags after a few years' fruiting, would it not be better ere the evil gets too great to carry up new rods from the base of the old ones, more frequently cutting away the whole of the snags one-half or one-third the length of the old rod, according to the run of the roof, tying the new rod in to fruit where the snags have been taken off, and so continuing to extend it the following years? Thus instead of seeing, as is so often the case now, Vines all snags, these old rods would be replaced every few years.—B.

5078.—Flies on fruit-trees.—Sprinkle the wall with a strong solution of Sunlight soap, 3 oz. to the gallon, adding a whiff of paradisal oil to each gallon. The mixture will not injure the trees.—E. H.

5067.—Worms on a lawn-tennis ground.—Scrape the ground with thin-water made from fresh lime. Repeat as often as necessary. Another plan of a more permanent character would be to take up the turf and put as much of chunder-rot as you can get on the turf on the sides.—E. H.

THE MAIDEN'S WREATH (FRANCOA RAMOSA).

THE subject of the accompanying illustrations should be found in every collection of plants of any pretensions. It is as valuable to the amateur with only a small greenhouse as it is in larger numbers for decorating conservatories. By some it is found to be tolerably hardy, but the position chosen for it in the open air should be a protected one as well as fairly dry. In the milder parts of the country it may with these precautions be depended upon in



Maiden's Wreath (F. ramosa) in a pot.

average winters. It is a Chilean genus belonging to the Saxifrage family. As a decorative plant for grouping it is peculiarly adapted whilst in flower. Spike succeeds spike, and these as a rule send forth laterals, thus keeping up a long succession of bloom. My practice is to grow it in a cool-house all the season; this is not necessary when not in flower. A cold frame or pit will do provided there is not an excess of damp during the colder season. At other times it may be stood out-of-doors with safety, but when in flower it is better preserved in good condition if under cover. In my case the temperature frequently falls below 40 degs. in the winter, and the plants are usually a long way from the glass, yet they do remarkably well under this latter unfavourable condition. The plants can be kept in good health for some years at a stretch, and as they increase in size they will be found equally useful for large houses. A fresh potting each spring should be given. The soil should consist chiefly of good friable loam with leaf-soil and sand. Firm potting is preferable to a loose condition of the soil, keeping the plants in a healthy state for a greater length of time. Propagation can be effected either by cuttings or seeds. Cuttings, I find, strike best in the early spring, each one being placed singly into a 2½-inch pot, with a liberal amount of sand. In a gentle warmth, but not too close or moist, these cuttings will soon strike. As soon as well-rooted, one shift ought to be given; this will suffice for the first year. The seed is now about ripe from plants which flowered early. To save time this could be sown at once, and the seedlings kept steadily growing through the winter upon a shelf near

the glass. By the spring these will make nice little plants with the possibility of a spike or two of flowers in twelve months. The best display will, however, be from plants at least two years old from seeds. Insects, to all appearance, do not trouble this Francoa, and it is fortunate this is so, for the foliage, being hirsute, is not easily cleansed. The plants when growing freely and showing flower will take a liberal supply of water, with a dose now and then of liquid-manure as an assistance. The illustration on this page shows how well the plant will grow and flower in a pot. The spikes when cut are useful for trumpet vases, and also as a wreath for a lady's hair (see cut, page 361), lasting well. Other Francoas worth growing are F. appendiculata, with deep-coloured flowers, and F. sonchifolia, rose-coloured flowers. H.

ORCHIDS.

ONCIDIUM SPHACELATUM.

IT is now some long time ago since I promised "C. Cameron" I would say a few words upon this species. When I received the flowers from him in the spring of the year I was much put about to furnish all the information asked for, and so the request was overlooked. I quite agree that the species above-named is a very pretty and showy one, and the flowers sent by "C. C." represented a very good one, reminding me of a form which I used to grow years ago, which was called *Phelpsiannum*; but this, I think, was only a local name, and I do not see it recorded anywhere. *O. sphacelatum* is a very free-growing plant, and it was sent to this country from Guatemala more than fifty years ago, and I do not think it has ever been lost to cultivation since. As "C. C." says, it is a splendid Orchid for growing with other stove-plants, as it thrives well in such situations, and flowers in profusion. Now, I like to see grow the majority of Orchids, for why they should require a separate house to grow in I cannot think. The only thing I have to say against the growing of these plants in a house with a mixed collection is that they are apt to get overshadowed and smothered up by the foliage of the other things that are not Orchids; but this can be obviated by the owner if he takes the least trouble with his plants. As I have before remarked, *O. sphacelatum* is a free-growing plant, and it soon attains to considerable dimensions, and if it grows to an inconvenient size in the course of a few years, it can easily be cut through and divided, whereby two or three specimens are produced. These should be potted in well-drained pots, and be placed in a compost consisting of fibrous peat and Sphagnum Moss. It likes an abundance of water when growing, and even when not in an active state it should have sufficient water to keep the bulbs in a plump condition. This is a point that wants watching, for if this is done it is surprising the difference that will be seen in two plants that have been treated in the two different ways. When I was a young man amongst Orchids it was always the right system to give the Orchids a thorough good drying as a resting season, but as I grew to be my own master amongst the Orchids I determined to see if better treatment would not make these plants present a more pleasing appearance, which I did, and here record it for the benefit of my readers, and a fair amount of water through the winter months will prevent the bulbs putting on that starved and wrinkled aspect which they assumed under the dry system which used to be given them some few years ago. This is a plant which is a special favourite with ladies on account of the long spikes being much branched, and the short branches forming such elegant little gems for their own cutting, and this I would always grow a plant or two for—it makes such a lot of difference if a lady can cut her own flowers. MATT. BRAMBLE.

CATTLEYA WALKERIANA.

THE statement made to me by "James Walker" only goes to prove that he is either a young grower of Orchids or that he has not made them a study, for he says, in sending me a flower of this plant, "What is the cause of it going wrong in the flowering stem?" Well, "J. W."

must know that this is a feature of the species which used to be considered peculiar to this plant, only the same as I have pointed out in the case with *Epidendrum Standfordianum*; but one or two others have appeared which have the same peculiarity. The flower sent to me is a very deep-coloured one, almost as deeply coloured as a good form of *C. nobilior*, which flowers in the same manner on a small and weak leafless growth, and which dies away soon after the blooms. *C. Walkeriana* is one of the finds of Gardner, when collecting in Brazil, now upwards of fifty years ago, near the diamond district, and which became known in English gardens by the name of *C. bulbosa*, and which it was long called. It is a free-flowering plant when grown well, the curious shoots upon which the blooms are produced usually bearing a pair of flowers each, and these last a long time in full beauty if ordinary care is taken to prevent water from the syringe falling upon them; the colour of the sepals and petals being rich rosy purple, the petals much broader than the sepals; the three-lobed lip is panduriform, the side lobes being reduced to small, erect, ear-like appendages, which cover the column only at the base; these are deep rosy-purple, the stout column being of the same colour, the front lobe of a rich amethyst-purple, streaked with deeper purple, and at the base it is of a pale yellow. This is an Orchid that requires to be kept warm all the year round, and to have a good moisture in the air at all seasons; of course, what is considered a fair amount in the summer season would be too much in the winter; but as the plant grows near streams of water, and as its roots are thrown out a good bit from the stem upon which it grows, it derives a certain amount of nourishment even in the resting season. I have found the plant to grow and do best upon a bare block of wood, not the thin pieces of wood which nowadays are too often used in trade collections, but on a good-sized block of wood; it does not so much matter what kind of wood, but I think Willow is the best; there should be just enough Sphagnum put upon the block with the plant to keep it moist, and the air should be kept moist. I do not think it is any good to try pot-culture with it—at least, I could never succeed with it treated in this manner—but it may be grown in hanging earthenware pans with just the least bit of peat-fibre and some Sphagnum Moss over the crocks. It is a very beautiful species with a cheerful good-sized flower, and although a little difficult to manage, it is yet always a very desirable plant, but it is not one I should recommend the young beginner to try.

MATE. BRAMBLE.

LADY'S SLIPPER ORCHIDS (CYPRIPEDIUMS).

THE *Cyripediums* are plants well suited to the wants of amateur gardeners, for they do not require any great amount of artificial heat or anything more than ordinary appliances to grow them to perfection, and they flower very freely, and last a long time in good condition, and few flowers find a readier sale. Many gardeners in private places where the surplus produce is sold have told me that they get more inquiries for these than any other flower they grow. Certainly, some of the new kinds are expensive, but the older kinds, such as *C. insigne*, *C. barbatum*, and others are not only reasonable, but are readily increased by division. They do well in pots or pans, in a mixture of peat, Sphagnum Moss, and charcoal, and may be grown well under the shade of Vines or other fruit-trees, and at this period of the year, when a good many will be in flower, they are quite at home in the conservatory or stove-house, where rather a dry temperature is maintained. There is something of charm about the culture of Orchids, and many amateurs would like to embark in their culture if they were not deterred by exaggerated notions of the expensive appliances in the shape of tropical stove-houses, hanging-baskets, &c.; but these are really useful plants that repay any care bestowed on them, with handsome, lasting, and beautiful flowers, and doubtless many growers have been disappointed with their first experience of Orchid growing, for all Orchids are by no means suited to amateur cultivation, and can only yield disappointment to anyone that embarks in their culture.

J. O., Hants.

FERNS.

THE BRITISH HART'S-TONGUE FERN (SCOLOPENDRIUM VULGARE).

This plant in its normal condition cannot be mistaken for any other Fern. One species only inhabits Britain, but this is very widely distributed. It crops out more frequently in spots where chalk predominates in the soil. It has broad, simple fronds, which vary from a few inches to some 2 feet or 3 feet in length; and only the other day I had a specimen sent me by a friend which I had not before seen. It was the variety *reniforme*, having fronds about 3 inches long by 2 inches in breadth. This is one of the innumerable varieties into which this Fern has passed many forms having their fronds ramified and crested quite out of all conception; and it is to the beauties of many of these forms which I would draw the attention of my many readers. At this season of the year they are specially to be considered, because their fronds are persistent and evergreen, standing in the open fernery without the slightest protection; but this suits them better if slightly protected from the north and east winds. The bright and shining green of their fronds always presenting a cheerful appearance, whilst if grown as pot plants they are equally beautiful, and are always available for hall and room decoration; and they may be used with a good deal of propriety for the ornamentation of window-boxes during the dull, cold days of winter, when their roots are protected from the sharp frosts. I think the only position in which I dislike to see these Ferns is the outside of a window in the winter as pot plants, for in such a situation they stand but a poor chance of thriving long. The frost kills their roots, and the fronds become crippled and torn, and they are no longer an ornament in the position named, and have to be cast on one side. Now, some of my readers may be somewhat astonished at this and say that being a British plant, and a common one too, why will it not succeed as a window plant? And so it will when protected by the soil of a window-box, but not to stand upon the open sill in a bare,



OUR READERS' ILLUSTRATIONS: Spray of Maiden's Wreath on a lady's head. Engraved for GARDENING ILLUSTRATED from a photograph sent by Miss Ellen L. Coles, Elthick, Streatham. (See article "The Maiden's Wreath," p. 560.)

unprotected state. It is beyond a plant's endurance, be it ever so hardy; for its roots, which in a state of nature live in the soil, here, in a state of cultivation, become frozen and die. They are admirable ornaments in the cool fernery, slightly protected, but without any heat whatever. The best soil to plant them in is some good friable loam, mixed with some sand and with some calcareous soil in it. They should be potted firmly, leaving room for a good soaking of water, of which they like a goodly quantity during the growing time, as well as frequent light airings overhead; but during the winter, if they stand out in the frames, the pot

plants should be carefully and frequently looked over to prevent slugs and snails from eating and defacing the fronds, and in the open fernery all sorts of things should be laid down to trap them. The following kinds are all beautiful. I cannot give any description of these, because it would be too similar; but any person having a good collection would soon recognise them. The following firms keep the best collections of Ferns at the present time: Backhouse, of York; Birkenhead, of Sale; Bull, of Chelsea; May, of Tottenham; Veitch, of Chelsea; and Williams, of Holloway. The following two dozen kinds are all good and worthy of general cultivation: *S. capitatum*, *contractum*, *Cominsii*, *corymbiferum*, *crispum*, *cristatum*, *crispum fimbriatum*, *eristatum*, *digitatum*, *grandiceps*, *jugosum*, *miguete furens*, *Kelwayi*, *lacinatum*, *Macleodsonii*, *maximum*, *ramo-cristatum*, *ramo-marginatum*, *reniforme*, *sagittato-cristatum*, *Stansfieldi*, *Morgani*, variable, and *Woridi*. J. J.

DECIDUOUS FERNS.

MORE attention might very advantageously be given to this section; most of them die off towards the winter, thus allowing more room for other things—in itself an advantage in many respects. These Ferns are not probably so abundant as they would otherwise be, simply because they are deciduous. This may be attributed in some instances no doubt to non-attention when they become shabby; not that they want a great amount of care, but they should not be allowed to get too dry. If the soil be kept in a happy medium the plants will be right enough, and will after a rest start with renewed vigour. Any attention that may be needed in the way of potting should be seen to as soon as the young fronds begin to make a move; if, however, my increase by division is necessary, that should be done a little sooner, so as not to cause any injury. As the growth begins to rise away from the soil see that the plants are kept well up to the light to prevent the stems drawing up abnormally long and slender. When the first fronds are more fully developed the majority of these Ferns will take water very freely, affording in this respect quite a contrast to the previous or dormant treatment, but as signs of fading and disposition to cease growing are apparent, then withdraw the water gradually. These deciduous Ferns are useful for all purposes to which a Fern can be applied, whilst as regards temperature they can be had from those suited to the stove downwards to the cool-house and cold pits. Of all these Ferns there are none, I think, to surpass

LEUCOSTEPIA IMMERSA, which in appearance very closely resembles *Davallia Mooreana* unless it be minutely inspected, when the difference is apparent. It is of smaller and more compact growth, making beautiful little plants in 5-inch and 6-inch pots. If larger plants are needed, then I would advise pans in preference to pots. Another excellent way of growing this lovely Fern is in baskets. These may be of wire, of rustic work, or of pottery-ware, in any of which they thrive well and make a mass of roots. The best effect is obtained, in my opinion, with this Fern when grown well exposed to the light. The bronzy tints then assumed cause it to be most attractive, whilst this kind of growth is also the most durable. It is a variety easily increased by division, and there should be no difficulty in obtaining a stock thus or by spores. I note that it is now included amongst the *Davallias* in the "Dictionary of Gardening." *Davallia immersa* sounds quite as well, but one is often accustomed to the older names and does not readily relinquish them. It may be grown in a cool-stove or temperate-house with the greatest success. Another good Fern of this class is

DAVALLIA BULLATA (the Squirrel's-foot Fern), one of the prettiest of the dwarfer species, and one which should find a place in the smallest collections. This also makes a beautiful basket Fern, is easily grown, and as easily increased by division. It is also admirably suited to the fernery for growing upon walls or pillars, or it may be cultivated with equal success in either pots or pans, flat or rounded up as may be desired. This Fern will with good attention in the way of top-dressing remain in good health all the year round, and will keep up. This, however, should be done occasionally, doing away

with the older rhizomes in the process. In small pots it is a very suitable Fern for decoration, whilst for supplying cut fronds it is one of the best that can be grown, the fronds lasting well in the young as well as in the mature state. The smallest fronds make capital material for barking up button-holes.

DAVALLIA ROSSETTA is another good Fern of this class, particularly as a decorative variety for clothing walls, for baskets, and for cutting, giving a good supply of fronds in the autumn, like the foregoing. It may be grown in the temperate-house. **D. lullata** I have kept safely enough when at rest in 45 degs., with 10 degs. or 15 degs. more when growth commences.

Amongst the **Adiantums** there are some which come under this category also.

ADIANTUM FOSCENSEM, a gem amongst the Maiden-hairs when well grown, does best when treated as a deciduous Fern. This species is not nearly enough grown; in fact, it seems to escape notice almost entirely, whilst the larger form, **A. concinnum latum**, comes in for a much larger share of attention, although in my opinion it is not nearly so beautiful; it has size in its favour—that is all. Both of these, but more particularly the type (**A. concinnum**), do best in the warm-slow, where this species makes a beautiful basket-plant.

A. ETHIOPICUM ASSIMILE is another very charming deciduous Fern, casting its fronds in November, and starting into fresh growth again in March. This is essentially a Maiden-hair Fern for the many, being easily cultivated in a cool-house; in fact, it has been known to live out-of-doors through the winter. It makes a very pleasing basket-plant, the creeping rhizomes appearing round the sides and the bottom. The fronds are pale-green in colour, but do not last well in a cut state.

A. AMABLE, also known under the name of **A. Moorii**, makes a beautiful basket Fern, having in this respect the properties of the foregoing species, but possibly in a more marked degree. It is a rapid-growing Fern, nearly or quite (according to the temperature) losing its fronds in the winter. It can be kept in a temperature of 45 degs., but is safer in 10 degs. higher. In the stove it makes one of the very finest of basket Ferns.

A. LUNELATUM is another deciduous species—one also that is of very slender growth. It should be grown as a basket plant, or at any rate suspended if in a pot. Having the property of reproducing itself from the extremities of the fronds, it soon makes a good growth when once it is started. This is also one that requires a liberal supply of water; even when dormant it should not be allowed to dry up. This list of **Adiantums** would not be complete were it not to include

A. PERIATEM, one of the prettiest of all, particularly whilst the fronds are still young. This species may be safely wintered in a cold frame or out-of-doors, even in the more favoured localities. In its wild state it is found in both hemispheres, being widely distributed. For planting out in the cool fernery it is strongly to be recommended. Its hardness has been well tested in some localities, but I am disposed to think too much exposure as a rule would not be beneficial. Shadow planting in particular is not advisable, particularly in cold situations. As a pot plant it can be strongly recommended, lasting a long time in good condition.

LYCOMIS SCANDENS does best when treated as a deciduous Fern, thus affording a suitable opportunity for making a wholesale clearance of any insect pests to which it is oftentimes predisposed. Scale and thrips are the enemies in this respect, and these cannot always be cleared out of such slender growth. As growth ceases in the autumn the plants should be kept fairly dry, then after a time as the fronds become shabby they may all be cut off. By this time, for instance, this may be done, only pot room is then required until young fronds appear again. When required mainly for cutting the better way is to train each frond up a slender string from the early growth, keeping each one to itself, so that it can be readily taken off when wanted. For twining round tall vases, rustic arches, &c., these fronds are extremely useful, particularly when the fertile ones are fully developed. I have seen it grown well upon the back wall of a viney. This was at Normanhurst Court, the country residence of Lord Russell. This species is now more generally known under the

name of **L. japonicum**. The list of deciduous Ferns might be further extended, but sufficient have been named to draw attention to a class which does not receive in very many instances that notice which they deserve. One would be almost inclined to think that the opposite would be the case when so many and varied plants are now wanted for decoration. Certainly they may be cultivated much more, and that with advantage. P.

5032.—**A new greenhouse.**—You may grow a variety of interesting plants in your greenhouse, one of the most beautiful and useful being the **Chrysanthemum**, and by striking the cuttings late you may get flowers until Christmas. I shall not give a selection, as in recent issues of **GARDENING** selections have been given for all purposes, and you must refer to them. Azaleas are beautiful, **A. Borsigii**, **Deutsche Perle**, the old **Fielder's White**, **Chrumer**, **Carmine**, and **Duc de Nassau**. The old **Double White Camellia**, and the varieties **Douckelhart**, **Marchioness of Exeter**, and the white hybrids are useful. Then select also **Fuchsias**, **Pelargoniums** of all sections, **French and Zonal**, the **Tuberous Begonias**, which will keep the greenhouse gay throughout the summer. **Bouvardias**, particularly the double **Alfred Neuner** and **President Garfield**, **Herbaceous Calceolarias**, **Tree-Carnations**, the **Crimson Winter Cheer** in particular, a dwarf, bushy, free-growing variety; **Cinerarias**, **Cyclamens**, **Fritia hyemalis**, the most useful of the **Heaths**, **Epacris**, **Heliotropes**, **Veronica Andersonii variegata**, **Salvias**, and the winter-flowering **Begonias**. Of climbers you may plant **Maréchal Niel Rose**, **Plumbago capensis** and the variety **alba**, and the beautiful **Lapageria alba** and **L. rosea**, whose waxy flowers are very beautiful. On the wall **Ficus repens** is very pleasing, forming a perfect mat of rich-green leaves, and do not forget a variety of Ferns may be grown, such as in the basket the graceful **Nephrolepis exaltata**, and in pots the most useful of all Maiden-hairs, **Adiantum cuneatum**, and **Asplenium bulbiferum**, **Cyrtomidium falcatum**, **Davallia canariense**, a small **Dicksonia antarctica**, **Pteris serrulata cristata**, **P. erecta** and its variety **albo-lineata**, and **P. tremula**. You may brighten the structure in winter and early spring by potting a lot of forced bulbs, such as the **Polyantus-Narcissus**, **Tulips**, **Daffodils**, **Snowdrops**, and **Chionodoxas**, both the pretty **C. Lucifera** and **C. sardensis**.—C. T.

4886.—**Primula obovata.**—To my mind, neither of your correspondents on page 534 have any idea of the poisonous nature of **Primula obconica**. A few years ago I was in a market nursery where it was largely grown. It showed no respect of persons; everyone who had the care of it in a shorter or longer time suffered from its poisonous properties, until it was impossible to get anyone to undertake the charge, and the stock was got rid of. It is not that it causes or aggravates erysipelas in those who are subject to it, but it produces a kind of blood-poisoning and eruption of the skin, which is distinct enough for a medical man who has once had a case before him to recognise it again. It mostly attacks the hands, arms, nose, and lips, the chief danger being in gathering the flowers. I believe the poison to be contained in the fine hairs that cover the flower-stems and leaves, but a doctor who had attended a number of cases stated that the very atmosphere of the house where they were grown was sufficient to continue the irritation. I succeeded in potting a large number of plants without injury by taking the precaution to rub my hands and arms well with tallow before starting. I do not think there is any harm in having a few plants, but the danger is when anyone constantly handles them, as is necessary where they are grown in quantity for market. If this is the intention of "Constant Reader," my advice is "Don't!"—KITT.

—With regard to the poisonous nature of this plant, and the very different opinions given by correspondents in answer to "Constant Reader," Nov. 11, allow me to give my own experience in the matter. In 1892, when I was matron of a large charitable institution, I always had a variety of plants, &c., from the conservatory in my sitting-room, and among others five or six specimens of **Primula obconica** in pots. Before long I began to suffer from an eruption

of the skin all over my hands and fingers, and to all appearance I was undergoing a severe attack of eczema. I tried all possible remedies, treating it as eczema; but it became worse and worse, till one day a friend calling, I apologised for the dreadful state of my hands. She said: "No wonder, with all these plants in the room." I said: "What do you mean?" She replied: "Why, of course, I mean all those **Primulas**, and if I touched one I should be covered with a rash before I got home." She continued: "Remove all those plants to-night, and in three days you will be well." I most reluctantly parted with my beautiful **Primulas**, and in an incredibly short time the irritation died away, and in a few days the misery I had endured was at an end, and my hands perfectly well. Now, it is very remarkable that I rarely touched those plants, unless by chance in watering them, so evidently to some persons they must emit a poison in a way not easy to explain, and since this dire experience I have been afraid to enjoy the companionship of even one of these lovely, innocent-looking **Primulas**, which are, too, so suitable for and easy to keep in bloom. Our gardener told me he also knew a man who could not keep them, as he invariably "had a rash" when working among them.—G. G. O.

OUTDOOR PLANTS.

IMPROVEMENT OF SOILS.

RECENTLY I gave a few notes upon liquid-manures, and I now follow with a few practical hints upon the above. The average amateur does not possess a favourable garden soil, and until this is remedied satisfactory results are not easily secured. It is not that the soil was naturally bad in the first instance, but it has been almost ruined by the builder. The clayey or gravelly subsoil, broken bricks, old mortar and cement, and other builders' rubbish unnecessary to particularise, makes a soil that would fully account for the many failures unless a little common-sense be devoted to its improvement. If what was once the surface-soil is naturally of a light character, the clayey portions may be left; but if the contrary should be the case, get rid of the clay as much as possible. Collect the bricks, stones, clinkers, &c., and empty them upon paths, or else as a drain. They may be placed in a heap in some damp corner, when with a few larger pieces, and a little suitable soil, a very slow collection of hardy Ferns may be grown. Presuming we have arrived so far, the next things are trenching and manures. Upon a soil of medium nature any manure will do; but if it is stiff, then use soot, a little lime, road-grit, leaf-mould, and others of a light and opening character, reversing this for a light and porous soil. Thoroughly mix the whole while trenching, and use a little judgment whether the whole, or only a portion of the lower soil, be brought to the top. Bear in mind that a stiff soil of a fairly rich character does not need much manure, and will soon get overrich in humus if so treated without being heavily cropped; whereas a gravelly soil will take double the amount of feeding with excellent results.

P. U.

A Carnation note.—I was told the other day that Carnations were the coming flower, meaning that they would be the most popular flower grown. While not thinking they will stand before Roses, I certainly think they are one of the most dangerous rivals the Queen of flowers possesses. Many readers have doubtless got a few plants of the tree or perpetual-flowering Carnations. These are generally grown for their grand winter-blooming qualities that they form a great feature among winter flowers, and should be in every collection of amateurs' plants. It will be necessary to keep a sharp look-out for maggots, aphids, and thump at the collar. Watering is of special importance in cultivating the Carnation, more particularly at this dull season. It is too late to strike any cuttings this year as they should be done in September or October. But if a special favourite is wanted in greater number, a few cuttings may be taken off early in February. Some pull them out in preference to cutting them off of the plant. There is not much choice. Either way they need the base of the cutting slit for a quarter to half of an inch upwards, as they root more freely when so treated. A very sandy soil should be used, and

pressed firmly around the cutting. Place them under a bell-glass, and in a temperature of 60 degs., if a very gentle bottom-heat can be given so much the better. Another good plan is to plant out the stock plants and layer the shoots at their base. These make the strongest plants, and may be lifted in August, potted, and stood in a cool frame. The greatest mistakes amateurs make with winter-flowering Carnations are too much heat, too much water, and not sufficient ventilation during open weather.—P. U.

CORN POPPY (PAPAVER RHÆAS).

In reply to inquiries, the Carnation, Picotee, and Ranunculus Poppies are double forms of the common red or Corn Poppy (see illustration), possessing almost every colour except blue and



Flowers of the Corn Poppy.

yellow, some being self-coloured, while others are beautifully variegated. They are also known as French and German Poppies. The very beautiful Shirley Poppies originated in carefully-made selections from the Corn Poppy. Being hardy annuals, the seed can be sown where they are to bloom. Sow thinly, and thin out the plants to 6 inches or 8 inches apart. They are also excellent flowers for a semi-wild place, as at a distance their effect is striking and brilliant in the extreme. G.

HOLLYHOCKS AND DELPHINIUMS.

In a mixed shrubbery, or on the skirts of a lawn, many grand herbaceous perennials can be grown, but those most suitable for small borders and gardens are not of sufficient size for creating the best effect where more space is available. Short-growing subjects have a somewhat funny appearance when placed in front of, or among a large range of shrubs. Fortunately there is a vast number of herbaceous perennials, and it is not difficult to select suitable subjects for almost any position. The two grand flowers at the head of this note are probably the best and most showy we could choose, while they are certainly among the easiest to grow and propagate. We also get an immense range of colour in them, the Hollyhock giving us white, cream, pink, yellow, red, maroon, crimson, and a deep slaty purple, while in the Delphinium we have blue in all its various shades. Both produce noble spikes of bloom, and are quite indispensable where large gardens exist. Around the borders of a well-kept public park a grand effect was produced during the past summer by using these freely. Seedling Hollyhocks of a good strain give considerable variety in colour, and are more vigorous and less subject to disease than struck plants from named varieties. Delphiniums may be parted almost *ad lib.*, and continue in bloom from the end of May until a sharp frost cuts them down. In order to get a good succession of spikes, it is necessary to cut these down as they go out of flower, otherwise the plant devotes its energies to maturing seeds. But if removal as soon as their beauty is past, other spikes push from the crown, and a grand effect is maintained until winter is well with us. My own Delphiniums were carrying good spikes of bloom up to November 7th, and even after that frost of several degrees (7 to 9) they have been quite showy. A spike of Hollyhock will continue in bloom for the best part of

three months, so that these two flowers afford a grand show over a long period. Both of them will grow in almost any soil; but if a deep, rich loam can be provided the results are much more satisfactory. The Hollyhock in particular is a deeply-rooted plant, and derives most benefit when the manure is placed some 14 feet to 2 feet deep. When growing near to established shrubs or trees, especially during a dry season like the past, the labour of watering will be amply repaid. Thorough soakings should be given, or none at all, one good watering being far more effectual than many of a half-and-half character. P. U.

4962.—**Planting Gladioli.**—I presume you mean autumn-flowering kinds (hybrids of *Gandavensis*). The best time to plant these is from the beginning to the middle of March. They do well in any ordinary garden, and may be planted 1 foot apart in rows, or in clumps of three to five bulbs in each between Roses, Dahlias, or other plants. They make a fine display in autumn, and are most useful as cut flowers, the spikes lasting a long time in water. They are now extensively used for church and other decorations, and to show how suitable they are for this purpose, I may mention that the Messrs. Kelway, of Langport (who grow thirty acres), send some thousands of spikes weekly to all parts of the country, the majority being used for decorations at harvest festivals, &c. There are many varieties, embracing almost every shade of colour now in cultivation. *Brenchleyensis*, bright scarlet, is one of the best to plant extensively for garden decoration. If exhibition spikes are required, special attention as to cultivation, &c., is necessary, and a few hints on this subject may prove useful. Choose a good open situation, and prepare the land at once by trenching it to the depth of 2 feet, mixing a liberal quantity of old hot-bed or well rotten cow-manure with the soil. In March plant the bulbs 3 inches deep and 1 foot apart. When the plants are about 1 foot high, spread a good layer of half-rotten manure over the ground, which will promote strong, vigorous growth, and put a neat stake to each, and tie as they advance in growth, which will prevent the spikes being damaged by the wind. As soon as the flower-buds appear a dose of manure-water applied to each plant about once a week will work wonders in developing the size and colour of the blooms. I shall be pleased to give a list of the best show varieties at some future time. —E. J. P.

5020.—**Plants for carpet bedding.**—*Herniaria glabra* is one of the best of low-growing plants for this purpose. *Sedum glaucum*, *S. Lydium*, and *S. acre elegans* are also desirable subjects to plant, and so are the different varieties of Saxifrage, like *Camposi*, *ceratophylla*, *hymnoides*, and *unscoides*. All these are not only pleasing in their growth, but when in flower they lend additional attraction to the border. *Veronica prostrata* (with deep-blue flowers), *V. incana* (silvery foliage), and *V. repens*. This latter does not grow more than 2 inches high, and is smothered with tiny white blossoms in April and May. *Empyrum radicans variegata* is really a hardy shrub, but it is of a trailing habit, that it is well adapted for such a purpose as the one now under consideration. Its silvery leaves are attractive during the dull days of winter. *Armeria rubra* and other kinds of Thrift may be employed easily in the same way, as all are low and dense-growing subjects. Where Gentians succeed, nothing could be better than masses of either *canalis* or *verna*; their lovely deep-blue flowers are always attractive.—S. P.

Judging from your query, I suppose the ordinary carpet holders are not intended, as "London Pride" would scarcely come under this definition. There is a wide selection of things, and you may employ some annuals as *Mignonette*, which is delightful with Roses. The Blue Apennine Windflower is very charming at the foot of trees, *Arabis albidia* is a sheet of white early in the spring, and would do well for the front of the border, also *Aubrietias* in variety, the dwarfed *Campanulas*, as the white *C. puncta* and *C. fragilis*, Pinks, Carnations, if these are not too tall, *Gypsophila paniculata*, Creeping Jenny, and the yellow-leaved variety, *Mimulus* in variety, if the position is

not too dry and hot, dwarf Phloxes, masses of flower of varied colour according to the variety, but all are good, except those of a purplish-magenta tone, the white-flowered *Pyrethrum Tchihatchowi*, Saxifrages in great variety, particularly the Mossy Saxifrage (*S. hypnoides*), *Sedums* in variety (*S. Ewersi*, *S. Sieboldi*), and *Stonecrops*, *Sempervivums*, *Thymus lanuginosus*, *Veronica saxatilis*, Tufted *Panicum*, *Alyssum saxatile*, which has a brilliant mass of yellow flowers in spring, the Thrifts (*Armeria vulgaris*, and the taller growing *A. cephalotes*), *Ballicolium verum*, which is very pretty used as a carpet plant to beds of deciduous shrubs, the flowers being produced in spring, *Crocuses*, *Winter Aconite*, the variegated *Dactylis*, *Krythrionium*, better known as Dog's-tooth Violets, dwarf Iris, and Scillas. You may get many pleasing contrasts of colour with dwarf plants, the golden-leaved *Creeping Jenny* being very charming when covering the ground, and such things as *Fuchsias* used to break the surface.—C. T.

Mossy lawns.—These are almost always caused by poorness of soil or wet, either from soakage or because the ground is naturally of a close and retentive nature. Unless this be remedied there is no permanent cure for the mossy patches so disfiguring to a lawn. The drainage must be attended to, but as no Moss will grow upon good soil, the judicious use of manure is very important. Farmyard manures are apt to produce too strong a growth, even when a good selection of lawn Grass-seed has been used. I prefer soot and wood-ashes, also the sweepings of roads. Before applying these, rake off as much of the Moss as you can. In the early spring give the lawn a good dredging with rough boughs, and sow a little seed on the bare and thin places. This will usually ensure a fine soft Grass, and if a little of the small white Dutch Clover be added a great improvement will be seen.—P. U.

ORNITHOGALUM NUTANS.

In reply to "J. G.," "H. R.," and others, this is a very popular species, and one of the most easily-managed of all the *Ornithogalums*. In



Drooping Star of Bethlehem (*O. nutans*).

borders amongst other bulbs it may easily become a nuisance on account of the freedom with which its innumerable bulbils are forced. In a semi-wild or uncultivated spot it is a capital subject for groundwork; it requires no attention whatever, and flowers freely all through April and May. The blossoms (see illustration) are borne in racemes, drooping, green on the outside, whitish-green inside, peculiarly attractive. *O. Boucheanum* is a more form of the above with larger flowers. *O. nutans* is a native of Southern Europe. G.

5020.—**A bed of Lily of the Valley, &c.**—The Lily of the Valley may be grown well in a half-shady spot which is moist. A border overrun with roots would not do at all, as the plants would soon be starved in such a place. I should say that in the position mentioned the plants would thrive to perfection, and in a south aspect one gets earlier flowers. The great thing is to have a well-manured loamy soil, and kept moist during the growing season. It is really too late to plant now, the early autumn being the best time for the work—that is, when the leafage has died down. Too often beds are left until they become so crowded up with plants that they get weakly, and the flowers few and far between. Carnations should have a good loamy soil, with which is mixed plenty of well-rotted manure. Kibarbonate compounds are not in the least necessary. It is too late to plant now, and the layers must be kept over the winter in pots. Put them out in the month of March. As regards planting new beds, be careful to see that the soil is not infested with wireworm. This pest is very destructive. During the following summer after planting keep the Carnations well supplied with water.—C. T.

— This is a very simple matter, and that is necessary being to dig the ground over well and add a fair dressing of either good leaf-mould or well-decayed manure. The plants enjoy some shelter and a little shade, but not too heavy. Beds for Carnations should also be well dug, if possible to the depth of two spades, working in a moderate quantity of old flaky hot-bed manure and some burnt earth; old mortar-rubbish and a little snot are also very beneficial. If the soil is naturally heavy and damp put plenty of broken bricks, rough ballast, or the like in the bottom of the trench, and, if necessary, a drain also, and in this case plenty of sand may also be added with advantage. In other words, good sandy loam and leaf-mould, with some burnt material and mortar-rubbish, suits these plants as well as or better than anything else, either in the open ground or in pots. Always make the soil firm.—B. C. R.

4945.—**A garden in Surrey.**—Having had to deal with a similar soil to this one, I give my experience. Ten years ago I took charge of this place, which at that time was mostly Common or Heath land, the soil being a dirty white sand to the depth of from 1 foot to 2 feet, then black or yellow rock, commonly called iron-rust about here, under which is a very good yellow subsoil (sometimes gravel) to the depth of from 6 feet to 10 feet, this yellow soil reaching to the depth of 30 feet, or more, according to elevation of hills; then we reach a running sand containing water. I will take first the surface-sand. Nothing will grow in it but Scotch Fir, Birch, and Heather, it being so very poor; it will hold no moisture, and in hot, sunny weather it gets so hot that I have seen plants burnt black, and as to water, I might use the old proverb of pouring it on a duck's back. Next I take the iron-rust. It is generally about 1 foot thick, and just like a bed of concrete, and from 1 foot to 4 feet under the surface, and no moisture can either rise or percolate through it in any way, nor yet the roots of trees, it being so hard that it requires a pick to break it, especially if mixed with gravel, or overlying gravel. Occasionally we find some that can be broken with a fork when overlying the yellow subsoil, but that is not often. Now I come to the yellow sandy subsoil which is very good when brought to the top, and will grow anything; but I must here say that the rust must be thoroughly broken, and if exposed to the weather will fall almost like lime, and when mixed with the yellow subsoil forms very good soil for a garden, and when cultivated in the usual way will grow very good fruit, flowers, and vegetables, but must have plenty of good manure. I may say I have about thirty acres, some trenched from 2 feet to 6 feet deep, and ploughed from 2 feet to 3 feet, and with plenty of manure I have had very good crops of all kinds, and Conifers and flowering shrubs grow amazingly, so that if "M. D." wishes to have a good garden I should advise him to have his ground trenched two good spits deep below the rust; but he must see that the rust is thoroughly broken up, as I am sorry to say I have had a lot of trouble through some of the work being shirked, especially where the rust was very hard, and it not well broken. I don't

back to its natural state. I should advise "M. D." to take up his fruit-trees and replant them in trenched ground. The border should be trenched the same way and well manured. I have some hundreds of yards of borders done in the same way, which are giving every satisfaction, some from 2 yards to 10 yards wide, planted with herbaceous plants of almost all kinds.—Fox-HILLS.

NOTES ON BEGONIAS.

These charming flowers have been on the whole somewhat disappointing during the past season, both out-of-doors and, to some extent, inside also. The extreme and continued drought and heat were, in fact, too much for the plants, which dislike extremes of all kinds, and never thrive so well as in a temperate climate, and under conditions moderate in all respects. If there is one thing of which they can scarcely have too much—at any rate, when growing in the open ground—it is moisture. I shall never forget how they thrive, even in my stiff, clayey soil, during the mild, but wet and stormy, autumn of 1891. I have never seen them grow and bloom as they did then before or since. No amount of artificial venting appears to have the same effect upon the growth as the natural rain, but unless the plants, and seedlings of the same year in particular, are frequently and copiously watered for some time after being planted out, and until thoroughly established, they sustain a severe check if the weather proves dry, and frequently fail altogether, or refuse to make satisfactory progress afterwards. But even with the greatest care seedlings planted out in June made very little progress until the dull and showery weather we had in July set in. This gave them a start, though some of my beds were not planted till about this time, the seedlings not having grown quite so fast as usual, owing to the heat and drought; but these did, in the end, nearly or quite as well as those planted earlier. The intense heat in August again proved very trying to the plants, and on one or two of the hottest days (the 17th and 18th, I think) plants in beds fully exposed to the sun were literally scorched by the burning rays of the sun, not only the blooms, but many of the leaves being shrivelled. However, I took the precaution of shading all the best beds with thin canvas, and so saved most of them. The rains that set in about the middle of September again refreshed and helped the plants considerably, but the weather at the time was too cold, and on the 8th of the month a sudden and very heavy hailstorm cut the plants about half, and chilled them as well, as we had literally to scrape the hailstones from round and between the plants in pain. About this time, too, we had several frosts sharp enough to touch the blooms and tops of the plants where unprotected, but by covering the beds roughly with a light framework of laths and tiling, &c., more than a very slight damage was avoided. This is a point that seems to call for more particular notice. It very frequently occurs that some time in the early part of September we get one or more nights sufficiently frosty to injure such tender subjects as these, while the weather afterwards, often for several weeks, is so mild that, if protected in some way during the critical period, they then remain in beauty for some time longer. Such was the case here in Sussex, at least, this year, and by simply protecting the beds the plants were kept on blooming beautifully until nearly the end of October, the frost that finally settled them occurring on the night of the 30th of that month. My Begonias, indeed, were far finer and gayer during October than at any other period of the year, one bed in particular, filled with plants raised from quite small tubers no larger than Peas, kept over from the previous season, being quite a sight, and many of the blossoms 5 inches to 6 inches in diameter.

UNDER GLASS, too, the heat was altogether too much for these Begonias. Here, on the Wealden clays, the heat is as intense in the summer as the cold is in winter, and the thermometer on several occasions rose well above 90 degs. in the shade. This so distressed the indoor plants that at last I turned most of them outside, standing them on slabs in the shade of trees, where they did not require nearly so much water, and gained strength considerably. Under such circumstances the only way to keep these plants in health under glass is to shade them

heavily (from actual sun only), and admit air as freely as possible by night as well as by day, few would credit how greatly night air strengthens these and nearly all plants in very hot weather. Water must be abundantly supplied, and the plants be syringed overhead at least twice daily. Just after the hottest week in August I was going through a nursery where large quantities of Begonias are grown, and found scarcely one in a hundred carrying any bloom to speak of, both indoors and outside, but in the houses they had evidently been insufficiently shaded and apparently overwatered as well. At least at one of the metropolitan exhibitions held in August there was also not a single Begonia staged, a fact which tells its own tale. The system of planting out the Tuberos Begonias under glass is beginning to be adopted by some growers. Years ago I saw them thus put out in low pits or frames, and have indeed grown them in this way myself, but quite recently I saw several hundreds planted out in the side-beds of the ordinary span-roofed houses at Swanley, and the plants were doing well. In this way they grow faster and stronger than in pots, and do not require half the care and labour in watering. In the case of soil, there is nothing better, if to equal, good friable or fibrous loam, whether the plants are grown in pots or planted out. Mix it with half, or a third, the quantity of good flaky leaf-mould (not too much decayed), and a good dash of slimp or course sand, and they can scarcely fail to thrive, and will make shorter and stockier plants than those grown in peat or any material of a lighter description, while the flowers will be large and of great substance. The choice new erect-flowered doubles, with a dwarf habit, do not grow as freely as the older and commoner kinds, and these may have a third or so of peat added also, especially if raised from cuttings instead of seed, but for the ordinary run of seedlings, both single and double, I find them do better in a sound loamy compost than any other, and at any rate, when putting the plants into the flowering sizes, the soil should be made quite firm. For drainage I use either Irish cod-cinders or nodules of ballast (burnt clay) with excellent results. Those who can obtain spent Hops I can strongly advise to try this material for Begonias, whether planted out or in pots. Let them lie for two or three months, turning the heap over occasionally to sweeten them, and to two parts of loam add one of the Hops (well pressed down), for pot plants, or dig them freely into the ground before planting. They also form a splendid mulching material. Lastly, the erect-flowered kinds, both single and double, should be cultivated almost to the exclusion of those with drooping blossoms, which, except for baskets, &c., are poor, ineffective things compared with the others. I generally save my own seed, taking it from erect-flowered plants only, and could not help noticing that in the bed of last year's seedlings referred to scarcely a pendulous dower could be found—all stood up well on stout stalks, and looked you straight in the face as if not at all ashamed of themselves. The same remarks apply with equal force to the double-flowered kinds—one that stands well up and looks skywards is worth half-a-dozen drooping blossoms to my mind, and I wonder that more importance is not attached to this valuable trait. Of course the large deep, many-petalled or many-centred double flowers cannot possibly stand upright—no stalk could carry them thus—but we are gradually getting a race of small, single-centred flowers with a few broad and well-rounded petals only, and with the proper habit of plant these can be held as erect as the singles, while they possess the important advantage of lasting very much longer, and blooming almost as continuously. B. C. R.

5010.—**Treatment of Petunias.**—Young cuttings are much the best, and to obtain young shoots the plants must be started back now or earlier.—E. H.

Injury to Beech-trees.—You may possibly remember that I wrote to you about widespread injury to Beech-trees in this neighbourhood. I found it was due to the larvae of a small beetle, which I have watched from its early stages to the perfect insect. I have learned that its name is *Orthocentrus* sp., a weevil. It has done much mischief, not, I apprehend, in an economic point of view, but to the lovers of the country, the Beeches soon losing their beauty and remaining so for the rest of the year.—R. L.

THE KITCHEN GARDEN.

NOTES ON TURNIPS.

THERE are now several more or less distinct varieties of Turnips in the different sections. Take the Snowball (see Fig. 1) type, of which we have numbers of supposed good selections. Quality in many Turnips is more a matter of culture than anything else, the nature of the soil making all the difference. Of course age in

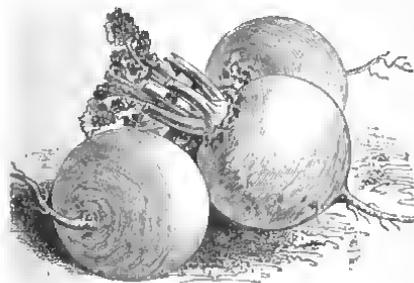


Fig. 1.—Turnip "Snowball."

the roots often makes a difference, but not to such an extent as soil. The Turnip delights in what we may term a calcareous soil, but this must not be poor, or the roots will fail to make much headway. The best quality Turnips I ever had were in a garden near the sea. The soil was rather deep and on the limestone formation. Where Turnips do not succeed, a dressing of kainit should be given, a little salt also being applied, say half an ounce to the square yard. It was after noting what beneficial effects the sea spray had upon the Turnip crop that I was led to apply the salt. Burnt soil is also admirably adapted for the Turnip crop, it being a usual thing for farmers to "soil-burn" for this crop, small fires being kept going at intervals over the piece intended for the crop, the ashes being afterwards distributed over the land. Old garden soils are often unsuitable for the growth of Turnips, and in these cases a dressing of fresh slaked lime would prove of marked benefit, and also help to destroy the disease termed smut, or finger-and-too. These soils are generally overrich in nitrogenous matter, and deficient in those mineral elements needed for the crop. Commencing with the

EARLY VARIETIES, I find the Early Milan is the best. This variety I consider the most useful of what are known as the strap-leaved. It is undoubtedly the most useful for early sowing in the open air, and also for forcing under glass. The Red American Stone Strap-leaf (Fig. 2) forms a very good succession. The Early Munich is not worth growing. Certainly it was useful, as it was introduced before the Early Milan, and was more to be depended upon than the selections of early strap-leaved that used to be recommended for this purpose. Two or three years since I got together what supposed early varieties I could, both the English and the Paris market forms, but I found for open-air culture in this country they could be very well dispensed with in favour of the Early Milan. If desired after this, the Early Red American Stone may be sown, but I prefer a good selection of the Mousetail, the selections of Snowball coming under this head. So much are the Snowball types liked by many people, that no other is grown. If I was bound down to three varieties, it would be the Snowball, Early Milan, and Orange Jelly, selections of the last now being known as the Golden Ball. This latter is a very hardy Turnip, keeping well on to the early spring in the open ground, and coming into use after the Snowballs are all used up. Some people profess to have a liking for yellow-fleshed Turnips, but I do not think they will ever become popular. In the north of England and Scotland they appear to have a greater hold upon the public, but for table use their colour is against them, however good they may be for flavouring. A good early yellow-fleshed variety will be found in Petrowski. Veitch's Red Globe is a well-known red-topped Turnip, good alike for summer and most excellent for winter use. ~~What is termed the White-stone section. This is~~

flatter in form than the Mousetails and with a coarser tap-root. I do not care for it for summer use, but it is good for winter. It is largely grown in Essex for the supply of the London markets, and is a good form for sowing late for the supply of Turnip-tops in the early spring. The green-top Stone is also liked by some people for winter, but it is more favoured by cottagers. Last, but not least, is Chirk Castle Black-stone (Fig. 3). This is certainly not a very inviting-looking variety, but has a remarkably white flesh and is very hardy, being, in fact, the hardiest of all, although I must say that I have found Orange Jelly or Golden Ball equally hardy. When not too large, any amount of frost which we are likely to experience never harms them. As a precaution, however, a little soil drawn over them removes all risk, as the quality is better when left in the ground. A.

KITCHEN GARDEN WORK.

AFTER one of the longest summers on record, we have now fairly settled down to our winter's work, and at the commencement a good many crops need special care, for the exceptional heat of summer, followed by mild autumnal days, caused a luxuriant growth in all kinds of green vegetables, and in place of a scarcity there is absolutely an overabundance of green crops, and, above all, they are too gross to withstand very severe weather, if it should set in suddenly. The following crops need attention at once—

ASPARAGUS-BEDS should have the old tops cut off, the surface soil stirred, and lightly pricked up with a fork, and a dressing of seaweed or manure spread on the surface and left until spring.

BESTRONG, if not already done, should be lifted very carefully and placed in a cool shed out of the reach of frost.

BROCCOLI, when overluxuriant, will be greatly benefited by digging out the soil on the north side, then press the plant down, and pack the soil from the next plant right over the stem, as this is the most vulnerable part.

CABBAGES that were planted out early have grown very rapidly, and should severe weather follow may suffer considerably. If good plants are available, a successional hatch should be put out, as they will come very acceptable if the first lot runs prematurely to seed or suffer from frost.

CARROTS.—If any seed was sown at mid-summer, the roots will now be in excellent condition for use, and they are very much more tender than those sown early in spring, and if they can be kept in the soil by means of litter

up, and those fit for use should have some litter put over the tops, if severe frost sets in, not only as a protection, but to enable the lifting to be done in spells of sharp frost.

LETTUCE, if fit for use, must have protection of some kind from severe frost, or lifted and replanted in frames. A good supply of plants should be lifted and replanted under hand-glasses or in frames, as they suffer severely when overluxuriant as they are at present.

PARSLEY, which is in daily demand, should

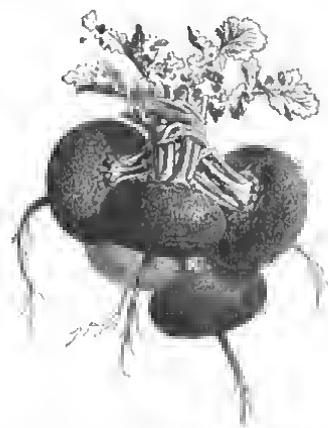


Fig. 3.—Turnip "Chirk Castle Black-stone."

have some thatched bundles prepared for its protection, so that if snow falls heavily it may be got at readily. A few roots in boxes are very useful.

TURNIPS of white kinds are now abundant. A good quantity should be lifted and laid in trenches, covering the roots right over with soil, leaving the tops out, so that they can be readily got at when needed.

SEAKALE AND RHUBARB-ROOTS lifted now and planted in any warm, dark place will yield fine blanched dishes in January, when anything in the way of forced vegetables is much appreciated.

SMALL SALADS, such as Mustard and Cress, should be sown in boxes and set in the greenhouse. It is always acceptable, and remains fit for use a long time at this period of the year.

J. GROOM, Gosport.



Fig. 2.—Turnip "Red American Stone Strap-leaf."

shaken over them when severe frost sets in, they will be found a very much nicer vegetable than those stored in sand.

CALIFLOWERS of the Autumn Giant and Early London kinds planted after Early Potatoes where cleared off are now in splendid condition, and require care in protecting from sudden frost; break the leaves down closely over the heads, and when quite fit to cut lift with balls of earth, and place in cold frames or sheds until required for use. CELERY.—Late crops should be fully earthen

Winter Herbs.—Mint, Tarragon, and Parsley are much better in many cases when they can be used green or unblanch, and as it is a very simple matter to have them in this state during the winter months I supply a few hints upon the method to be pursued. If you have a heated pit or frame, or even a cold one in a nice sheltered position, a few roots of Mint and Tarragon may be lifted and inserted. I prefer a shallow box of light soil, as they grow more freely, and can be easily lifted out when spring produces plenty of the same out-of-doors. Or they may be stood on some out-of-the-way shelf in the greenhouse, and, provided they are not too freely supplied with water until growth commences, a number of very acceptable pickings may be obtained during winter months. Parsley, Sage, and Thyme are better for a little protection during severe weather.—F. U.

5008.—Celery for show.—Sow the seeds in heat in March. Prick off in rich soil in frame 4 inches apart as soon as large enough. A layer of rotten manure 3 inches thick is usually placed in the bottom, and then 3 inches of rich soil on the top of the manure pressed down with a board. The plants must always be liberally supplied with water. A little weak liquid-manure may be given when the plants are growing freely to get the plants as strong and robust as possible. From the first everything must be done to have the plants as strong as possible. A check from drought or too much heat would be ruinous. As soon as the plants are large enough to plant in the trenches get them out at once. The manure must be rich, but not fresh or rank, and it should be well blended with the soil in the bottom of the trench. I have seen very good results when the

manure has been worked into compost with old rotten turf and some decayed vegetable matter; the roots take to it better. Plant in single rows from 10 inches to 12 inches apart. As the plants progress all the small sucker-like growths which sometimes form on the sides of the plants should be removed, and the plants must never be permitted to get dry. When the growth is well advanced give liquid manure twice a week, not in dribbles, but a thorough soak. About six weeks before the Celery is required wrap some paper round the bottom, say about 5 inches or 6 inches up, rather loosely. This will hold the plants up a little and commence the blanching. In another fortnight or so add more paper higher up, drawing the leaves a little closer in, but still leave room enough for growth. If several thicknesses of paper are used, the Celery will not require earthing up. The heads will turn out white and free from bluish. As regards varieties, good culture and regular attention in watering is more important than any particular variety. Every good seed house supplies good Celery with which prizes may be won if well grown. Sutton's Sultan Prize Pink, Carter's Incomparable Crimson, Thurber's Incomparable White are all good. A good strain of the Manchester Prize and Grove's White are also suitable.—E. H.

5025.—**Growing early Rhubarb.**—Cover the rhubarb with tubs or pots, and surround them with leaves enough to ferment, and the warmth from the fermenting leaves will start the Rhubarb into early growth.—E. H.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of GARDENING, 37, Southwark Street, London, E. Letters in business should be sent to the Publisher. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent in press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers.—Which, with the exception of such as cannot be classified, will be found in their different departments should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, rules, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appeared.

- 5051.—**Laurels.**—Will someone please tell me if I can plant back the tops of Laurels now?—CONSTANT READER.
- 5052.—**Pilea alba latifolia.**—Will someone kindly give me a few hints as to the treatment of this plant?—L. L.
- 5053.—**Re-planting Seakale.**—Is this the best time to re-plant Seakale, and how should it be done? Please give particulars of soil to be used, &c.—M. H. F.
- 5054.—**Plumbago capsensis.**—If I put a two-year-old plant of Plumbago capsensis in a pot two sizes larger in spring will it stop it from flowering?—P. M. B.
- 5055.—**Dracaena in a room.**—Do Dracaenas (kept in a room) require much water at this time of the year? Any hints on the subject will be acceptable.—M. H. F.
- 5056.—**Names of Chrysanthemums.**—I shall be obliged if anyone will inform me if "Source d'Or" and "Bonne d'Or" are one and the same Chrysanthemum?—L. M. T. K.
- 5057.—**Best Carnations.**—I shall be greatly obliged if someone will give me a list of the newest and best Carnations with colours? I want to get a good collection.—C. N. B.
- 5058.—**Early Potatoes and Brussels Sprouts.**—Will someone kindly inform me the proper distance to plant early Potatoes apart in the rows, so that Brussels sprouts may go between?—S. W. P.
- 5059.—**Pruning a Wistaria.**—Will someone please tell me if this is the time to prune a Wistaria sinensis on a dwelling-house? Should all the long young shoots be cut back close or not?—A. CONSTANT READER.
- 5060.—**Treatment of Darlingtonia californica.**—I wish to grow this Darlingtonia in a cold frame. Will someone kindly give me full instructions for doing so? Locality, south coast.—P. L. H. F.
- 5061.—**Pampas Grass.**—I have a large Pampas Grass. I am told to cut it down close to the ground. Hitherto I have partly done this every year. Will someone kindly tell me which is right?—A. CONSTANT READER.
- 5062.—**Propagating greenhouse plants.**—Will someone kindly say what is the proper time of year for taking cuttings of the following: Antirrhinum, Fuchsia, Zonal and large-flowered Pelargoniums?—R. B. S.
- 5063.—**Aspidistra.**—I find the leaves of my Aspidistra variegata are always splitting and turning yellow. What is the cause, and what should I do to prevent it? Any information on the subject will be acceptable.—M. H. F.

- 5034.—**Tea Roses for button-holes.**—I should be pleased if someone would kindly name twelve of the best thorn button-hole Tea Roses for a cold house? Aspect, west; locality, smoky, Bolton, Lancashire.—AMATEUR ROSARIAN.
- 5035.—**Baking for button-hole Roses.**—Will some reader of GARDENING inform me of a good plant as a backing for button-hole Roses, which I would grow in a cold house? I have tried *Asilinum concinnum*, but failed.—AMATEUR ROSARIAN.
- 5036.—**A viney border.**—Will someone kindly advise me as to a long border which is in my viney? The Vines are planted outside. Would it do any harm to the Vines if I were to plant Tomatoes, or millise it for any other purpose?—G. F.
- 5037.—**Pruning dwarf Roses, &c.**—Would "J. C. C." or "P. C." oblige by telling me when is the best time to prune dwarf Roses in the ground, and also Tea Roses in an unheated greenhouse? Locality, Newton Abbott, Devon.—D. C.
- 5038.—**Rose-hips.**—I have some Rose-hips (wild) sent me to sow for stocks. Should I sow now or wait till spring? I have also some Hadford Colville alba and The Bride. I am anxious to increase. Which is my best way to proceed?—M. A. TURNER.
- 5039.—**Window plants in winter in London.**—Will someone kindly state how best to keep window plants in health in London during the winter, and the best plants to obtain for such a purpose?—Mrs. E. E. H., *Some-square, Chelsea, S. E.*
- 5040.—**Chrysanthemum cuttings.**—I have some strong, well-grown shoots from the ground in my Chrysanthemum-pots quite long enough for cuttings. Should I do wisely to make cuttings now or wait two months?—E. FURZE, *Chauntry, Norwich.*
- 5041.—**Using a lawn-mower on tennis-courts.**—Will anyone have the goodness to tell how frequently the lawn-mower ought to be used for tennis-courts, &c., and the roller also, and how long their use should be continued after the summer?—R. L. A.
- 5042.—**Diebudding Chrysanthemum.**—In diebudding Chrysanthemum is it proper to remove the three lower roots, the centre one, or to leave those and take out the centre one, in order to get fine flowers? Can I get fairly large flowers on dwarf plants?—G. R.
- 5043.—**Rose Baroness Rothschild.**—I have a rooted cutting of Rose Baroness Rothschild about 6 inches in length. Can I grow it as a standard? I have rubbed off all the lower limbs, and there is a little shoot near the top with several buds. Can I train that into a "head"?—C. B.
- 5044.—**Seeds of Clematis Jackmanii, &c.**—Would "J. C. C." or "B. C. R." or someone else kindly say how I am to sow the above seeds now ripe? Also, the seeds of the Star, or sweet-scented Clematis, that flowers in autumn? Also, Apple and Pear seeds?—S. B. S., *Dunelm.*
- 5045.—**Ornium ornatum.**—Will someone kindly inform me how this bulb should be treated during the winter? I have a fine bulb which I imported in the spring. It has grown very slowly, and has not bloomed. Ought I to keep it green, or let it dry and re-plant in the spring?—C. R. A.
- 5046.—**An Indian vegetable.**—Will someone kindly tell me the correct name of a vegetable known in India as "Lady's Finger"? Also, how to grow it in this country? The seed is green, and the size of a small Pea. I shall be pleased to send anyone a few seeds to try. Address with editor.—R. N.
- 5047.—**Pruning a pot Rose, &c.**—I have in a cold greenhouse a pot Rose, and do not know how to prune it, and I see mentioned in GARDENING of November 24th that pot Roses ought to be pruned. I have also got among the roots two *Marshall Niel* Rose in pots. Ought they also to be pruned now?—CONSTANT READER.
- 5048.—**Chrysanthemum suckers.**—Would not the rooted suckers that come up at the bottom of Chrysanthemums be quite as useful to make good plants next year if they were taken up and planted with as much soil as possible, instead of going through the troublesome business of taking cuttings from them?—C. P.
- 5049.—**Trees, &c., for a Derbyshire garden.**—I am about to remove to a new house in Derbyshire, which is 1,000 feet above the sea, and should be glad to know what trees, shrubs, and plants would be likely to do well, and make the garden look bright, as I do not intend to heat out much? The winters are long.—AMATEUR.
- 5050.—**Treatment of a Schubertia.**—Will anyone kindly tell me how to treat a *Schubertia* now? It is not rest all winter, and in a dry state. Should I lose all its leaves, and what is the best soil to grow it in? There is only one pip opens on every truss at a time. Is this normal, or should the truss all open before gathering?—L. C.
- 5051.—**Unhealthy Poinsettias.**—Will anyone tell me what is the matter with my Poinsettias? The leaves are continually shriveling up, and they do not grow in the least. They are in a house with *Coleus* and *Irvingia*, which are doing very well. Ought they to be syringed daily now, as I understand they should be in summer?—AMATEUR.
- 5052.—**Making a window-box, &c.**—I am anxious to have a window-box made. What depth should it be, and ought there to be any holes in the bottom for drainage? I should be much obliged for any hints as to the soil to use, and also the best plants to make it look gay from April to September? The window has a west aspect.—Fox.
- 5053.—**Rose in a greenhouse.**—I have a Rose (*Reine Marie Henriette*) which has been especially trained for the roof of my greenhouse, having a stem of 10 feet or 12 feet long with small 1-inch side-shoots, which I have re-plant in about a 6-inch pot. Will this require any more than the ends of the main stem and shoots removing in spring?—P. M. B.
- 5054.—**Pot-Vines.**—I have three pot-Vines raised from eyes put in last January. They have each a rod of about 3 feet long. I want to fruit them next year. Should these rods be removed, or to go what length should they be cut back to? A few hints as to obtain a few good bunches would be very acceptable?—L. M. T. K.

- 5055.—**Name of a Lily.**—Will anyone kindly tell me the name of a beautiful Lily that I saw growing in gardens last summer at Conston? It was not unlike auratum, but had crimson where that has gold. I was told that in dull summers it did not flower in time to be safe from frost; but perhaps it would under glass. The plants were over 3 feet in height.—C. B.
- 5056.—**Fuchsia in a greenhouse.**—I have just purchased a *Fuchsia* in a 6-inch pot, the roots of which are just coming through the bottom of the pot. If anyone can give me any hints as to the best way to grow it, would it stop it flowering if I put it in a pot one size larger in spring? It has about two shoots coming out of the main stem, which is hard wood, and 8 feet high?—P. M. B.
- 5057.—**"Paris green" and Pear-trees.**—How should "Paris green" be used on pyramid Pear-trees to protect them from the reappearance next spring of grubs and caterpillars, which, for the last few years, in spite of frequent hand-picking, have very much injured the crops of fruit. Should the "Paris green" be applied now, whilst the trees are in a dormant state, and if so, in what proportions?—E. B.
- 5058.—**A plague of sparrows.**—I am swarmed with Sparrows through keeping poultry, and being anxious to destroy them in accordance with the law, if anyone will anyone of your readers assist me in saying how I can trap or destroy them? I cannot shoot, being a joining of a public road, and do not like to poison on account of a favourite cat.—J. T.
- 5059.—**A small greenhouse.**—I am about to erect a small conservatory at the back of my house, with an entrance to it from the drawing-room on the ground floor. The house faces the south, and so we get little or no sun in the back, where the conservatory will be. Will someone kindly inform me what plants would be most suitable, including a couple of creepers, and would any kind of Rose thrive? I suppose Ferns would do best of all, and may any that I wish to entail the expense as much as possible?—ALFREDAL.
- 5060.—**Rats in a garden.**—Will anyone kindly tell me how to get rid of rats in a garden? I am very much troubled with these pests, and now, when there is little food to be got, they burrow where the bulbs are, and either eat them or leave them on the top of the soil. I have set-traps, but it does not seem to be of any use. The traps lately have been set with *Sinoflower* seeds, which I heard rats are fond of, but I have not caught one. I ought to say our garden adjoins a wood, and the rats come from there.—M. L. WILLIAMS.
- 5061.—**Lilium auratum, &c.**—Are home-grown *Lilium auratum* bulbs to be preferred to imported ones? I am at a garden at a higher price, but I have always found that the bulbs decrease in size year by year. I intend buying some auratum and *Sinoflower* for planting out-of-doors in borders. Is it safe to plant at once with the bulb in the more or less soft, fatty state as imported? I have generally potted them and kept them pretty dry for some time, and then cut them early in the year. I have also bought some *Lilium auratum* out-of-doors? A reply will be much obliged.—ALFREDAL.
- 5062.—**Pot-Roses.**—My pot-Roses, of such kinds as *Marshall Niel*, *Duke and Duchess of Edinburgh*, *The Belle*, *Etoile de Lyon*, *La France*, &c., in a cold tank in winter, unless greenhouse, look more like March than November. They are in full leaf, all new foliage, and one or two have buds on. What shall I do with them? I have cut them, but not very much, since the fresh foliage came in. Some are small plants that would surely bear more cutting. The *Marshall Niel* does not look quite so well as the rest. I should like to train it, but it grows in a sort of straggling bush, and not with long shoots.—C. B.
- 5063.—**Seaweed as a manure in the vegetable garden.**—I should feel very much obliged by your favouring me with a few hints on the above subject. My residence is on the sea-coast, so that I have every facility of obtaining the article in question. Hitherto I have never applied it, except as a thick covering in winter to the *Asparagus* and *Rhubarb*-beds; but my present gardener is desirous of using it as a dug-in manure to other crops, and I am anxious to know to what crops (if any) generally, or particularly, it would be suitable. If any member of our garden is a good heavy soil.—R. L. LEONARD SHARROTH.
- 5064.—**Soil for Roses, &c.**—I should be much obliged if "J. C. C." or "B. C. R." or other readers to whom I am already much indebted, would advise me on the following point? My soil is about 25 feet deep, rather light, with gravelly bottom, so that it soon drives up, as garden runs north and south. In the western border I have twenty-three standards, eight of which are Tea and also a few dwarfs and H. P.'s (planted Jan. 4th). I used liquid manure (horse-droppings and soot) throughout the season, and at beginning of winter with mulch with Moss, standards, rest *Doomed* fairly well. Three weeks ago I planted some *Rij* dwarfs on seedling *Brierwood* (several potted, protected and mulched. Thinking to make the soil heavier last week I had two loads of stiff clay spread on the bed about 3 inches deep on the manure, and intend to let it lie there till next March, when I must be able to dig it in with manure. Will they kindly tell me whether I am doing right, and if not, what I had better do?—ALFREDAL.
- 5065.—**Hardy Lily bed.**—I am laying out a new border, aspect, south, near a 6-foot wall, will good gravelly loam, appropriate soil and damp, but garden very sheltered and sunny. I want to plant a bed of hardy Lilies, which I wish to be permanent, and can make the soil suitable with peat and rotten cow-manure; but I should like a succession of bloom throughout the summer and autumn. Would it answer to fill the bed on top of the Lily-beds with *Anemones* or *Ranunculus*, or, if not, are there any other plants which can be grown so close to the Lily-beds as to cover the bare ground, and flower when they are not in bloom, and protect their young shoots from early autumn frosts, and protect them from the Lilies? How many bulbs should be planted together of each kind? Some Lilies are expensive? Would single specimens of the rarer kinds be sufficient? I shall be thankful for any information, and also for a list of the best hardy Lilies to be obtained at a moderate cost. How far apart should Lilies be planted?

bulb from bulb, and how deep, and is horse-manure 6 inches or a foot below the bulbs injurious or beneficial? Is it best to grow Lilies in a bed by themselves or in clumps in a mixed herbaceous border?—LEICESTERSHIRE.

REPEATED QUERY.

5096.—Treatment of Cape bulbs.—I should be much obliged if J. C. C. (who kindly advised me as to treatment of Cape bulbs in spring) or anyone else who could tell me how to treat "Crinum asiaticum," which was supposed to be "aquaticum," and placed in a pond all summer? It flowered well and bore seed, which was planted in pots in a conservatory, and they have come up. Should the first spears be reported now to give them more space, and should the old plants be still left in water (they are now in a tank under glass) or allowed to dry?—TIN.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

5097.—Odontoglossums (C. Drinker).—Perhaps the following would suit you: D. Androsolanum equitatum, Coranense, Itali, hastulatum, luteo-purpureum, Melius, nebulosum, Ross majus, Roezli, Roezli album, Uro-Skinneri.—M. B.

5098.—Colognes cristata (George Elmer).—This should be kept mild and in fair heat, but you must be anxious not to keep it too wet, or you will stand the chance of losing the spikes entirely.—M. B.

5099.—Odontoglossum Harryanum.—H. Hardy sends me an excellent variety of this fine plant, but it appears to have the mirror-like falling of the species, and that is, the petals are very slip-slip-slip. You should put your hands between the petals and spread them out.—M. B.

5100.—Lapa-verias from seed (T. R.).—Sow the seed as soon as you can in well-drained pots or pans filled with sandy peat, lightly cover the seed with a little of the same soil, and place pans in shady part of rather warm greenhouse. Keep soil moist.

5101.—Worm-casts on lawns (N. T.).—Brush the casts off. You had better not kill the worms, but if you think to do so there is nothing better or safer than clear lime-water. A bushel of quicklime will do for 50 gallons of water. Stir it up and let it stand until the lime settles to the bottom, leaving the water quite clear. Use this clear water to water the lawn, and the worms will either come up to the surface in die or will die under ground.

NAMES OF PLANTS AND FRUITS.

Any communication respecting plants or fruits sent to this office should always accompany the parcel, which should be addressed to the Editor of Gardening Illustrated, 37, Southampton-street, Strand, London, W.C.

Names of plants.—J. Richmond: 1, Lilia aurum; 2, Corleya labialis; 3, Cypripedium laciniatum; 4, Cypripedium parviflorum;—E. H.—Molraia thurifera; 2, Nepenthes distachya; 3, Mircelopia Nova Zelandica.—C. James: 1, Sophronitis bilobata; 2, Odontoglossum Harryanum.—G. Cassell.—We cannot undertake to name Chrysantheum. Send them to a large grower.—M. H.—Adiantum tenerum; 2, Adiantum gracillimum; 3, Cichanthus ariztica.—C. M.—Odontoglossum oclatatum, pale variety.—S. H.—The flowers of Chrysantheum sent were crushed out of all recognition.—L. Agnew.—Chrysantheum "Jardin des Plantes."—Dobson: 1, Sparganium africanum; 2, Send fresher specimens; 3, Acaelia lepidantha.—J. F.—Adiantum concinnum latum.

Naming fruit.—Readers who desire our help in naming fruit must bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its determination. We can only undertake in some few varieties at a time, and these only when the above directions are observed. Unpaid parcels will be refused. Any communication respecting plants or fruits should always accompany the parcel, which should be addressed to the Editor of Gardening Illustrated, 37, Southampton-street, Strand, London, W.C.

Names of fruit.—O. S.—Pear Bonnet de Capitanum.—Mrs. Bell.—Small highly-colored Apple, apparently King of the Pippins. Other one, Five-crowned or Lemon Pippin. Please number specimens in future.—H. M.—Lign-nod, Wilsch.—Apples: Royal Russet; 2, New Hawthorned, Fens; 1, Althorpe Crassine; 2, Old Crassine.—S. B.—Apples: 1, Not recognised; 2, Warner's King; 3 and 4, Yorkshire Beauty; 4, Lemon Pippin; 4, Five-crowned Pippin; 7, Not recognised; 8 and 9, King of the Pippins; 10, Royal Russet; 11, Cox's Orange Pippin; 12 and 13, Rotten. These were all bad specimens; and in future please only send six kinds for naming.—Mr. H. S. Traver.—Apples too much shrivelled to name.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to furnish answers to queries unless they contain the name and address of sender.

Chesnut.—Apply to Messrs. Richard Smith & Co., High-street, Worcester.—Eggs.—Please repeat queries, and write each one on a separate piece of paper, and on one side of it only.—Constant Reader, Helensburgh.—Mr. B. C. Ravenscroft's address is Field Wood, near Crawley, Sussex.

POULTRY AND RABBITS.

5094.—An incubator.—Will anyone who has had practical experience of an incubator kindly give me full particulars as to cost, management, &c.?—Vern, Black-wear, Petersfield.

Drawings for "Gardening."—Readers who kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruits and vegetables for drawing. The drawings so made will be engraved in the best manner and will appear in the next issue of Gardening Illustrated.

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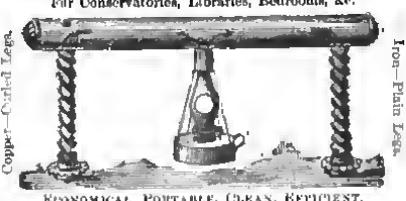
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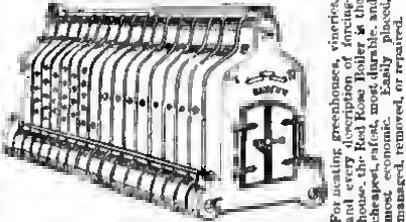
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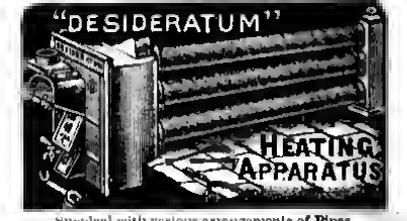
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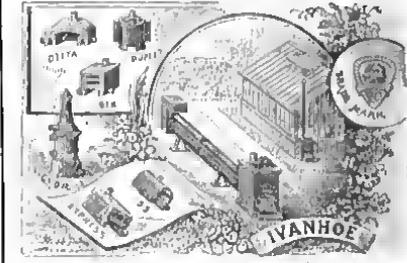
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GARDENING ILLUSTRATED.

No. 771.—VOL. XV.

Founded by W. Robinson, Author of "The English Flower Garden."

DECEMBER 16, 1893.

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CHRYSANTHEMUMS.

PREPARING FOR NEXT SEASON.

A DIFFERENCE of opinion exists amongst growers of Chrysanthemums for large blooms as to the proper time to insert the cuttings to obtain the best results. Many aver that the early part of March is soon enough, but seldom are these advocates of late propagation seen occupying a foremost position on the exhibition table. To cultivate Chrysanthemums really well it is absolutely necessary that the plants have a long season of steady, uninterrupted growth, and without the cuttings are inserted in good time it is not possible for the plants afterwards to have this. If the plants are struck late, and hurried on by leaps and bounds, as it were, to make up for lost time, how can the growth be matured? And it is from plants with mature stems that the finest blooms are obtained. Plants that are strong, yet soft and supple, may give blooms of great width, but they will lack the most essential points of quality—viz., depth and solidity. Without these two latter the blooms are not perfect. Especially is the incurved section affected in this way. Take, for instance, any member of the Queen of England family. Certainly this is the finest type of an incurved Chrysanthemum we have. Plants immature in their growth never can produce blooms of representative quality; more often than not the petals reflex instead of incurving toward the centre as they ought. In nine cases out of ten this is the result of not striking the cuttings early enough. From long experience and close observance of other people's practices I am convinced that there is no better time to take the cuttings than from the middle of December to the same time in January. The former month is preferable, but it so often happens that cuttings are not available just then. Where a cultivator provides his own stock, there is no reason why the cuttings should not be in readiness at the time stated, except, of course, in a few stubborn instances. If my instructions on page 516, relating to the preparation of cuttings, were carried out, the sucker-like growths from the base of the old roots will now be arriving at a state of fitness. Where too many growths have started remove those that are weakly, admitting more space for the others to become stocky. Attend well to cleansing them from aphides, both green and black, by a free distribution of Tobacco-powder. Provide the plants with abundance of air, and not too much water at the roots, or paleness of the leaves will be the result. The necessary number of 2½ inch pots can be got ready by washing them quite clean. I am not an advocate for the employment of dirty pots, not only from the appearance point of view, but from the cultural value of clean pots. When plants are placed in pots that are dirty inside the roots adhere firmly to the pot, and when the plant is turned out of the same, with a view to transferring it to a larger size, the roots are very often broken by their adhesion to the pot.

Anything like this is liable to give a check to the growth of the plant, which is bad for its ultimate success, but very much worse when in its infantile stage. If the pots and crocks are got ready, and the compost, loam, and leaf-mould placed under cover, so that when used it will be in a fit state to handle, the work of inserting the cuttings will be much facilitated. In the next issue of GARDENING I hope to give definite instructions as to the best method of propagating the plants, as in this phase of the subject I fear many amateur cultivators are lacking in knowledge. Without a fitting formulation is laid it is hardly possible to expect satisfactory results.

E. MOLYNEUX.

5070.—Chrysanthemum-cuttings.—It is wise, after this season, never to lose a strong cutting of a good variety. They are not much trouble to strike if the frost is kept from them, as they require no artificial heat. To obtain large blooms it is necessary to strike early; but for ordinary decorative purposes cuttings rooted in February will do very well, bearing in mind that strong, healthy cuttings should not be lost sight of.—E. H.

— If the plants are to be cultivated with a view to produce large exhibition blooms, the cuttings should be inserted any time during the present month, with a view to allowing ample time to make a steady growth. If a quantity of blooms are preferred to individual quality the first two weeks in January will be early enough for this purpose.—E. M.

— The cuttings should be put in now. I find they do well in a moist place, and the best position is the cool orchid-house. They are placed singly in small flower-pots. Plant each one singly and firmly in the fine sandy soil, and place some sheets of glass over them at first to prevent their flagging. A few of the incurved varieties may be put in early in January.—J. D. E.

5072.—Disbudding Chrysanthemums.—As a rule, it is proper to "take" the crown buds to obtain large flowers, but there is no rule without an exception, and with Chrysanthemums the rule may be frequently broken with advantage. This matter requires both study and experience. Good blooms of certain varieties can only be had from the crown-buds, and in these cases the side shoots should be pinched off and the crown-buds left, if they do not show too early, which sometimes they do. There is a certain best time for taking the bud, as it is termed (though it virtually means leaving the bud and taking away the side shoots), and if these come too early the bud is removed and one or perhaps two of the side shoots left, and the best terminal bud taken. On the other hand, there are a few varieties, including some of the Incurves, where it is better to pinch off the crown-buds and trust to a good terminal. Good flowers are and can be obtained from dwarf plants by two methods; first, by cutting down in May and taking up one or two shoots with one flower to each; and, secondly, by striking the leading shoots in August in a close frame where there is a little bottom-heat. By the last plan very dwarf plants may be obtained, but only one bud on each shoot should be left.—E. H.

— If large blooms are wished for, remove all buds but the central one on each shoot. These buds produce finer blooms than any of those

coming from the side of the shoots. Fairly large blooms can be had from plants made dwarf by cutting them down, but they lack solidity and depth as compared with those produced from plants more naturally grown. Varieties that are of a dwarf habit of growth, as, for instance, Mrs. Falconer-Jameson, will give excellent blooms from plants but 3 feet high. If exhibiting is the object of cultivating I advise that the plants be managed so as to each produce three stems and the same number of blooms.—E. M.

5078.—Chrysanthemum-suckers.—If the suckers can be taken up with a few roots attached to each towards the end of the month and put into small pots they will succeed quite as well as cuttings taken off in the orthodox manner. When the suckers push through the soil a few inches away from the stem, they can be taken off with roots attached, but when they spring direct from the old stool under the soil it is seldom that they have roots attached.—E. M.

— The suckers at the bottom of the old plants may be taken up with roots and treated the same as root-cuttings.—E. H.

5076.—Names of Chrysanthemum.—Although both varieties belong to the Japanese section they are quite distinct. Source d'Or: This is the most popular variety grown for decoration, either in a cut state or as a plant. The colour is bright-orange, shaded gold, with semi-drooping florets. Flowers rather under medium size. Boile d'Or: Three or four years ago this was one of the most popular varieties for exhibition, but being rather difficult to cultivate really well, it is not nearly so much grown at the present time. The blooms are large, florets broad, long, and partly twisted. Colour, yellow, striped bronze.—E. M.

— The varieties Boile d'Or and Source d'Or are quite distinct from each other, and both are very useful and handsome kinds. The former produces very large flowers, with broad petals, rich-yellow, twisted, and striped bronze, whilst those of Source d'Or are rich-yellow, shaded in the lower florets with chestnut-red. This is the great market Chrysanthemum, and one of the finest varieties in cultivation, the flowers being produced in graceful sprays. It is largely grown for market, and is always welcome to its freedom and rich colour.—C. T.

— Source d'Or and Boile d'Or are very distinct: the first is more of a bronze than golden, Boile d'Or flowers later.—E. H.

5014.—Japanese Chrysanthemums.—The following would make a very good selection, and all were shown well at exhibitions during the past season: Colonel B. Smith, a big flower, like all the remainder, and bronze in colour; J. Stanborough Dillen, E. C. Clarke, G. C. Schwabe, Beauty of Castle Hill, Avalanche, C. H. Wheeler, Viviani Morel, John Shrimpton (deep crimson), W. Seward, Sunflower, Avalanche, C. H. Wheeler, W. W. Coles, Mlle. Marie Hoste, Alberic (a fine deep-crimson flower), Eda Prass (one of the most recent novelties, white, and touched with a delicate rose colour), Charles Davis (the bronze coloured sport from Viviani Morel), Etoile de Lyon, E. Molyneux, W.

Tricker, W. H. Lincoln, Mrs. Hattana Payte, Violet Rose, Miss Dorothy Sher, Mlle. Therese Rey, and Lord Brooke. Everyone of these, almost without exception, is new. Of the incurved you cannot do better than select M. F. Bahaunt, the new purplish rose-coloured incurved, the flowers are large, coarse, and not to my mind attractive, but still they are to be seen in all leading collections. Empress of India, Princess of Wales, Lord Wolsey, J. Lambert, Mrs. Robinson King, Ami Hoste, Novelty, Alfred Lyne, Queen of England, Jeanne d'Are, Baron Hirsch, Mue. Darrter, J. Doughty, Alfred Salter, Miss Haggas, Golden Empress, J. Doughty, Mrs. Heale, Novelty, and R. Petfield. These kinds endure considerable variety in colour, and include the finest of the more recently acquired sports and seedlings.—C. T.

5008. — **Striking Chrysanthemum cuttings.**—It is possible to strike the cuttings in an unheated greenhouse, but actual frost ought to be excluded by some means, such as covering to the glass, &c., or they will be a very long time before cutting roots, and may fall altogether. Without a little artificial warmth damp is always very troublesome, at least until the days become appreciably brighter and the sun gives more power. The most suitable temperature in which to strike cuttings of these plants is a range of 45 degs. to 50 degs., or 55 degs. They will root readily in a compost of three parts of sandy loam, mixed with two of leaf-mould and some sharp sand.—B. C. R.

GARDEN WORK.

Conservatory.

There is no lack of flowers for Christmas decoration. The most lasting and, therefore, the most useful flowers are the Chrysanthemums, of which there are still plenty. Christmas Roses are also very useful, and large clumps in good-sized pots will yield many flowers for cutting. Double White Primulas are very full of blossoms. The large-flowered whites are the most useful, as the blooms, when mounted on wire, can be used in various ways. Roman Hyacinths, Tree Carnations, Bismarckia, Magnolia, Zonal Pelargoniums (the double are the most lasting), Cyclamens, Heaths, Azaleas, Armist. Lilies, &c., can be had in quantity now, when the arrangements are allowed. Foliage is often a weak point at this season. Mahon-hair Fern, unless grown rather cool and in a light position, is not very lasting. The fronds of *Pteris cretica* and its varieties come in useful now, and some of the outdoor trees and shrubs may be used. The Evergreen Ferns are in variety, including *Dawsonii*, *Ulrichii*, *capitata*, and *Aquiliformis* are all useful for decorative purposes. The *Ilex* and *Viburnum*, especially *V. elegantissima*, will yield a good many drooping sprays. What is really required is something that will last several days. I have often used *Viburnum elegantissima* in pots for filling baskets, and a good stock of well-trimmed plants has considerable value just now. The same may be said of the various forms of variegated *Euonymus*, which may be grown in a cold-house, the hardy *Bambusa*, and there is a striped-leaved *Pampas* grass, rather nice when well-grown in pots for decorative work at Christmas. Tender forced things are soon used up at this season, and something tolerably hardy is required to form backgrounds. If there is plenty of graceful tillage to set off the flowers one does not mind so much even if the latter are not present in such immense bank-like bloom as we had in the Chrysanthemum a short time ago. A well-grown *Cannella* forms an excellent centre-piece for a change; but it is always more or less stiff, and a series of centres of this kind would be rather too stiff and formal for our present day ideas. *Palms* and *Tropeae* are always appropriate fillings in material; but such things are expensive to purchase, and they soon get too large for the small conservatory. There is not much potting to do now, and what work of this kind there is may be put back till the days begin to brighten. *Abutilons* are very useful in large houses where they can be situated out and trained up somewhere. In small houses they do not meet with so much favour. A stock of loam, peat, and straw-mould may be got in to be ready when required.

Stove.

Foliage plants will come out steadily now, and are among the most useful things for table and other decorative work indoors. *Crotons*, *Drapacenas*, *Amlia*, *Panikums*, the variegated *Cyperus alternifolius* is a charming thing when well grown, being so light and elegant. *Asparagus plumosus* and its varieties is a beautiful thing when well done, and anyone can easily have it in good condition, and it does not require much heat. The intermediate-house will suit it better than the stove. When a plant gets shabby from its cause, cut it down, and when it has a new and better growth will spring up from the bottom. For furnishing long sprays for cutting the planting-out system should be adopted. A small house with a dozen plants in it trained up wall or rafters would be a joy for a very long time at a very small amount of trouble.

Mushroom-house.

This structure cannot be too large, as so many things may at this season be grown in it. Besides Mushrooms, *Senkale* and *Rhubarb* may be brought forward in quantity, and *Chicory*, *Dandelions*, and *Endives* may be blanching as required. I have often started *Lily of the Valley* in the

mushroom-house, and *Asparagus*, when grown in small quantities in baskets or boxes will come on very well in the genial temperature without light, and the more Mushroom-beds made up the better, as when beds are made up in succession the fermenting manure will keep up the temperature of the building without much fire-heat. Of course, none of the things named will grow without heat, but when a number of beds are coming on in different stages, if the house has been well constructed, very little fire-heat will be required. Where Mushroom-beds are grown on a large scale there is no time to be spent particularly about the fermenting of the manure, as is commonly done in private gardens, and neither is this necessary. If the longest litter is shaken out and about one barrowful of good loam is added to every four or five of manure, the whole well blended together, and the bed made up as soon as fermentation sets in, there will be no cause to complain of the crop if the spawn is good.

Early Cucumbers.

Seeds should be sown now to obtain plants to put fruit from early in March next. Sow one seed in each small pot and plunge in a propagating-case in a warm-house where there is a brisk bottom-heat. As soon as strong enough shift into larger pots and have the pits made ready for their reception. Do not crowd the plants. In the long run more seeds will be put from plants sown apart than if sown together. It is a good plan to place a layer of good manure over the bottom of the chamber, and the same thing may be done if the bottom-heat pipes are laid in rubble. This layer of manure (I always use Moss-litter manure) is a great source of nourishment to the plants all through the season.

Forcing-house.

Vines in pots may be started now to produce ripe grapes in June. The best forcing varieties are the Black Hamburgh and Foster's Seedling. Plunge the pots in a bed of leaves, if possible. The roots will work out into the bed, and there will be a chance of feeding them there without deluging the pots of soil with strong liquids that have a tendency to make the soil sour. Bend the canes back to make them break well, and if this does not succeed give the single canes a bend by taking the end of the cane in the hand and twisting it until pressure is brought to bear upon the tissues all down the stem. So far as my experience goes this never fails to liberate and set the sap in motion.

Window Gardening.

Chinese Primulas, *Geraniums* and *Cyclamens* are very effective Christmas flowers. *Solanums*, *Antirrhiums*, *Anemones*, and *Pernettyas* will furnish a lot of bright-coloured berries. *Roman Hyacinths* and other bulbs will do very well in the warmest room. The early-potted *Freesias* are now showing flower, and with me they are stronger than usual this year.

Outdoor Gardening.

Laurels and other evergreens may be pruned now—so far, at least, as the knife can do so; but if oil laurels require to be cut down the work should be put off till March, otherwise severe frost may kill the shoots. The pruning and clearing a bed for cutting in an ornamental garden, makes a suitable evergreen for planting under trees where the shade is not too dense. They are also suitable for planting on sloping banks, to be kept luxuriantly pruning. The common green *Lilly* is a good shrub to plant in shady places; but in all cases where planting under trees the ground should be broken up and some fresh soil placed on a top-dressing. *Hydrangeas* borders, especially those containing bluish, should be mulched with old manure or a mixture of manure and rotten leaves. Continue to remove weeds from lawns, and if the Grass is weak and thin apply a manured dressing of some kind. Many lawns have severely suffered from the scorching received last summer. It is getting too late to plant bulbs now, but if there are any *Tranons*, *Snowdrops*, or *Daffodils* still out of the ground plant them in the Grass, at the foot of trees, or in sheltered nooks on the lawn. Where this is done freely the effect is very good. Much of the recently-planted *Roses* and shrubs, and see list all full things are properly watered. Take up and replant *Box-edges*. The mulch-layer may be used for edgings when cut in occasionally. It furnishes a very neat edging. I have seen the common Evergreen *Malouin* used in a similar way. Small plants are very cheap, and these things afford a pleasant change from Box or tiles. Plough the bottom of evergreen and other beds.

Fruit Garden.

If the pruning and training of wall or other fruit-trees should be in arrears make every effort now to overtake the work. See that Figs are properly protected before severe weather sets in. Figs are not safe without protection. Any where away from the south coast Strawberries may now be prepared for forcing by top-dressing and dipping in a solution of Fishmeal Compound. The dipping will not take long, and it may save some trouble from insects later on. The eggs of red-spider, after such a hot, trying season, may be on the leaves, and at any rate a dip will do good. See that the borders of the early Peach-house are thoroughly moist. This can only be done by stirring the soil here and there with the fork, and if found dry mulch the soil with liquid-manure. Soil-water is a good thing to use. When a Peach-berry gets over-ripe it is not possible to keep it from falling in the border, and if it must be dropped out, and a little sown in the water is a good thing. It is difficult to maintain a border properly when dry, and it is not unlikely there may be more dry spots than usual after such a dry season. Houses built on the oil-fashioned principle with movable lights may have been thrown open to the weather, and in such cases there will be less cause for anxiety. All late Grapes may be cut now and bottled. This process has been often described, and Grapes will keep better in a dry, cool-room, or, say, a steady temperature of 45 degs. to 50 degs., than in a house where the fluctuations are greater, and, where possible, plants requiring water are stored. Keep pot-Vines just started in a genial temperature of 50 degs. at night, with, on the average, a 10 degs. or 15 degs. rise in the daytime. Keep the canes bent back to induce all the buds to break.

Vegetable Garden.

The forcing gardener will be busy now, *Asparagus*, *Senkale*, and *Rhubarb* may be had in quantities. The only limit will be space and suitable roots. *Asparagus* also

should be plentiful from open-air beds, as well as from beds made up in Mushroom-sheds and cellars. In making arrangements for new houses for Mushroom-beds, have them as much as possible below the surface; the Mushroom-beds will do better, and less artificial heat will be required. Mushroom-beds may be watered freely with weak liquid-manure. After gathering commences autumn and winter salads require a good deal of watching. A full-grown Lettuce is soon decomposed if exposed to frost, and another is not much harder; shelter of some kind is absolutely necessary; the same remark applies with equal force to late Cauliflowers and early Broccoli, *Vetch's Autumn Self Protecting* is a very useful Broccoli, never disappoints, but though in a sense self-protecting, in the arrangement of the leaves over the hearts it is not wise to expose it to frost after this date. It is a very easy matter to protect them by stripping off a few of the bottom leaves, taking the plants up with balls, and planting them in benches with heads showing over to the north. Where frost is expected cover with mats or litter. Late sown Horn Carrots must be protected from frost. They will keep very well in the ground if covered, and they are better fresh drawn than taken up and stored, and if the weather keeps open they will make a little more growth, but it should be borne in mind that frost will spoil them. A little dry Fern scattered over them will keep them safe for some time—at any rate, and if very severe weather comes, cover with mats or excelsior over the litter or Fern. Where old plants of Tomatoes are kept on to ripen late fruit, if the white-fly appears deal with it promptly by fumigation. E. HOUAY.

Work in the Town Garden.

Now that the days are at their shortest, and the growth and vitality of plants at the minimum, bedding and greenhouse subjects of most description ought to be kept as quiet as possible, and not excited by means of a undue amount of warmth. In the murky atmosphere and defective light of a large town any considerable extension made at this season will be devoid of the necessary substance, and hence exhausting rather than augmenting the strength of the plant. Of course, such things as *Roman Hyacinths*, *Tulips*, *Narcissus*, *Cyclamens*, *Epacris*, and others now coming into bloom may fare, and will, indeed, be all the better for, a little extra heat, and in practice I have found it better to keep them in a somewhat warmer glass than is necessary in an open country place, because, possessing less vitality and vigour, they require greater care and more favourable conditions in all respects; but, in any case, the night temperature at the greenhouse proper ought not to exceed 45 degs. for the next six or eight weeks at least. The watering too must be very carefully performed now. In a low temperature too much moisture at the root is worse than too little; but though it is all very well to keep plants comparatively dry in cold weather, if carried to excess this often does a lot of harm, for the tender rootlets soon perish in a really dry medium, and then the plant suffers. In warm houses, where much artificial heat is used, it is a great mistake to be too sparing with the water-can, this quickly leading to enfeebled growth and hosts of insects. No repeating should be done now for too disturb the roots, or present them with a mass of inert soil to penetrate in their present stagnant condition would be dangerous in the extreme. Wait until the days gain greater length, and the sun more power again for all work of this kind; but in the meantime composts may be prepared and placed on their proper, pots washed and dried, and boxes mended or repaired. Insert Chrysanthemum cuttings, certainly of the Japanese varieties, as fast as they can be obtained; the best cuttings are often the strongest, and even if a plant is too forward for show in any way, it can be pinched twice or thrice, and will make a fine decorative specimen, or be utilized for the production of pin-flowers. Do not keep the cuttings too warm, nor, on the other hand, allow them to experience the least touch of frost, and prevent flagging by every possible means. Obtain and pot roots of *Spiraea japonica*, and *S. palmata*, *Hydrangea paniculata*, *Lilacs of the Valley*, and also of *A. stratum*, *L. lanceolatum*, *L. longiflorum*, &c. B. C. R.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary from December 16th to December 23rd.

Moved shrubs, *Spiraeas*, *Lily of the Valley*, bulbs, &c., into a forcing-house. Put in more cuttings of Chrysanthemums. I am striking the cuttings in single pots in a frame in a cool-house, where the frost is only just kept out. Carted loam for re-making a Vase border. Shall lift the Vines and rearrange the borders next February, and in the meantime the canes will lie and benefit from the exposure. Cut late *Tranons* and bottled them. Pruned and cleaned Vines. Rubbed off loose bark, and washed the rods with Gishurst Compound, 6 ounces to the gallon. This strength will kill all insects, both in the shape of eggs or larvae. Turned over a gravel walk that had become green with Moss from being overhung with trees. This turning, with a little fresh gravel on the top, will give us a bright, clean, firm walk for some time. The roller will be used till the surface of the walk is hard and firm. Took up and renewed worm turf on lawn-lawns. Mulched beds and borders of bulbs with old leaf-mould. Dipped *Pelargoniums* in a solution of Sunlight Soap and Thawee-powder. Put small stakes to *Freesias* just showing bloom. My *Freesias* are better than usual this season; the bulbs larger and better ripened. On the other hand, the *Spiraeas* are not so strong. The sunshine which ripened the *Freesias* checked the growth of the *Spiraeas*. Reported a few early-starting *Gloxinas*. The bulbs are starting into growth, and there is no advantage in prolonging the rest when the plants are restless. The bulbs starting now will be in bloom in February. There is no difficulty in flowering *Gloxinas* so soon. It is only a question of resting early, and keeping the bulbs cool when at rest. Many so-called store bulbs are kept too hot and too dry when at rest, and the growing powers are weakened thereby. *Caladiums* sometimes get the dry rot from the dry heat in which they are rested. Moved the first batch of Strawberries into forcing-pit. They

* In cold or northern districts the operations referred to under "Garden Work" may be done from the day on a fortnight later than in these districts, and the results.

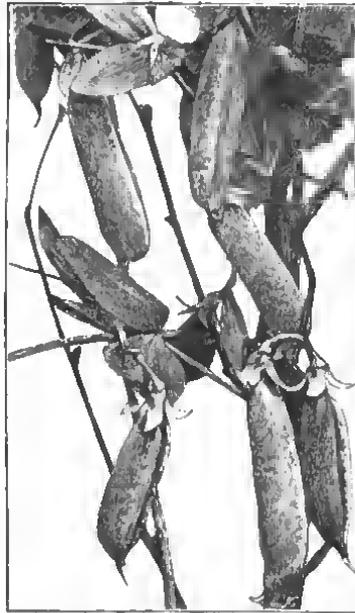
will be brought on steadily at first, night temperature 50 degs. for the first fortnight, and not too much water given. If watered too freely the plants rush into foliage at the expense of the spikes of blossoms. If there are any suspicious of red-spider or green-fly the plants are always dipped in a solution of Sunlight Soap. This is a grand cleansing agent, and so cheap, too. Busy pruning and nailing wall-roses. Want to get as much of this work done before Christmas as possible; so many other things are waiting for us after Christmas. Rearranged rubbish yard, and made a fire of a lot of cuttings, and afterwards, when the fire had got a pretty firm hold, other less combustible rubbish was placed on the heap. The heap will probably be some days before it is burnt out. Fresh material being placed upon it daily. Placed a lot of early Potatoes in boxes in heat to get them sprouted ready for planting in frames shortly. Started a fresh lot of French Beans in 8-inch pots, five Beans in a pot. Planted more Cucumbers seeds in single pots in heat. From this onwards I shall not be without strong Cucumber-plants for making good blanks in houses, or to plant fresh houses if desired. I expect it is only fancy, but sometimes I think when one has a surplus of young vigorous plants, those set out seem to start away and do better. Sown Tomato-seeds of several approved kinds, including Ham Green Favourite and a good strain of Old Red.

THE KITCHEN GARDEN.

PEAS AND THEIR CULTURE.

VARIETIES of Peas, like all kinds of produce for which there is a large demand, are continually increasing, so that to make a selection from catalogues has become a hopeless task. Starting with early kinds, except for the first few gatherings, the earliest section of Peas is scarcely worth growing when compared with the rich melting flavour of the Marrows that come in later; but as the aim of most growers is to get Peas as early as possible, a sowing is generally made of one or other of the small round kinds about the middle of January. My favourite is Ring-leader, which, although an old variety, is still one of the earliest and best, a good cropper, and very hardy. Laxton's William I. is early, and, being of good quality, it is a desirable Pea to cultivate. American Wonder (here figured) is an excellent kind. As a dwarf-growing, free-bearing, compact Pea for sowing on a warm, sheltered border, Maclellan's Gem is unsurpassed, for not only is it a most prolific bearer, but it is everything that can be desired when cooked, and it has all the good qualities which a dwarf, early sort can possess, and from not being more than about 2 feet high, a few twiggy sticks suffice for its support, a consideration near towns where Pea-sticks are difficult to obtain. For sowing in open quarters to succeed the first entries, there is none that equals the old Al-vinceer, which is really, in every respect, a first-class Pea. This variety grows to the height of about 3 feet, branches freely, and bears nearly up the entire length of its main a number of well-filled pods, the Peas in which are of good colour and delicious flavour. To follow in the heels of this, a sowing of Veitch's Perfection should be made about the same time, and, where a regular supply is wanted, continued at intervals of a fortnight till the middle of July. Take it all in all, this is by far the best dwarf Pea in cultivation; but one mistake which many make is sowing it too thickly, a circumstance which, on account of its robust, free-branching habit, causes the plants to become so thick and crowded as to spoil the crop. In good,

The advantages of this will be obvious at a glance, as the one prepares the ground for the other. To grow Celery well the trenches must be heavily manured, of a portion of which the Peas get the benefit, and the deep digging necessary for its cultivation and in taking it up, is just what the after crop requires, as the roots can penetrate far down and be in a measure independent of the weather or other aids for a supply of moisture. The readiest way of getting early Peas is to sow in boxes or pans of finely-sifted leaf-soil, and to place them in any vacant situation under glass where they can be kept close till they germinate and get fairly up, when they must be set well up to the light and have plenty of air to prevent them from becoming weak or drawn, which they soon would do if at all thick. Various other plans have been adopted in raising early Peas, such as sowing on strips of turf and in drain tiles filled with soil, but both take up much more room, time, and labour, and are not one whit better, as Peas transplanted just as readily and safely from the leaf-soil as when treated in any other way. By the middle of March, if the weather be anything like favourable, Peas sown in January as just recommended may be safely ventured out in any



Pea "American Wonder." Engraved from a photograph sent by Mr. Norm in Blake, Bedford.

sheltered border or quarter, where they may easily be put into rows by drawing a deep drill by means of a line or chipping one out with the spade so as to admit their roots without being cramped or doubled up. The firmness of the leaf-soil will admit of their being divided to any extent without injury, so that they can be laid in thinly at the time of planting, and when this is done they should be protected by having a few sprigs of small-leaved evergreen stuck along one side of the row to break the force of any cold winds that may occur.

SPRATTOES do much damage to Peas just after they emerge through the ground, or when planted out in this way, nipping off each leaf as it appears till the plants are entirely crippled, unless some effectual means be adopted to prevent their attacks. Nothing answers the purpose better than the galvanised wire Pen-guards that are now sold so cheaply by most iron-mongers, as these put them quite at defiance, and if taken care of when out of use will last a lifetime, so that the first cost might scarcely be a consideration, as they do away with all annoyance and disappointment in securing a crop. In cases where these are not at hand, a ball or two of emmet black cotton run up and wrapped about three times, just above the heads of the roots of Peas, and supported in that position by a few small sticks, will generally keep them

at bay, as they become naimed when they are light and find their wings entangled; or the tops of Peas may be made disagreeable to their palates by sowing some dry soot over them while the dew is still on them, an operation which will also answer the double purpose of preserving them from slugs, which this year are more than usually troublesome, and will be so unless we have some sharp frosts to come upon them unawares before they have time to bury themselves in the ground. Besides the above, growers of Peas have other means to contend with, the most formidable of which are rats and mice. After trying many remedies for these, I find nothing equal to paraffin oil, a tablespoonful or so of which is sufficient to soak a quart of Peas, which, when so treated, are left unmolested, and are not in any way injured. It may not be generally known that the

YOUNG GREEN TOTS of PEAS make delicious soup, a luxury that may be enjoyed all through the winter. Of course it will not do to sow choice sorts for purposes of this kind, as that would make the soup come rather dear; nor is it necessary to do so, as any common cheap Pea will do equally well. The best way to treat them is to sow thickly in boxes or pans containing light soil; and if wanted quickly, to stand them where they will get a little heat, when they will soon be up ready for use, which will be directly they are about 1 1/2 inches long. If allowed to get more forward than this they lose much of the delicate Pea flavour, and do not become incorporated with the soup so readily as when they are young and tender. S.

5025.—Growing early Rhubarb.—Provided the roots are strong, "Novice" will have little difficulty in getting good early Rhubarb. Place the pots or tubs over the crowns, then enter them with a good depth of leaves. They will soon get warm enough to excite growth, and there is no danger of getting too much heat so as to injure the crowns, as is the case when stable-manure is employed, and I think the flavour of the produce is better when leaves alone are used; if placed out at once the Rhubarb will be fit to pull about the end of January.—J. G. H.

5008.—Early Potatoes and Brussels Sprouts.—If it is intended to put out Brussels Sprouts between the rows of Potatoes it will be highly desirable that they be planted 30 inches asunder. To obtain good Brussels Sprouts they should not be planted closer than this, and the same distance asunder. To get good early Potatoes they require rich, good deep soil, and this is also the best for Brussels Sprouts.—J. D. E.

—If it is intended to plant Potatoes and Brussels Sprouts alternately, the rows should not be less than 30 inches apart, but I have frequently the early short-topped Potatoes 2 feet apart, and then planted a row of Brussels Sprouts between every second of Potatoes, and I rather like the latter plan best.—E. H.

—I suppose you mean the distance between the rows, not that from set to set in the rows. To allow of the Sprouts being planted between, and the Potatoes conveniently fitted without disturbing them, a distance of 2 1/2 feet to 3 feet ought to be allowed, preferring the latter, if possible. But if you can slip the Potatoes early in June it will be time enough to plant the Sprouts afterwards.—B. C. R.

5053.—Replanting Seakale.—Seakale may be replanted now, but it will do as well if the cuttings are laid in dump sand or earth till March and then replanted. I always use the thongs or roots cut from the forcing crowns to make new plantations. The crowns are lifted now for forcing, and the side roots trimmed off. These latter will be laid in dump sand till March, by which time new rows will be forming. They will then be planted with a dibble in well prepared ground in rows 18 inches apart, and 1 foot apart in the rows. Any good soil well manured and cultivated will grow Seakale.—E. H.

Seakale may be replanted any time before it starts into growth in the spring. Plant in rows about 18 inches apart, and allow a foot or so between each plant in the rows. Seakale does best in an open garden soil, deep and rich. I find it does not succeed well in clay loam, unless plenty of open soil, such as road-samplings, siftings from the potting-shed, &c., is placed around the roots. Even coal-ashes is excellent material to mix with clayey loam for Seakale, and for such soil plenty of good stable-manure in a decayed state should be used, and some ashes around the roots is beneficial.—J. D. E.

Original from March is a good time to re-plant Seakale. The soil should be trenched 18 inches deep, and, during some partly

The Snowdrop-tree (*Halesia tetramera*), is very handsome. It grows many feet in height, and produces very freely pure-white flowers, and individually are much like those of the Common Snowdrop, hence the name. Far lovelier in late summer the Syrian Mallow (*Hibiscus syriacus*) is useful, if one avoids the dull dingy-colored forms. *Hydrangea paniculata grandiflora* is a grand shrub for a lawn; its flowers are produced in immense heads, and they are ivory-white in colour. Against a wall the Double Jew's Mallow (*Kerria japonica*, fl. pl.) is very showy in spring, the flowers of the deepest orange-yellow colour. The double white-flowered Cherry is a lovely tree, smothered with rosette-shaped flowers of purest white. Then select also *Lambrogonia*, the handsome Tulip-tree, the Scarlet Thorn, Siberian Crab, *Magnolia conspicua*, which is covered with its large Tulip-like flowers on the leafless branches, the *Maclura*, *Olearia Haastii*, the Quince, to grow naturally on the outskirts of the lawn, and not interfered by neighbouring things. Much change in variety (*Philadelphus*), particularly the pretty dwarf, white fragrant *P. microphyllus*, *Rhododendrons*, if the garden is suitable for them, not chalky, the beautiful *Rubus hispida* (black), the *Rubus Rose*, and the species named the Chinese Quelder Rose (*Viburnum plicatum*), which differs from the other in its more rigid habit and deep-green wrinkled leaves, *Virgilia lutea*, and *Weigela*s. Then you may plant *Roses*, such as the *Rose de Gloire de Dijon*, but not tender kinds; *Jasminum multiflorum*, *Clematises*, *C. montana*, and the rich-purple *C. Jackmanii* in particular, *Honeysuckles*, *Roses* (*Gloire de Dijon* and *Chesham* hybrid), *Ampelopsis maritima*; *Ivy*s, the *Pieris Thunii* (*Pyraeanthus*), *Wistaria* and *Vines* make excellent climbers. Hardy plants of many kinds also select, and a list of the best will appear.—G. T.

—Most of the hardy trees and shrubs do well in Derbyshire. I have lately had some things, chiefly evergreens, from a Derbyshire nursery in splendid health. There are several large nurseries in Derbyshire where trees and shrubs are well grown. Before ordering it would be wise to look round.—E. H.

301.—Laurels.—No time is better than the present to prune Laurels, as the prunings can be employed for Christmas decorations. Laurels are all the better for annual pruning if the plants have filled their allotted space. If they are neglected in this detail they are sure to become "leggy" and lose their lower leaves, which renders them unsightly. A sharp knife or pruning-shears should be used for the purpose in preference to hedge shears; the latter, of course, cuts the leaves as well as the shoots, rendering them unsightly.—S. P.

—The young shoots of Laurels may be cut back now.—E. H.

—This is not the best time of the year to cut back Laurels. Better leave it until the spring, just before they start into growth.—J. D. E.

SHRUBBY NEW ZEALAND SPERDWELLS (VERONICAS).

Of the numerous plants introduced of late years shrubby Speedwells take the lead in point of numbers, over sixty distinct species (not including varieties or forms), according to the latest botanical authority, being found there, and of these, perhaps, half are in cultivation in our gardens at the present time. The only thing urged against their being largely planted is their liability to be disfigured during severe winters; but I believe this is true only in certain localities, and under adverse conditions. When hurt at all it seems to be our damp climate rather than the cold that does it, and if planted in well-drained soil where they can receive a slight protection and be kept comparatively dry during the winter season, there is little fear of their being injured. Such, at least, is my experience in the neighbourhood of London, where the damp atmosphere, fogs, &c., carry off a greater number of this class of plants than the cold. It is not unusual, when duplicates are planted in different situations, to have some killed while others are untouched, and this will be so until we find out the exact positions in our gardens best fitted to the requirements of these plants. Near to the seaside I believe they grow more vigorously than inland, the glaucous species being almost white, and forming round hardy bushes. As pot plants they are well adapted for the balcony, the corridor, and the conservatory

they have a future before them, and have already been used with advantage; the variety in habit and size, as well as the various hues of colour, give them an interesting as well as an ornamental appearance. If cuttings are put in in the autumn they will root freely and make good specimens by the second year. For the rock garden I have found them very useful.

V. LINDBERGANI, is one of the oldest plants in cultivation, having been introduced many years ago, and undergone vast improvements. *Anderssoni*, *kermesina*, *versicolor*, *hamatifida*, *macrocarpa*, &c., either hybrids or improved forms of this species, are largely used in the conservatory and greenhouse, and where space admits of their being planted out they make beautiful specimens in a few years.

V. SALTICOLA, a fine, shiny-leaved shrub, bearing numerous spikes of white flowers, variably, and generally longer than the leaves; *V. parviflora*, a small-flowered, very graceful species. Other allied forms are *V. Kirki*, *speciosa*, *erecta*, &c. Amongst the latest introductions are *V. Lyalli*, *Holkema*, *Gaturovici*, *clathrata*, *venicosa*, *heris*, *nanum*, *elliptica*, *Colensoi*, *implexicaulis*, *pinnatifida*, *sparsiflora*, *Rostki*, &c.

V. TRAVERSI (here figured) is one of the old ones, having been in cultivation many years. It is amongst the hardiest of the shrubby Speedwells, and is certainly one of the most beautiful and useful in a garden. Unless after an unusually severe winter, it never fails to produce freely its pretty white clusters of flowers, which in contrast with the dark shiny leaves make a



New Zealand Speedwell (*Veronica Traversii*).

charming picture. It is an excellent plant for the rockery, where with a little shelter it forms fine bushes full of interest both in summer and winter. Other varieties are *arborescens*, *pinquifolia*, *carneola*, *dissimifolia*. K.

COLD FRAMES.

SINCE the introduction of hot-water pipes cold frames have fallen into disrepute—at least, during the winter months they are still used for sheltering half-hardy plants. I suppose very few of the present-day gardeners would like to try their hand at carrying a lot of bedding plants, such as *Geraniums*, *Lobelias*, *Petunias*, &c., through the winter, much less *Cinerarias*, or any other soft wooded greenhouse plants; yet it is done, even in these advanced days. It is not many years since I knew one of the old school of gardeners who kept all his stock of plants for

some very brilliant bedding out in a few cold frames, and some of the finest, dwarfiest, and cleanest *Cinerarias* I have ever seen were wintered in a cold frame, but it requires a deal of labour, and I question if anything is gained on the score of cost. The plan pursued with the bedding plants was to set the frames in a sheltered position from wind, and where every ray of sunshine could be utilised; the plants were kept fully exposed to the air on all occasions when there was no frost, but directly frost threatened, the lights were shut down close and double mats put over the glass, and in November the sides of the frames were encased in litter at least a foot thick, and after that date a good coating of litter was laid over the mats at night and removed in the morning, and by keeping the plants dry, and every decaying leaf removed, a very large percentage of the plants were safely carried through the winter. J. G. H.

ORCHIDS.

THE DOVE PLANT (PRISTERIA ELATA).

I HAVE by me a number of letters from various persons asking many questions respecting this plant, but in all of them there is the complaint about its not flowering, and I have thought it best to answer all that it may concern in an article upon the species. This is a plant that all may grow in their stoves with a mixed collection of other plants; there need be no fear of its being too hot for it, for this Orchid comes from Panama, when it is subjected always to a great deal of heat. It was called by the early fathers who settled there the *Ri Spiritu Santo*, and hence comes the name of the Holy Ghost-plant, so called from the resemblance of the lower part of the flower to a little white dove. It is a tall and handsome plant in its habit of growth, making very large bulbs, and bearing large lanceolate, dark-green, plicated leaves, each some 2½ feet long, sometimes more, and erect flower-spikes, which grows from 3 feet to 4 feet high, bearing numbers of its globose, waxy flowers, so that the plant becomes an object of much attraction. Now, for the non-flowering, which my readers complain about. I am somehow led to the conclusion that some of these having invested in a Dove-plant, no sooner get home than they begin to look about and want to see it flower. This is reasonable enough, but they entirely forget that if their plant is not strong enough to bloom it will not do so, and all the wishing for it is not of the least avail. I am quite willing to admit that there are sky-flowering varieties of the Dove-plant as well as of many others. I had one upon one occasion, and it was given me to try and flower. The plant had been bought at the sale of the celebrated collection gathered together by Mrs. Lawrence, of Ealing-park. It had been kept for a few years, and it never produced a flower-spike, although it had larger bulbs than I ever remember to have seen *P. elata* with to this day, and for four years I grew it, treating it just in the same manner that I did my other smaller plant that flowered annually; in fact, it always occupied a place within a yard of it, but never presented the sign of a spike. Hence then, I say, was a striking example of a free-flowering variety and a shy one, and as I could not derive any pleasure from it I sold it in London, and its large growth caused it to realise a good amount, and I hoped with a change of situation it would turn over a new leaf and flower with profusion. From the conduct of this plant it is not right always to say if your specimen is strong enough it will be sure to flower. The plant should be treated as a terrestrial one—that is, not placed above the pot's rim, but rather an inch or two below it. The pots should be well and thoroughly drained, and this covered with a layer of Sphagnum Moss, which does not rot away quickly, and prevents the soil percolating into this material. The best mixture is sound turfy loam in good heart, mixed with peat and chopped Sphagnum Moss, all well incorporated, and put in firmly, the bulbs sitting on the top. Water may be given freely during the growing season to its roots, and a great deal of moisture in the atmosphere, beside which sprinkling overhead from the syringe night and morning before and after the sun has power, for although this plant

enjoys good exposure to the sun and light, a slight shade is necessary just at the very hottest time of the day, for it must be borne in mind that the plants are under glass.

MATT. BRAMBLE.

AN AUTUMN-FLOWERING ORCHID.

CATLEYA SANDERIANA.

"This fine form of *C. gigas*," says "H. H.," "has just opened the first of seven flowers, which it has coming. It has bloomed with me for three years in succession in the month of December, so that it is quite a late flowerer; more especially is this the case after the exceptionally hot summer we have had." Yes, my friend has a very good form of the plant and it is an exceptionally late bloomer, and it should have the name of autumnalis attached to it, which name is very foolishly tacked on to the true *C. labiata* by many amateurs, because the labium named by Lindley was an autumn bloomer; consequently, it does not require to be so pointed out by a specific name being coined and added to it. In the case, however, of *C. gigas*, which may be called a late summer bloomer, a variety which appears year after year in the month of December, what can we do otherwise but call it an autumn-flowering variety? I may add that at the present time I know of some three places round about that have a form of this variety flowering, and only one of these is a good one. I know the flower of "H. H.," he having sent it to me last year, the sepals and petals being broad, and of a rich rosy hue, the large lip being much undulated round the margin, of a deep crimson, shaded with purple, and with a pair of large rich yellow eye-like spots, standing one on each side of the throat. The plant will require careful finishing off after blooming, and it should be kept dry and cool until it commences to grow afresh, when it may be either repotted or resurfaced, and again find its place in the Cattleya-house.

MATT. BRAMBLE.

THE BIRD'S-BEAK ONCIDIUM (O. ORNITHORHYNCHUM).

In reply to "G. J." and others, I must say a few words about this *Oncidium*, which was always a favourite with me, although a small-flowered one, because of its fragrance. In colour it is slightly glaucous, producing a branched arching spike, which is heavily laden with its rosy-lilac blossoms, which are relieved with a rich yellow crest. It blooms through the autumn and winter months, its sweet perfume making the house smell delightfully. The variety *album* is a charming plant, having pure-white flowers, relieved only by the yellow crest on the lip, and having the same delightful odour. It still remains a scarce plant, and realises a big price. This is an *Orchid* which thrives best in the cool-house, but just at its flowering season it is all the better for having a few more degrees of heat than it gets there. It should be well drained, and planted in either a pot or hanging-basket; in the latter I think it is most effective. When its flowers open it should be hung lower down to enable the ladies of the establishment to cut some sprays without committing any damage, for the perfume will be sure to cause them to appropriate a piece, and this want should be accommodated as much as possible. For soil use good heavy peat fibre and chopped *Sphagnum Moss*. Water freely when growing, and do not let the plant suffer for water through the winter, but it must be given with greater care at this time.

MATT. BRAMBLE.

IVY-LEAVED PELARGONIUMS.

THESE useful plants may be grown like other *Pelargoniums*, with the support of four dark-green sticks, round which the long shoots are trained, or used as trailers for window-boxes, or even as basket plants, in all of which positions they do well. These *Pelargoniums* are also suitable for window culture, and may be grown to great advantage placed on brackets in the woodwork of a bow-window, from whence they trail downwards, showing their beautiful blossoms to great advantage. An old plant, slightly cut back and repotted in spring, will go on blossoming for *many weeks*, only requiring another shift and the removal of some of the

lengthy sprays to start again later on. They are thus almost continuous flowerers, and they will bloom even in the depth of winter when grown in slight heat with a sunny aspect. The double and semi-double varieties are considered the best, many of the blossoms rivaling in beauty those of the French varieties from which they derive their descent. Those of a magenta tint are not so desirable as the clear rose and carmine shades, which harmonise so much better with the rest. Magenta is a singular colour in this, that no other shade of red or blue looks well with it. Unless a plant with flowers of this tint can be grown alone, it is, therefore, best avoided. Among Ivy-leaved *Pelargoniums* the following will be found the best: *Mme. Crisse* (pale-rose and maroon), *Louis Thibaut* (clear bright rose colour), *Mignon* (a dwarf variety with salmon flowers), *Souvenir de Charles Turner* (brilliant pink and violet), *Beauty of Castle Hill* (salmon, shaded with rose, very fine), *La Rustique* (very double, soft-rose), *Lilyet* (bright-cerise, with large flowers), *Prince of Wales* (shaded-purple), *Murillo* (velvety-purple, with large flowers), *Newton* (fine vermilion-red), *Galilee* (large trusses of bright pink flowers), and *Sarah Bernhardt* (pure-white, with maroon veining). Ivy-leaved *Pelargoniums* are easily propagated by cuttings or slips during the summer, and should be grown on in large plants, repotting them in good ordinary compost as necessary. As the flowers are borne mostly at the terminal points, it is well to cut these back after flowering to induce the side-shoots to break freely. Liquid-manure or soft-water, during their flowering season, will benefit the plants and keep the foliage handsome. Directly the leaves begin to turn of a lighter shade of green, the plants will require repotting or a liberal top-dressing.

R.

OUTDOOR PLANTS.

ADAM'S NEEDLE (YUCCA GLORIOSA).

THIS is a large and imposing *Yucca* (see illustration) of distinct habit and somewhat rigid aspect. Its flower stem is over 7 feet high and much branched, and it bears an immense



Adam's Needle (Yucca gloriosa) in flower.

pyramidal panicle of large flowers almost white. Its numerous leaves are stiff and pointed; it is one of the noblest plants in our gardens, and suitable for almost any position. It grows very much when grown from seed, and this is a

good recommendation, as the greater variety of fine form we have the better. Its chief varieties are *Y. g. longifolia*, *plicata*, *maculata glaucescens*, and *minor*. The soil for it should be a rich deep loam. It is a native of North America. G.

TRANSPLANTING HARDY PLANTS.

If you want hardy plants to show the full beauty of which they are capable, you must not let them stand year after year in one place, for the very obvious reason that they are strong rooting and gross-feeding subjects, and soon exhaust all the available food within their reach. Now, although this can be partially remedied by rich top-dressing, or applications of manure in liquid form, it does not have the same effect that transplanting to fresh soil has. I grow hardy plants for the sake of cut bloom, and grow each kind by itself in beds about 6 feet wide, with alleys between for convenience of cutting the bloom, and certainly in no other way can finer blooms be had. During the past exceptionally dry season we had ample opportunity of observing the difference in growth of plants of the same kinds that had been transplanted on to fresh soil, and there left on ground occupied for one or more years previously. And I need only mention one or two—viz., *Helianthus*, or *Perennial Sunflowers*, and *Michaelmas Daisies* as types of the whole. These transplanted to fresh soil grew away strongly and flowered freely; but those left in old beds could hardly make any headway against the drought, and the flower-stalks were very short, and the individual flowers very small. The following are types of many kinds—viz.:

ANEMONE JAPONICA (Autumn Anemones), white and pink, are strong-rooting subjects that soon exhaust the soil, and should not stand more than two seasons if fine blooms are desired, and spikes to attain 5 feet or 6 feet high.

ACHILLEA PTARMICA, a lovely white flower, very useful for wreaths, blooms nearly the whole summer. The underground roots spread out and make fine clumps, but if left long in one place it dies away altogether.

CHRYSANTHEMUM MAXIMUM, one of the finest of *Marguerite*-like flowers, should be divided and replanted on to fresh soil every year if possible, as there is no comparison between the size of the blooms, even the second year after planting, with those on newly-planted beds.

CARNATIONS require and repay for replanting every year. Not only do they flower more profusely, but the plants die away if allowed to stand long in one place.

HELIANTHUSES (*Sunflowers*) in great variety: are very strong-rooting plants, and soon exhaust the soil. Half-a-dozen clumps on fresh soil will bring more flowers than twelve the number left over two years.

MICHAELMAS DAISIES are such useful plants for cutting that they ought to have good culture. All their wants are supplied if you divide and replant on to fresh soil every alternate year.

PULMONES of herbaceous kinds are very similar in their growth, and need good rich soil to do them justice.

LYNETHUM FLORIBUNDUM is a splendid plant for late autumn blooming, but unless it can get abundance of food for its roots it is of little use. Dig, replant, and feed well.

PINKS, if left more than two years, get long and straggling, and die away in the centre of the clumps. Digged in the autumn, every piece makes a good plant. JAMES GROOM, Gosport.

NOTE.—Hardy Lily-beds.—Your query entails a rather lengthy answer. The best way of all, if you are in a position to do it, is to plant the Lilies amongst shrubs, and it is in this way that one gets such splendid effects in the autumn. *L. auratum* amongst *Rhododendrons*, or *L. speciosum* amongst *Kalmias*, create delightful pictures. I remember once seeing the pure-white *L. candidum* planted against the Purple Beech, and the contrast was most effective. Well, first, as to the soil and position for Lilies, as they do not all require the same treatment, some preferring heavy soil, others peat. As regards position, amongst shrubs is unquestionably the best, and the very best kinds, varieties of *L. elegans*,

sometimes called *L. thurricum*, may be planted amongst Heaths. If one wishes to make a Lily-bed one must choose aright, getting those together that prefer loam and those peat. The Martagon Lily will not thrive in peat, but in loam, but the Tiger Lily is not particular, succeeding in almost any garden soil. The beautiful bull Lily (*L. testaceum*) requires humus, also *L. pardalinum*, the Scarlet Martagon, or Turk's Cap Lily (*L. chalcedonicum*) the Orange Lily (*L. croceum*), and *L. davuricum*. It is a pity that *L. croceum* is not more seen, as it is a fine old kind, and one of the easiest of all to grow. *L. tigrinum splendens* is a noble flower, deep-crimson with richer coloured spots, very free, and vigorous. The white *L. candidum* is often one of the most refractory of Lilies, from the experience of many people, imported bulbs flower well the first season, but afterward, as a rule, fungal disease attacks stem and leaves, and both dry up and wither before the flowers open. This, I think, is a general experience, but the finest mass of this Lily I have ever seen was in a sloping garden at Bath, hot, and apparently very dry. This mass I have never seen equalled. Another good Lily is *L. longiflorum*, the flowers very large and ivory-white. It is usually grown in pots, but well worth planting in the garden, and replanted every third year. As regards peat-loving Lilies, *L. auratum* must be first mentioned, and one gets a splendid mass of colour if the bulbs are good. Such fine importations come over from Japan that there is no reason for getting poor stuff. Two charming little Japanese Lilies are the scarlet *L. concolor* and the yellow *L. Coridion*, the flowers very neat and showy. *L. elegans* and *L. superbum* may be also included. All the above kinds are cheap, and you can plant single bulbs, putting them fairly close together to get a rich effect. Humus is neither necessary nor desirable for Lilies; it is hurtful to them, except *L. auratum*, and in this case need not be given. *L. superbum* is a splendid species, very tall, the stems rising to over a height of 7 feet, and bearing flowers of intense and varied colours. By planting the foregoing you will get quite a succession of bloom, *L. candidum* being one of the first to open, finishing with *L. speciosum* and *L. tigrinum* late in the year, usually about October, although in some seasons, as last, for instance, they were much earlier than usual. You might plant the bulbs named above the Lilies, but be very careful not to disturb the bulbs. I should prefer to grow them in clumps rather than apart. A mixture of Lilies in a bed would not be very enjoyable, as they differ so greatly in height, aspect, and the colour of the flowers. Plant them in clumps in the border, keeping them distinct, if you have no struts to plant them amongst as suggested.—V. C.

5961.—**Pampas Grass.**—Do not cut the Pampas Grass down, trim off the dead leaves for the sake of tidiness, but nothing more. If the plant does not flourish as well as could be wished, remove the surface soil 3 inches deep for 3 feet all round, and replace with better, giving it a good dressing of partly-decayed manure, at the same time forking it in amongst the surface roots. Should the weather be dry next summer give the roots several good soakings of water to encourage a free and vigorous growth.—S. P.

The fact that you are in doubt whether the Pampas Grass should be cut down or not shows that you know more about its proper treatment than your advisers. It should not be cut down, as the old foliage affords some protection against severe frost and cold wind. In April the tops of the old leaves may be shortened back, and nothing more should be done to it. In the case of old plants it is a good thing to clear out the centre once a year, as dead leaves and other matter accumulate at that point and kohl the moisture, and then very hard frost has more effect on it.—J. C. C.

In some districts the Pampas Grass suffers during severe winter, and if cut back now and cold weather comes shortly the plants might die. It is much safer to leave the cutting back till May. All the old discoloured leaves may be cut away, but I should hesitate about cutting down close to the ground.—E. R.

5967.—**Bees and Carnations.**—The bees do not injure certain flowers, I have not found them specially injurious to Roses and Carnations.—E. H.

WOODLAND FLOWERS.

LARGE WINTER-GREEN (PYROLA ROTUNDFOLIA). There is a charm about the modest beauty of some wood plants that cannot be equalled by the most brilliant of our own border flowers, and their wonderful harmony with the senti-



Large Winter Green (*Pyrola rotundifolia*).

ment of poetical mystery that reigns in woodlands cannot fail to impress every true lover of Nature. Such gems as the little Twin-flower (*Linum*) *Tricotalis*, and the Winter-green might escape notice in the full light of an open place, but in the half light of their shady world, set in Moss, and amid the rich, quiet colourings of forest-earth their little bells and stars have the value of precious jewels. These woodland plants also do well on the shady side of a rock border. J.

Stock "Maive Beauty."—There is no more distinct and beautiful variety among the Ten-week Stocks than this. In habit of growth it is a model of what a Stock should be; compact, yet free branching, flowering freely, and throwing up a centre and several side spikes of charming double flowers. In colour it is soft-pink, deeply flushed with mauve; it is very humble, and there are but few single varieties among it, and it is this characteristic which tends to make the seed so very scarce. It belongs to what is termed the pyramidal Ten-week Stocks. It is a type of Stock well adapted for flowering in pots, because of its compact, handsome growth. The seed can be sown early in spring for summer flowering, or it can be treated as intermediate, sown in July and August for blooming in pots in the following spring. Mr. Samuel Barlow, of Manchester, used to make lawn beds of this and a line crimson-flowered Ten-week of a good habit, which was known locally as Dyon's Stock—sowing the seeds in June and July, growing on the plants in pots all the winter, whitening them two or three times to get them into size, and then planting them out in April and May, when they bloom grandly and are most effective.—D.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of beautiful rare flowers and good fruits and vegetables for illustration. The drawings, as made up, are engraved in the best manner, and will appear in due column in *Gardening Illustrated*.

ROSES.

ROSES IN AN UNHEATED HOUSE.

Or all climbers for unheated houses, I think the Rose is the most suitable. When we bear in mind how well they grow upon a wall or fence in the open, it is evident that the further protection of a rod-house may be used to great advantage. There are two points which should be borne in mind and acted upon—careful ventilation, so as to secure a more uniform temperature, and to keep the plants as backward as possible during January and the early part of February. Where other subjects are grown they will, of course, be those which need somewhat the same treatment, seeing it would never do to cultivate any which could not stand a few degrees of frost at this period. I may remark here that my experience proves plants will stand a few degrees more frost when under cover than the same plants would be able to battle against in the open air. In a cold-house of this description we get the full benefit of early spring sun free from the checking influences of cold winds and night air, and things come on very rapidly—too much so, in fact, unless steadiest as much as possible during the early part of the year. We must not forget that if we encourage early growth we have not sufficient means of keeping a spell of cold weather from them, and such often occurs during March. But to get to our subject more closely, all of the Roses should be pruned at once, very little of this being necessary with climbers, if the instructions about

SUMMER PRUNING have been carried out. We must remember that, being under cover, the sap will rise more early than if exposed, and we also have the means of keeping cold weather from the young growth when once we have allowed it to start freely. It is this latter fact which is the cause of such grand Roses being produced in cool-houses. The frost which cripples the early growth of those out-of-doors is not sufficiently severe to affect that under glass, provided the latter have not been allowed to start prematurely. Reckoning we get a good crop of Roses in the open border by the end of June, we shall have a crop of bloom in April under glass.

VENTILATION is a somewhat difficult matter, because we so often have a bright sun, which is, so far as outdoor Roses are concerned, tempered by a keen wind. The action of sun upon the glass speedily raises the temperature, and we cannot give ventilation to reduce this unless there are ventilators provided upon all sides. Always give it upon the sheltered side, and avoid lowering the temperature too suddenly. This is very injurious, and conduces to serious attacks of mildew more than any other one thing. Upon such days give a little air early in the morning, gradually increasing it as the sun gains in power. The same tactics should be adopted when closing the house. As the plants begin to grow freely a moister atmosphere will be beneficial. This can be secured by damping the walks and walls during the afternoon and early in the day. Do not damp down too freely at night. Keeping the syringe going upon all bright mornings, especially if a few aphids are about, has much to do towards success. As the sun gets more powerful, it will be necessary to afford a slight wash of some kind, so as to avoid the burning propensities which often injure the young foliage. Let this be weak, because Roses enjoy plenty of light. I use a weak wash of whitening and milk. This keeps up well, and yet is not too tenacious, generally being washed off by the time we need the glass clear again. More air will be necessary as summer advances, and the plants should receive a generous treatment, so as to secure good wood for the following season.

MARCELA NIEL and kindred varieties only afford us one full crop; but the dwarfier kinds, such as General Jacquemont, Catherine Mermet, and Madame Falcot will bloom freely all the early summer. After this they should be stood out-of-doors to ripen their wood. When training the climbers see that the wood is at least a foot away from the glass, or the young growths will soon be against it and be much more liable to injury from frost. P. U.

Rose "Baroness Rothschild."—This is by no means a suitable variety to grow in a cold-house upon its own roots; how, for, it

is cultivating to do so. I would advise your existing strong growth in a natural manner, and so encourage a stout shoot from the bottom. This can then be disbanded and the remaining growth cut away. I saw some plants this season which had made growth about 4 feet long, and these could easily have been forced into standards; but, as I remarked earlier, Baroness Rothschild is a most unsuitable variety, as a rule, and I would not attempt it.—P. U.

5083.—**Ross in a greenhouse.**—“Plumbago” has got in the plant of this, and provided it has been growing in a pot all the past summer—has, in fact, made the shoot he mentions in a pot—and has not had its roots seriously disturbed, it will undoubtedly bloom well and please. Do not prune it, except to remove a very small portion off of the end of its main stem. When it has flowered you may cut it back and grow on again as strongly as possible.—P. U.

5084.—**Soil for Roses, &c.**—The application of a dressing of rye for the light soil is the best thing you could do for it, and your intended way of treating it is quite right; but for the future do not dig amongst your Roses more than 3 inches in depth, and that only once a year in the winter. Do not apply any manure to the surface until the spring, and no liquid manure until you see signs of young growth being made. Manure laid on in the autumn or early winter has all its goodness washed down below the roots. When the under stratum is composed of gravel give a thick mulch of half-rotten manure after the Roses are pruned in the spring, by all means, and manure-water after the flower-buds are formed.—J. C. C.

I do not like the idea of making a soil still by using clay as a surface dressing. You would have been much wiser to mix it in previous to planting. It is at the lower part of your soil where the clay would have been most valuable, and when mixed with a gravelly sub-soil and generously manured, might have been of service. A little thought will show you it is difficult to fork it in deep enough to be of any practical use, as you would be disturbing the roots. I do not like disturbing the plants after a few weeks in their fresh quarters, especially as they are mulched and protected, but it might be a good plan to lift them, dig the whole over again, and re-plant. If done expeditiously there would be no harm, but it seems such a pity to move them.—P. U.

5082.—**Pot-Rosess.**—You have certainly kept the house too close, or in such an aspect the Roses would not be in the condition you describe. You must ventilate the house more, and over a longer time during the day. It was a mistake to cut in the small plants with a view to check growth. With regard to the plant of *Maréchal Niel*, you must have patience with it. If it does not choose to grow long enough for training, no sort of pruning or coning will make it. It was similar behaviour to this of some plants a few years ago that made some people think there were two varieties of it—a climber and a non-climber; but that has been proved to be wrong. The *Maréchal* is a persistent and disappointing Rose sometimes, and your case is not worse than many more that have come under my notice.—J. C. C.

I have not much doubt regarding the cause of your Roses being in the state you name. You probably have several other subjects in the house, and have been keeping it too warm and close during the latter part of September onwards—at least, for Roses in an unheated house. The plants should have been out-of-doors during the autumn, and only housed now as a protection from severe frost. You had better keep them inured to air and light as much as they can bear, and then prune early in January. The house you describe is suitable for Roses, but I am afraid you have overdone them too early, and will now be unable to keep frost from them during the remainder of winter. The *Maréchal Niel* will probably produce a strong shoot during the coming season.—P. U.

5068.—**Rose-hips, &c.**—Place the hips in sand until spring; keep the sand moist, but not wet. In the spring (*Maréchal*) rub the whole through a sieve in order to break up the hips, and then sow sand and seeds in shallow drills upon a prepared soil of light loam, and so on. As you probably do not need many stocks it

will be better to sow in a box or pans. Place this in a pit or frame, keep dark for a time, until the seedlings show, then admit light. They had better remain in the box two summers. You must keep a sharp look-out against birds, mice, &c., while the seeds are germinating, and against a species of land-flea when they are sprouting freely. I believe *Colvillei nba* and “The Bride” *Glabolus* to be synonymous. They increase very readily from offsets, much more so than any other *Glabolus*.—P. U.

Place the *Rose-hips* in sand now and sow in February. The *Glabolus* will increase in the usual way such hips do; but to work on a stock quick save seeds and sow in drills in spring.—E. H.

5065.—**Baking for button-hole Roses.**—You inquire for a good plant suitable for the above purpose. The *Maiden-hair Fern* you have already tried, and failed. What more can be needed than *Rose foliage*? The *Fern* you name is altogether out of taste. If you must have *Fern*, choose the *Davallia bullata* or some similar kind. I like the *Rose foliage* best, and nothing can be more beautiful or more in keeping than this. When the pink and green shoots are made up with a clean *Rose-leaf* they are perfection. The next foliage in my estimation is that of *Prunus pissardi*; this has a slight resemblance to the deep-coloured shoots of *Rose* growth. Grow a few of the *Pairy Roses*, and use their growths if you do not like to cut that of the plant the button-hole is culled from.—P. U.

No greenery is more suitable than their own leaves, adding to each a spray of *Asparagus plumosus*, which will succeed in a greenhouse, provided it is planted in a compost mainly of peat and leaf-mould. If during the winter months *Rose-leaves* are difficult to obtain, small *Ivy-leaves* are a good substitute; they are lasting and easily made up by the aid of thin bonquet-wire. Those that are coloured from the effects of the weather, such as are found growing against trees, are preferable to green ones, as they contrast so beautifully with the various tints of the *Roses*. If these are objected to, *Chloisyn ternata* might be grown easily in a greenhouse for the purpose.—S. P.

Pruning the *Maiden-hair*, a small frond of the blue *Maiden-hair* *Spleenwort* (*Asplenium Adiantum-nigrum*). This, which is really the same thing as the “*Fern*” of the florists, is a hardy British species, and may be grown easily in any cool, moist, and shady spot, or in a cold frame. A tiny bit of *Adiantum cucullatum* or of *Asparagus plumosus* as well is, however, an improvement. Another plant of which the leaves are very useful for this purpose is the old *Oak-leaved* or *Pheasant’s-foot* *Polygonum*.—B. C. R.

5077.—**Pruning a pot Rose.**—If your *Rose* is large enough to require pruning, now is the time to do it; but to tell you how to do it without knowing what sort of *Rose* it is, and how large, I cannot. As a rule, amateurs prune too much, especially when they want early flowers. If you can send more particulars about the age and size of the *Maréchal Niel* I will gladly help you, but with such scant particulars it is impossible so advise you in a way that would be satisfactory. I know plenty of plants of this *Rose* that look so unhappy that if I was asked to advise about them I should say cut them down to within 1 foot of the soil.—J. C. C.

As stated in GARDENING, on Nov. 25th, pot *Roses* should be pruned now. The style and amount of pruning depends entirely upon the variety you possess, and, unfortunately, you do not say the name of the first in your query. I will suppose it to be one of the ordinary growers; in that case, you may cut back to within 4 inches to 6 inches of where each shoot started from last year, entirely removing the weakly shoots. The *Maréchal Niel* will require a different treatment, as this grand *Rose* blooms most profusely from the long maiden growths of the previous summer, therefore the sole object in pruning is to leave as much of this growth as possible and remove the remainder.—P. U.

5064.—**Tea Rosess for button-holes.**—I find that taste differs a good deal in the choice of *Roses* for button-holes. Some people like large flowers and others small ones. William Allan Richardson, which, by the bye, is not a Tea, I find to be a great favourite. Not only on account of its colour—deep orange; but

because the half-open buds are about the right size, and when a single bud is not large enough two or three can be used. *Ma Capucine* (*Teal* and *Perle d’Or* (*Miniature*) are pretty much the same colour and exceedingly pretty. My next favourite for this purpose is *Colsete*, which appears to be as hardy as the *Dog Rose*, and if given good soil grows freely, and produces a large number of exquisitely formed fragrant flowers, which when in a half-opened state are pleasing beyond description. *Niphelous* (white) is not too large for some people. Others suitable are: *Anna Ollivier*, *Marie Van Bontte*, *Mme. Lambert*, *Catherine Mermet*, *Devonensis*, *Luciole*, *Safrano*, and *Grace Darling*.—J. C. C.

The following twelve *Roses* are as likely to do well with you as any I am acquainted with, but in smoky, manufacturing town is not an ideal locality for *Roses*: *Honore* (pink), *Safrano* (half-orange), *Mme. Fahnst* (apricot), *Sunset* (apricot and orange), *Isabella Sprunt* (pale-yellow), *Perle de Jurlins* (deep-yellow), *Niphelous* (white), *Souvenir de Thérèse* (pale terracotta), *Sigolun* (fawn), *Mme. Hoste* (leek straw), *Anna Ollivier* (peach and buff), *Mme. Cusin* (deep-rose and violet). All of these are reliable and produce a large number of neatly shaped buds.—P. U.

If you wish for dark-coloured *Roses* you cannot do better than select a *General Jacqueminot*, *Prince Camille de Rohan*, or *Charles Lefebvre*, which are all good button-hole flowers. Personally, I much appreciate these darkly-coloured, richly-fragrant varieties, although the *Teas* and *Nisettes* are more used for this purpose. The following are good *Teas*: *Luciole* (carmine-rose, suffused with yellow), *Ma Capucine* (one of the most popular of all, the flowers copper-yellow in colour), *Mme. Chelone Guimissen* (yellow), *Mme. Fahnst* (apricot, a delightful bud), *Mme. Hoste* (pale yellow), the well-known *Maréchal Niel*, *Niphelous* (white), and *Safrano* (apricot, shaded buff). Of the *Nisette* *Roses* *L’Hind* is one of the best, the flowers coppery-red in colour; a very distinct and beautiful kind for button-holes. Their flowers must be hunched together, as it is a small-flowered *Rose*.—J. C. C.

5087.—**Pruning dwarf Rosess.**—I will answer the latter part of your query first, as you should prune the plants in the unheated greenhouse at once. It may be well to remind you that none of the climbing varieties should be pruned hard—in fact, their long growths must be left entire. The plants in the open ground should be left until March or early in April. Much depends upon the season; but there will probably be a short general article upon this subject in due course.—P. U.

Answering the latter part of your question first, you may prune the *Tea* *Roses* in the house at once. Knowing your locality pretty well, I should not hesitate to prune dwarf *Roses* in the open ground in the second week in March.—J. C. C.

5054.—**Side of Climatic Jackmani, &c.**—You had better keep the seeds in a cool, dry place until next March, and then sow them in pots and raise the plants in a greenhouse. Both kinds of *Clematis* may be raised in this way, but you must have patience, as sometimes the young plants are many weeks before they come through the soil. Apple and Pear pips may be raised in the same way if you have only a few of them. When there is any quantity they are sown in the open ground in the spring, and transplanted the next year.—J. C. C.

4874.—**Definition of loam.**—The word *loam* generally implies a soil that is easily worked at any season, being sufficiently retentive yet not so much so as to hold water. *Maiden loam* is a term used often among gardeners to describe the fat earth forming the top spit of a pasture ground, and is used by them for different composts. That with a yellowish-brown colour is most preferred. Sandy loams are the easiest worked, and yield the earliest produce. Chalky loams, if the chalk does not abound too much, are early and fertile; in fact, no soil will continue good without some calcareous matter in it. Clayey loams are bad to work either in wet or dry weather, being wet and sticky in one case, and dry and cracking in the other. Fine late crops, however, are produced from such soils, especially when the surface is kept well and to prevent cracking in dry weather.—J. C. FERRISER, *Horticulturist*.

FUCHSIAS IN BASKETS AND ON ARCHES.

THE end of March and in April are good times to put young plants of Fuchsias into baskets, in order to obtain a good display late in summer and throughout the autumn. Varieties of slender habit are best adapted for the purpose, and if the shoots be kept persistently stopped the plants will form dense bushes, which will cover the bottoms and sides of the baskets, and, when suspended from the roof of a greenhouse or conservatory laden with them will form striking objects. The flowers, indeed, are shown off to greater advantage in this way than when the plants are grown in pots and trained in a pyramidal section. Good rich loam, plenty of water, and timely attention to stopping the shoots so as to obtain a dense procerbus habit at first are all the plants require to bring them to a high state of perfection (see illustration). The Fuchsia is also admirably adapted for training over an arch in any glass-house; each branch is then brought by the weight of its blossoms to display its beauty in the most effective way. No plants are more effective on arches than Fuchsias properly managed. By stopping the shoots at different heights, and training them over with some care, the entire arch may be wreathed all round with almost an equal amount of beauty. It is surprising that the Fuchsia is so seldom used for this purpose. A glass warrior arched over with Fuchsias would prove a charming addition to many gardens, costing little to plant and less to cultivate. B.



OUR READERS' ILLUSTRATIONS: Fuchsia "Belgica" in a basket. FORWARDED FOR GARDENING ILLUSTRATED FROM A PHOTOGRAPH SENT BY MR. E. GODERHORN, BELFELD HALL, NORWICH.

are Almira, Annie Douglas, Agnes Chambers, Aurora, Chrysolora, Countess of Jersey, Lillian, Mrs. Herwood, Mrs. Walford, Mrs. Whitbourn, Mrs. Robert Sydenham (the best yellow), Remembrance, and Undine. The best self-coloured Carnations are Abigail (carmine rose), Aline Newman (deep-red), Lady Gwendoline (rose), Mrs. Louise Jameson (rosy-red), Niphetos (white), Oriflamme (scarlet), King of Crimson (deep-crimson), Snowdon (white), Duchess of Teck (deep-rose), Germania (deep-yellow), King of Yellows (pale-yellow), King of Scarlets, Mrs. Muir (white), Mrs. Reynolds Hole (apricot), The Governor (blush), Ruby (bright-rose), Mrs. Apsley Smith (scarlet), Ketton Rose, White Lady (pure-white), Mrs. Fred (the best formed pure-white). Fancy varieties: A few good ones are Victory, Terra-cotta, Old Coin, Lord Rendlesham, Stalworth Bail, Madame Van Blatte, Ala Wallington. The above have yellow or terra-cotta coloured grounds variously flaked and spotted. -J. D. E.

selection would comprise Countess of Paris, a robust, free-growing kind; the flowers large, beautifully formed, and blush, almost white, whilst they are produced freely on tall, stout stems. Germania is the best of yellow, but I recommend more of this class, as the plants grow very weakly. They are most conspicuous in this respect. Hornee is a good kind, the flowers, unfortunately, rather given to splitting, but they are brilliant scarlet in colour, full, and very bright. The habit of growth is vigorous, and it is not necessary to have a profusion of sticks. Ketton Rose, rose, very free; Mrs. Frank Watts, pure white, a good grower; Mrs. Reynolds Hole, apricot colour, but there is an improvement in this not yet in the trade, with flowers that do not split so much as those of this variety; Alice Ayres, pure-white, with stripes of carmine on the petals; Mary Morris, rose-pink; Napoleon III., rich scarlet, a very brightly-coloured kind; Ruby, salmon-pink, the flowers fringed, a delightful variety where cut

loam is desired, and, of course, the Old Crimson and White Chive Carnations. These will form the foundation of a good collection, and others may be added as they appear and are worth consideration. The great thing is to get varieties with flowers that do not split. Those that burst are very objectionable, flinging their petals about in a way that is neither beautiful nor interesting. Very few Carnations, indeed, are free from this great blemish, and raisers should aim at getting kinds that do not in the slightest split their anthers. Very important also is a good stout stem to support the flower, and also ample "grass," as it is called, which, however, simply signifies growth. The flowers should also be of good decided colours, not objectionable shades of poor effect in the garden. -C. T.

5957.—Best Carnations.—A complete list of the best Carnations in all the classes would comprise a very large number of varieties; and even in garden catalogues the colours are not described. As regards the flakes, bizarres, and Picotees, the class to which they belong describes the colours. For instances: Scarlet bizarres have scarlet and maroon on a white ground, and the best in this class are Edward Adams, Fred, Joseph Crossland, Robert Houlgrave, Robert Lord, and Squire Potts. Crimson bizarres have a crimson and purple stripe or flake, and the best are Phoebe, Edward Rowan, Harrison Wier, Virgil, John Harland, and William Wardell. The best pink and purple bizarres are Harmony, Autoerat, Sarah Payne, Niobe, William Skirving, and Mrs. Gorton. The best purple flakes, flowers are flaked or striped purple on a white ground; Charles Herwood, James Douglas, Florence Nightingale, Mayor of Nottingham, Squire Whitbourn, and Mrs. Douglas (Dixon). Scarlet flakes: Alison, Cannell Junior, Miss Constance Grahame, Gregorius, Sportsman, Mutador. Rose flakes: John Keet, Lady Mary Currie, Rob Roy, Thalia, Tim Bobbin, and Rosa Mundi. Picotees are classed as red, purple, and rose, or scarlet-edged, and the best of the red-edged varieties are Brunette, Gaymède, J. B. Bryant, John Smith, Mrs. Gorton, Princess of Wales, Violet Douglas, and Thomas William. The best purple-edged are Ann Lord, Calypso, Clara Penson, Jessie, Her Majesty, Mrs. Chancellor, Muriel, Nymph, Silvia, and Zerlina. Of rose and scarlet-edged varieties the best are Constance Heron, Corielis, Ethel, Liddington's Favourite, Mrs. Payne, Miss Lee, Mrs. Diston, and Mrs. Royal Visit. The best yellow ground Picotees

— The following will be found a good selection of the best Carnations. The first-named dozen have been growing and flowering freely in the open. The last-named six are good for winter flowering. Ruby Castle (clear soft salmon-pink), The Governor (blush-white), Mrs. Reynolds Hole (salmon-apricot, shaded amber), Lord Salisbury (pure white), Alice Ayres (pure-white, centre petals delicately-marked carmine), Daniel Delworth (clear-purple), Mary Morris (rose-pink), Tom Power (scarlet-bizarre), James Douglas (purple-flake), Joseph Lakin (crimson-bizarre), Robert Council (scarlet-flake), Tim Bobbin (rose-flake), Lizzie McGowan (pure-white, deliciously sweet, free-flowering), Pride of Penhurst (yellow), Germania (causary-yellow), Winter Cheer (scarlet, shaded crimson), Saccharissa (primrose, striped and edged soft-pink), Miss Joliffe (soft-pink).—S. P. — There is now a good list of Carnations, and I advise you to get the best self varieties. There are a number of very beautiful French kinds, of which are not, I believe, in the trade, although I hope they soon will be. A very good

as I know to my cost that there are some soils in which they will not thrive, not even when the positions are prepared for them with apparently the most suitable compost.—J. C. C. 5960.—Treatment of Cape bulbs.—Crimum asiaticum is not considered to be an aquatic, and you surprise me when you say it has done so well in your pond. I should continue the same treatment, especially as you have the young ones to deprive of. With regard to the latter, they had better be allowed to remain in the pots they now occupy to get stronger; the beginning of March will be soon enough to give them more room. Are you aware that Crinum asiaticum is called the Poison-bull, which appears to refer to its possessing some poisonous character? I do not wish to alarm you, but it is as well that you should know this.—J. C. C. 5965.—Name of a Lily.—The Lily not unlike L. aureum with crimson down the centre of each petal was probably Crinum var. rubra vittatum; that is the character of this variety. There are several varieties of Crinum more or less like this.—A. D. E. — The Lily is probably L. candidum rubrum.—E. H.

with smooth leaves that can be readily cleansed in this way should be preferred, and will thrive best. Again, the plants ought always to be either removed from the room, or at any rate be covered with a newspaper or light cloth while the room is being swept and dusted, and they should also be removed, or at least stood down on the floor as soon as the gas is lit in the evening. The less gas is burnt in the room the better, and the plants will be found to thrive vastly better if only oil-lamps or the electric light are employed. Thorough draughts are very injurious to plants of all kinds; hence, whenever the window is opened it should be at the top, not the bottom. On frosty nights a double thickness of newspaper laid over the plants and between them and the glass will render them comparatively safe; but if the frost is very severe they ought to be removed farther in the room, placing them by preference on a table or stand, and not on the floor, where there is generally a cold draught, and hard frost often strikes through the flooring first. In the spring and early summer, while in active growth, most plants are benefited by being occasionally, even daily, lightly sprinkled overhead with a very fine-rosed can, small syringe, or even a brush dipped in water will do. As regards watering, the best general rule is to give none till the soil is nearly dry and the pot rings hollow when rapped, then give a thorough supply; but when in full growth and bloom most things may be kept almost constantly moist at the root, though with a few exceptions, such as *Spiræas*, *Arum Lilies*, and the *Umbrella-Grass*, or *Cyperus*, plants ought never to stand in saucers of water for more than a few minutes. When at rest in the winter keep everything comparatively dry, but evergreen subjects need more moisture even then than those of a deciduous nature. A little manurial stimulant should be given occasionally, but only while plants are in full growth and bloom, and not for some time after being repotted. Just enough good guano to colour the water, or a little Albert's manure once a fortnight is a good thing, or a pinch of sulphate of ammonia may be added to the water (½ oz. to the gallon is the right strength) every three weeks during the summer: for Ferns and foliage plants nitrate of soda is better. Rain-water is preferable to that from the rains, and if slightly sooty so much the better. Insects must be kept down by means of a little Tobacco-powder, by fumigation, only dipping in weak Tobacco-water or in an infusion of Quassia-chips with a little soft-soap. Some of the best plants for a town window are the ordinary "Geraniums" (white, scarlet, pink, &c.), and even the large-flowered *Pelargoniums* (the market and "French" kinds are the best) may be managed with a little extra care, *Fuchsias* of vigorous growth, *White Marguerites*, *Petunias*, single and double, ordinary *Yellow and Brown Calceolarias*, *Arum* (or *Calla*), *Scarboro'*, *lanatifolium*, and other *Lilies*, *Begonias*, especially *B. Weltoniensis*, and some of the older, free-flowering kinds, *Musk*, *Persian Cyclamen*, *Streptocarpus* hybrids, *Chrysanthemums* (dwarf), *Plumbago capensis*, *Chinese* and other *Primulas*, and a few others. *Roman* and other *Hyacinths*, *Tulips*, and other bulbs also thrive admirably. Foliage plants are even more easily managed, the best being the *Aspidistra*, common green-leaved *Dracenas*, *India-rubber-plants*, *Arancaria excelsa*, *Myrtles*, *Cumelias*, *Orange* and *Lemon-plants* (easily raised from seed), and such Ferns as *Pteris cretica*, *P. serrulata*, *P. tremula*, *Asplenium bulbiferum*, &c.—B. C. R.

The best plants for a window in London are the *Aspidistra lurida variegata*, the finest of all, *Arancaria excelsa*, very pleasing when small, *Pteris cretica albo-lineata*, *India-rubber-plant*; and such Palms as *Corypha australis*, *Rhapis flabelliformis*, and the handsome *Cyperus alternifolius*, must not be forgotten, this succeeding well in a moist position. It will be more necessary to take care the leaves of those plants that are leathery and smooth on the surface must be kept well sponged two or three times a week with tepid water, otherwise they quickly get coated with dust and dirt. Give water only when required, and do not let it stand in the saucers. Between window plants in towns and those in country there is practically no other necessity for different treatment than sponging the leaves more often.

INDOOR PLANTS.

GREENHOUSE DAISIES.

There are several plants with Daisy-like flowers useful for the greenhouse, and amongst the best are the *Marguerites* (*Chrysanthemum frutescens*), and I do not think that I overestimate the merits of these plants when I say that everyone leaving space for a score of plants should include them in their collection. The yellow variety *Etoile d'Or* especially is one of the few things that bloom in winter in a house which is only heated to keep out frost, and for this reason it should be valued by those who, desiring flowers in winter, have no warm-house in which to bring them along. There is scarcely a plant in cultivation that can equal this *Marguerite* in continuity of bloom; the same plants will flower uninterruptedly during nine months of the year, but this is, however, more than should be expected of them. Plants intended for winter blooming ought not to flower in summer, but should have the buds picked off until the end of September, after which time they may be allowed to develop, and will open from the beginning of October onwards through the winter and spring. Cuttings strike with the greatest freedom either in warmth in early spring or later on in a cool-house or frame, and, growing freely, will come into ½-inch pots early in autumn. In the form of bushy specimens, clothed with healthy foliage and full of bloom, this *Paris Daisy* is very attractive, but its great value lies in the fact of the flowers being so admirably suited for cutting. They are symmetrical in form, and have long, slender, but strong foot-stalks. Those who need plenty of cut flowers should grow this plant in quantity, as if kept in a constant temperature of from 50 degs. to 55 degs., the beautiful clear soft yellow blooms will be continuously and freely produced all through the dullest months of the year. Other beautiful Daisy-flowered cool greenhouse plants are the *Aretoti*, of which one of the best is here figured (*A. asperula arborescens*). Other good kinds are *A. aureola*, *A. grandiflora*, a very fine kind, *A. reptans*, and *A. speciosum*. All the species thrive well in a compost of loam and leaf-soil, and they may be easily propagated by cuttings at almost any time of the year. These cuttings should be put in in pots of sandy soil and placed in a gentle warmth. They must be kept moderately dry or they will damp off. In addition to their great value as cool greenhouse plants they thrive well out-



A greenhouse Daisy (*Aretotis asperula arborescens*).

of doors during the summer months in sunny, dry positions.

AGATHA CELESTIS has a delightful Daisy-like blue flower, most useful for cutting, for which purpose it is largely grown for Covent-garden Market. There is also a pretty variegated form of it. It is easily propagated by cuttings in spring or autumn in slight heat. It may also be raised from seeds. It is also useful as a border plant. Of course, in this short selection of Greenhouse Daisies the great merits of the

many single *Chrysanthemums* must not be overlooked, and almost any nurseryman's catalogue will furnish a good list of the best kinds. B.

FORCING DAFFODILS.

These gorgeous flowering bulb naturally blossom at a very early period of the year—in fact, they are generally known as Lent Lilies, and the season of Lent always brings some very cold weather, for no matter how mild, or how severe the winter may have been, the early spring brings cold, cutting winds and sharp frost, and it is no uncommon thing to find the blooms of the *Daffodils* bending down as if killed by cruel frost; but with the warm rays of the spring sunshine they soon recover, and stand erect and gorgeous as ever; but if protected by a glass roof, a few pots or boxes of *Daffodils* are very effective ornaments to the conservatory or other glass-houses, and anyone having some good established clumps in the open ground may with very little trouble have them in perfection by lifting the clumps and dropping them into pots, filling around them with rich soil, and giving a good watering to settle the soil firmly about them. Set them in a cold-house or frame until the roots are well established, then remove to a little gentle warmth, keeping them close up to the glass, and they will soon expand a fine lot of bloom. Pots about 7 inches in diameter are very useful for decorations, and a good clump of roots will give at least twenty large heads of bloom, and prove quite as effective as many of the most expensive bulbs in cultivation. After the bloom fades gradually harden off, and replant in the open air again; they will be little the worse for their short term of pot culture.—J. G., *Hants*.

CINERARIAS.

A FEW amateurs grow these remarkably well, while others only succeed in getting puny plants, much infested with aphid and mildew. Unfortunately they are much subject to the first of these pests; but if kept clean at the commencement it is much easier to grow them satisfactorily. It is very annoying, not to say prejudicial to other occupants, when the dozen or so *Cinerarias* which most amateurs like to have for early-spring blooming are so susceptible to attacks from greenfly. Probably only one or two subjects need fumigation, but if this is not attended to in time many others are soon troubled with the aphid. In this respect the amateur has a much more difficult task than professional growers, because his house of mixed subjects requires various treatment. One does not care to fumigate the whole house for the sake of a few plants only, and the little delay caused by this frequently has disastrous effects. Instead of fumigation prepare a little insecticide exactly as if you were going to use it for syringing purposes. Let this be in a vessel sufficiently deep to allow of the plant being dipped into it. Before dipping the plant see that all loose soil is removed from the surface, or this will make the underpart of the leaves dirty. If taken in time the unpleasantness and expense of fumigation may be avoided to a great extent, and the same solution will serve for dipping into several times, if allowed to stand in the house long enough to become of the same temperature. After dipping several plants let the solution be strained through a piece of fine muslin, when it will do very well for syringing any plants which may require it. These remarks about dipping are equally applicable to many subjects, and are worthy of more practice by the owners of mixed houses. By all means keep the plants thoroughly clean previous to blooming appearing. *Cinerarias* enjoy a fair circulation of air, plenty of light, a rich loamy compost, and to be assisted with weak liquid-manure as soon as the pots are full of roots. Should dipping be objected to it is a good plan to place the plants needing fumigation into a close box or case, as this method obviates the necessity for more Tobacco-paper or rag than is absolutely necessary, besides avoiding the unpleasant smell penetrating from the conservatory to the dwelling-house. Due consideration must be given to the amount of cubic space the smoke is to occupy, or dire results to the plants may follow. Far better have to do it twice than to overdo it once,

Finish putting all plants into their flowering pots now, and avoid too damp a temperature if still in cool pits; the loss of the lower leaves spoils their appearance. As there are often a few plants of exceptional merit, and it is impossible to preserve the same colours from seed, it may be well to close this note with a hint regarding their propagation from cuttings. As soon as the flowers are going over cut the stems down to within a couple of inches of the soil. Young growths will soon start from the base. These may be struck freely, or, better still, a little sandy compost placed around them will result in roots being formed, and they may then be removed and placed in small pots. P. U.

5063.—Aspidistras.—Even if the leaves should turn yellow through bad management that is no reason why they should split. That is probably caused when the leaves are being washed to remove dust or insect pests. The Aspidistra is one of the easiest plants to grow, and ought not to get into bad condition if planted in good soil and well drained flower-pots are used. The plant makes the best growth and succeeds best in a hot-house, but it is one of the best foliage plants to place in a dwelling-house. The leaves would turn yellow if infested with red-spider, or if the plants had exhausted the soil in which they are growing. In that case they should be broken up and repotted. J. D. R.

—This is due, one would think, simply to the leaves getting old and splitting, or it may be attributed to careless handling or being brushed against. You evidently do not treat the plant properly if all the leafage turns yellow, as the Aspidistra is one of the easiest things to grow well. Perhaps repotting is necessary. If so, give a shift into a size or two larger pot, and use a good heavy soil, with a few crocks in the bottom for drainage. So much, however, has been written of late about Aspidistras that further reference to them is unnecessary. Be careful always to sponge the leaves with tepid water at least once a week, and do not give too much water. —C. T.

Put in rather lighter soil and use more sand. In all probability this will stop the splitting and discoloration of the leaves. —E. U.

5061. Plumbago capensis.—This is a free-growing plant, and will require a shift into a larger pot in the spring, and two sizes larger will not be too much. Not only is *P. capensis* free growing and free flowering, but when it is planted out in the open border it thrives with the greatest freedom, and the more it grows the better it flowers. It is equally good as a pot-plant, and requires good loam, leaf-mould, and a little decayed manure with free drainage. —J. D. R.

—By repotting a plant of *Plumbago* in a pot two sizes larger, if the plant is well rooted, its flowering capacity should be improved. —E. U.

5065.—Dracenas.—These plants, being evergreen, ought not to be allowed to become very dry at any time, but the variegated-leaved varieties must be kept drier than the plain or green-leaved forms, as they are of a much more tender nature. Much depends also upon the temperature of the room. If a fire is constantly burning, and the atmosphere is, consequently, warm and dry, a good deal more water will be required than by a plant standing in a comparatively cool apartment, where there is little or no fire. A good general rule with plants of this nature is to give in this season just enough water to keep the foliage fresh and the soil just moist, but no more. —E. C. R.

5062.—Propagating greenhouse plants.—Early in March is the best time to insert cuttings of those plants named; even then they strike all the quicker if a little bottom-heat can be given them, placing the pots at the same time under a hand-light or in a propagating-case, where air is excluded from them. The light should be removed for an hour each morning to dissipate condensed moisture, which settles upon the glass during the time the frame is closed. If attention is not paid to this detail the cuttings will be liable to damping. —S. P.

—Early spring is the best time for this work, and the cuttings may be easily got from old plants placed in gentle heat to stimulate growth. Cut off the shoots just under a joint, and insert singly in small pots filled with light soil, or several together round the sides of 48 or 5-inch size. When ready to put in a pot, they should stand in a warm greenhouse. Give no air

at first, but as they get established more may be admitted. If you make up a hot-bed in the spring the cuttings may be struck upon this, and it will also suffice for raising seedlings and various other purposes. —C. T.

—The large-flowered *Pelargoniums* are usually propagated when the plants are cut down after flowering about the middle or end of July; but cuttings may be taken any time when they can be obtained. *Adiantums*, *Zonal Pelargoniums*, and *Fuchsias* may either be propagated in August or early in spring. I generally propagate at both seasons. —E. U.

COOL GREENHOUSE PLANTS.
Climbers.

Two capital cool greenhouse plants are *Celsia cretica* and *C. Anatanus*, an evergreen and herbaceous in habit. The latter can be raised from seeds sown in spring in an ordinary hot-bed or greenhouse, and when large enough potted off singly and grown on with greenhouse-treatment, and it will thrive well in either a peat or loam compost. It bears yellow flowers during spring or summer. *Celsia cretica* (here figured) may be treated with success in an almost similar manner, and it may also be used as a half-hardy annual in the open ground in good soil in summer. These *Celsias* are occasionally attacked by thrips, and should then be carefully fumigated with Tobacco; and during



Cretan Malva (*Celsia cretica*).

the summer syringe the foliage on the underside to keep down red-spider. Manure-water is useful when in active growth. B.

5080.—A small greenhouse.—Ferns and foliage plants, such as *Aspidistras*, *Dracenas*, the hardier *Palms*, *Plumum tenax*, *Ardia Sieboldii*, &c., will certainly thrive best in such a shady structure, though in the height of summer ordinary "Veranims" will bloom and last longer than in a sunnier position, and *Fuchsias*, *Begonias*, and a few others would do well. *Camellias* also are nice plants for a shady house. In the way of climbers, nothing will thrive so well as *Lapagerias*, white and red, and *Ficus repens*, clinging to the wall. No use to try *Roses*. —B. C. R.

—The most suitable creepers are the Red and White *Lapagerias*. Plant in a good, well-drained bed of peat, with a little turfy loam, and a few bits of charcoal. The general furniture of the house should be Ferns and foliage plants, but flowers may be had in summer. It will be better to trust to such things as *Fuchsias*, *Tuberous Begonias*, and those plants which can go to rest in winter. *Gloxinias* may do very well in summer. —E. H.

—You will not be able to do great things in the conservatory as it is so dark, but Ferns will eat largely into the selection, such kinds as *Adiantum cuneatum*, *A. decorum*, *A. gracillimum*, *A. Victoria*, *Asplenium bulbiferum*, *Utricularia gijensis* (the two last-mentioned in pot) being best adapted for hanging baskets. *Sepholopis exaltata*, a good Fern for a basket,

Ouychium japonicum, *Pteris erecta* *albo-lineata*, *P. c. Mayi*, *P. cristata*, *P. tremula*, *P. t. Smithiana*, and *Selaginella Kraussiana* and its golden-leaved variety. Two good creepers or climbers are the *Maréchal Niel Rose* and *Lapageria alba* and *L. rosea*, which bear white and red waxy flowers respectively. A good pot-bed must be made up for these, and the rising shoots each protected with a lump-glass, to prevent slugs devouring them. *Pelargoniums*, zonal and French varieties, *Fuchsias*, *Cyclamens*, Chinese *Primulas*, *Cinerarias*, and such *Primulas* as *P. cheucica* and *P. floribunda* may also be mentioned. At this season it might be furnished with the *Henth Erica hymenalis*, *Eperis*, the *Winter Cherry* (*Solanum capsicastrum*), and various forced bulbs, as *Tulips*, *Hyaucints*, *Daffodils*, and *Crocuses*. Other things may be added, as *Eupatorium riparium*, *Lily of the Valley* (forced), and later on the yellow-flowered *Cytisus racemosus*, *Deutzia gracilis*, *D. crenata* &c., *Spirea japonica*, *Azaleas*, and *Amuda japonica*, getting well-ripened plants. Mix with these such plants for their foliage as *Eranthis* in variety, *Erythra latifolia* variegata, *Coronilla glauca* variegata, *Aralia japonica*, *Yuccas*, and *Lammas*. None of the plants mentioned are expensive. —C. T.

5023.—A new greenhouse.—A width of 8 feet only is not much in which to group plants effectively and allow for a local pathway as well. On the whole, I think the best plan would be to make a narrow border, 1 foot or 18 inches in width, at the base of the back wall, and plant therein *Camellias*, and perhaps a few *Oranges*, *Plumagos*, &c., to be trimmed on the wall, with some dwarf plants, such as *Primulas* of sorts, towards the edge. Then over the pipes along the front of the house have a simple habler stage, low, and consisting of not more than two or three wide shelves on which to stand plants in pots, the larger ones behind, and the smaller and dwarfer ones in front. If this is considered too stiff, the staging may be dispensed with altogether, merely standing the plants in more or less irregular groups, on the floor itself. Such plants as *Camellias*, *Myrtles*, *Azaleas*, *Spartanum atrienna*, *Fuchsias*, ordinary "Veranims," *New Zealand Flax* (*Phormium*), *Senecios* and other Lilies, hardy (green-leaved) *Dracenas* and *Palms*, *Ardia Sieboldii*, hardy and cool house Ferns, will be most suitable for such a structure, and for the majority, large plants will thrive better, and need less care than small ones. —E. C. R.

5066.—Fuchsia in a greenhouse.—Repot the *Fuchsia* in February, or, better still, plant it in the border in the greenhouse, and the arch of glass be erected. —E. H.

Solanum and Poinsettias.—*Tombidge Wells Chrysanthemum* Shaw is remarkable for the grand specimens of these useful winter plants. I do not know which are exhibited in the greatest perfection, both being wonderfully well-grown. A good *Solanum capsicastrum*—sometimes called the *Winter Cherry*—is one of the most showy winter-berrying plants grown. Punctilious due attention is afforded in keeping them well supplied with water while growing, few insect pests attack them. They like rich soil, and a further aid of liquid-manure is beneficial. If once allowed to suffer for water, or half starved, they never present the same pleasing appearance until another season. An ordinary greenhouse temperature will grow this *Solanum* well; but the *Poinsettias* need a moist stove atmosphere during certain stages of development, and come with much brighter hues in fairly strong heat. —P. U.

Calceolarias.—Where these have been struck in cold frames or pit, considerable judgment is necessary to carry them through an extra severe or a mild and wet winter. In case of the former, lay a mat or a few old sacks over the frame, and do not open until the frost breaks. Should it be sufficiently severe to freeze the soil the cuttings are in, the steadiest they are allowed to thaw the better will they come through the ordeal. During all open weather admit a little air, and if mild, remove the lights for a short time during mid-day. Coddling, too much wet, and not enough air upon suitable occasions are the chief causes of failure with these. If you can tide over the sharpest part of winter, March and April will be their making rapid growth, when they should be gradually injured to full exposure, so as to secure stout, hardy plants. —P. U.

FRUIT.

NOTES ON HARDY FRUITS.

PRUNING PEARS.—Those who have not commenced this work may now do so, and persevere with it whenever the weather permits, or otherwise there will most probably be too much to do in the spring for all to be properly performed. The start should be made with Pears, and if there is not a mulching of ashes or strawy litter in front of the trees, let boards be used for standing upon, unduly trampling upon wet fruit borders having a most injurious effect. In the case of strong, well established trees, and which, say, have covered nearly or quite as much wall space as they will ever do, pruning is a very simple operation. It is these trees, however, that very often are too lightly pruned. If owing to a too sparing use of the knife the spurs are allowed to project 6 inches or more from the main branches, then much of the benefit that ought to be derived from the walls is lost. The fruit spurs ought to cluster round the branches and spring out not more than 3 inches from the wall, and in consequence be less liable to injury from frosts, the fruit also attaining a larger size and ripening better. Trees largely furnished with long, ugly spurs ought to either have these gradually sawn off to within 1 inch of the branches or else foreshortened to a back break much nearer the wall. In most instances this would be duly followed by a strong break of young shoots and fruit spurs, and which the cultivator should take good care to keep more within bounds in the future. Supposing the trees were summer pruned, spurs being left to a length of about 2 inches, the latter ought now to be further reduced to a length of 1 inch, in some instances, or where short spurs already exist in goodly numbers, to be cut quite hard back. Nothing is gained by crowding the spurs; therefore thin out where they smother each other when in leaf. If fruit-buds are scarce, leave some of the short shoots there may be with a fruit-bud at the end intact, cutting these back after the fruit has been gathered from them next season. Where there are any strong shoots available for furnishing blank space, lay these in to their full length. Ordinary shreds are of little service in securing strong Pear branches to the walls, those made of Bedford cord, buckskin, leather, and other trimmings being far more durable. Wrought-iron nails are also preferred to the ordinary brittle cast-iron wall nails.

YOUNG PEAR-TREES.—More judgment has to be exercised in the treatment of these. It is possible to be too free with the knife when pruning these, though not when the spurs are operated upon. For reasons already given, all single growths not required for laying in should be freely cut back to a bud within 1 inch of the branches, the aim being to cause a good break next season. Where this was done last winter thin out the shoots resulting if at all crowded, leaving any which promise to develop fruit-buds to their full length and the wood growths 1 inch long. Older spurs should be treated as advised in the case of old trees, unhesitatingly foreshortening any that come out too far from the wall. All those horizontally trained should have the leading growths laid in to their full length, the only exception being the central growth. The latter should be shortened to a well-placed bud three courses of bricks from the last pair of side branches, and next summer it ought then to be possible to select and lay in two more side shoots and a central one for extending the lead upwards. Also freely shorten the leaders of fan-shaped trees wherever more branches are required for furnishing blank space. It is a mistake to shorten the leaders of cordons generally, unless very small and one or two more growths are required for laying in. If the young shoots are pruned at all, it must be done rather severely or to about one-third of their length, or the chances are the lower parts will be naked. Not pruned, they will break regularly throughout their entire length, and a fair percentage of the breaks may develop into fruit buds. Young trees swell very rapidly; therefore remove all old shreds that pinch or unduly press against the bark. Horizontally-trained trees in the open and also cordons should be treated much as advised in the case of wall trees. Pyramids and standards should be pruned similarly to Apples.

APPLES.—More of these are grown against walls than formerly, especially where extra fine exhibition fruit is desired. Horizontally-trained, fan-shaped and cordon trees should be pruned as recommended in the case of Pears, the advice to keep the spurs well back to the branches in particular being acted upon. Very fine fruit is frequently borne on the points of short shoots, and all these, therefore, should be closely examined before cutting them off. The topmost branches on espalier-trained trees are very apt to become the heaviest, a thicket of spurs quite smothering those on lower branches. Keep these within bounds on the younger trees, and freely thin out the spurs on older trees. Till the trees are well formed it is advisable to keep pyramids carefully staked upright, the leader also being kept straight. Shorten the latter to about one-third of its length; this will lead to the formation of more side shoots and a fresh leader. Side branches should be shortened back if more shoots are required, otherwise they had better be left to their full length, only those not required for furnishing being cut back to a length of about 1½ inches. Young trees kept hard pruned require to be root-pruned rather severely in order to bring them into a fruit-bearing state; whereas those allowed to develop more naturally seldom require this treatment. Pears are more easily grown in a strict pyramidal form than are Apples, but varieties differ considerably in their habit of growth, pegs and rat twine being frequently used for bringing some of the branches down to a more horizontal position. Bush-shaped trees are the most easily trained. Cut out the leader of a pyramid as received from a nursery, and allow the side branches to grow more upright. The latter would soon commence bearing fruit if not pruned, but in some instances would not be stiff enough to support a heavy crop. This difficulty can be got over by using a few stakes, or if preferred the branches could be pruned to about half their length and allowed to extend more gradually, being stouter accordingly, but they would be much slower in coming into bearing. Keep the centres of all the trees, whether young or old, open, thinning out the branches where they cross and mutually shade each other, most of the lateral growths being freely cut back. Trees that are large enough and in a fruitful condition should have all leading branches cut hard back, but where hard pruning is constantly followed by thickets of wood growth, leave all the best placed young shoots, and early productiveness will be the result. Leaving young shoots to their full length thinly all over either unproductive or stunted old trees will put new life into them, that is if there is any such thing as accomplishing this. A considerable number of large old trees there are of varieties not worth growing, and these ought either to make room for young trees of superior sorts, or else be headed down and regrafted.

W. I.

THE MOST POPULAR PLUM.

If the truth could be arrived at as to which is the most popular Plum in cultivation the verdict would be given in favour of Victoria. No other variety possesses so many good qualities as this fine old Sussex Plum, and it is very certain that it has been by far the most extensively planted during the past ten years, or, say, since the fruit-planting fever has set in. It is a veritable rent-payer. While the other varieties are growing into larger and serviceable trees the Victoria is producing enough fruit to help, if not to wholly meet current expenses. In common with other early and heavily productive fruits, trees of Victoria rarely attain a large size, nor are they ever likely to do if allowed to bear as much fruit as may set on them. In the orchards it forms a medium-sized, somewhat spreading standard, and for this reason, and also from the fact of its precocious habit of bearing, it is just the sort to plant in rows midway between varieties and kinds that attain a much larger size and are slower in coming into full bearing. It is as low or medium height standards that this variety should be grown, the habit of growth not readily lending itself to bush or pyramidal training. The Victoria is also well worthy of a place against walls of any moderately warm to comparative cool aspect, a long succession, lasting, say, from the middle of August till the middle of September, being had by varying the sites of the trees.

As a poor man's Plum it has no equal, and if landlords are called on or feel disposed, as I maintain they ought to do, to provide the poorer tenants with fruit-trees, a trained tree of Victoria for the cottage walls and a standard for the open should be among the first selected. Hereabouts the trees seem to thrive fairly well everywhere, in moderately strong loamy soil evidently suiting the variety. It is not particular, however, as to soil, only the trees ought not to be impoverished at the roots, or an early failure is inevitable. Overcropping is the mistake most often committed with this variety. If there is any fruit at all, and it is not often it fails, this is almost certain to set in great clusters. The fruit ought to be early thinned out, this operation being rather severe if the crop is heavy and should not be delayed till the natural process or premature dropping commences. One thinning is not enough. When the Plums are changing for ripening some ought to be used in pies, and when embouring, a heavy thinning should take place, the fruit then being quite saleable and fit for making into preserves. Not being overlaid, the trees will swell the reserved fruit to an extra large size, the quality also being far superior to that of fruit gathered from heavily cropped trees. Fully developed, well-ripened Victoria Plums are really quite good enough for dessert, and will always sell readily.

11.

BIRDS VERSUS FRUIT-BUDS.

At this time of year a great many small birds are destroyed with a view to the protection of the buds of fruit-trees, but I question whether a good many of these supposed feathered foes are not really the friends of the gardener. I have lately watched both tom-tits and sparrows busily engaged on fruit-trees, but certainly they did not hunt the buds, but were picking off insects and the eggs of various kinds of pests that prey on fruit-trees. The tits were especially active in searching about the shreds and fastenings of the fruit-trees where either insects or their eggs were apparently safely hidden away for the winter, and where it would be difficult to dislodge them by any other means. Sparrows are unfortunate in having a very bad name; certainly they do some mischief at times, but I think they do a deal of good at times as well, as during the past summer I noticed them frequently hanging to the tips of the shoots of fruit-trees picking off green and black-fly, and carrying them away to their young ones, and the quantity a few birds would clear off is incredible, and doubtless we should have suffered a good deal more than we did from insect pests during the drought if birds had not come to our aid. The Bullfinch is, in my opinion, the worst enemy we have to fruit-buds, as they come out of the woods in winter and spring, and pick out the flower-buds in a wholesale manner, and unless checked will soon destroy all chance of a crop, and with fruit-bushes they spoil the buds entirely, as they leave the centre clear of all growth, and only a few buds at the tips of the shoots that are really useless for making a crop of fruit or shoots for future crops, and in the winter they work much more quietly than in the spring, when they make a piping noise, and anyone valuing their fruit-trees should keep the Bullfinch at a distance, but rather invite the other birds.

J. G. H.

Staking fruit-trees.—I have seen many market plantations of trees which have been left unstaked, and I have never found that any good results followed. In most cases the stems become unduly warped, the buds lopsided or injured, and the whole plantation has worn a very wretched aspect. The old notion of planting deeply to secure for the roots a good grip of the ground, trampling in on them several inches of soil, and making it as heavy and hard as possible, is happily an exploded one. It is far wiser to plant comparatively shallow and give the tree proper support than to trust to such methods. Happy are those planters who have at command a large quantity of stout Ash, Hazel, or Larch stakes to make into tree supports. These, if sound and new, should endure at least two years, by which time trees will have secured good root-hold of the soil. If these be properly pointed and smoothed off at the bottoms, their forcing into the soil can

hardly be productive of harm to the roots. It is best to have the stakes a couple of inches from the stems, so that the ties may be rather loose, and have for the first year, to wedge them slightly, a wad of hay or Grass. The leads in that way secure a little play—indeed, quite enough for motion without inducing friction. —A.

A "Morello" Cherry.—This variety is so often grown on walls and on northern aspects that it is only of late years any attempt at growing in quantity in any other form has been made. The Morello does well as a bush or standard, and one great advantage it possesses over sweeter kinds is that birds will not attack them so long as they can get other food; they also sell readily, and, unlike many other fruits, they will keep, so that when there is a glut of other fruit Morello Cherries can be kept and sent in as required. To the market gardener and private grower this fruit is of great service, as when well ripened and nearly black they sell readily late in the season as dessert fruits. When grown as bush trees Morello Cherries are readily managed, and may be placed between other taller trees if not too much crowded. As a standard the Morello is equally useful, but not so easily gathered, and is more liable to injury from rough weather, wet, and early autumn frosts, which crack the fruits and render them useless, so that the bush form has much to recommend it, and is preferred by large growers. Kentish Red is also useful grown as a bush, and is valuable for nets, or preserving, or for using before the Morellos are ready. When the Morello is grown in this form, thinning of the shoots should be attended to during the summer months, as this greatly improves the size of the fruits and allows those left to get well ripened by exposure to the sun. When grown in bush form, small birds attack them they are readily netted, if kept of moderate size. —G.

Peaches in pots.—I have often observed in the case of pot Peaches that the bloom buds fall early, leaving a very thin set of fruit. This failure was ascribed to various causes, but I am disposed to think that sufficient water is not given to pot trees in the winter, the presumption being that with trees at rest water is hardly essential to existence. And yet Peaches go to rest just as much when planted out in the open ground, and, as a rule, whilst so at rest obtain naturally the chief of their water supply. If that be so, is it not very probable that with the roots comparatively dry in the pots for several weeks the buds must necessarily suffer? To have kept the roots moist would have kept the buds p. uup. —A.

GOOD LATE PEARS.

THERE is an abundance of good mid-season Pears, but when you come to the really late keepers there are not many reliable kinds, for all Pears do not flourish in our locality, even though it be a favourable district as far as soil and climate grows, for we can grow the majority of Pears here with little trouble, but certainly some of the late sorts are by no means satis-

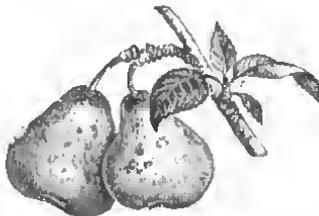


Fig. 1.—Pear "Josephine de Malines."

factory. The following are the best with me—viz. :—

JOSEPHINE DE MALINES (Fig. 1) with me grows freely and crops regularly, but not very heavily, the fruit being clear-skinned and handsome, and of good flavour, and is quite as good from open bush-trees as from wall-trained ones.

BERBRE RANGE (Fig. 2), a fine, old variety, attaining a good size, and greatly benefited by wall culture. It is of a russety green, changing to yellow when ripe, and is very sweet and juicy.

CHAI MONTE, one of the most regular and free-

croppers of any Pear, requires thinning for the fruit to attain a good size. It is of a peculiar and very agreeable flavour, and does well in the South of England as a standard or bush-tree.

KENTISH MONARCH, one of the best of winter Pears, requires a wall to do it well. Its greatest fault is that of casting its fruit during the growing season; gives a long succession of ripe fruit.

NE PLUS MEURIS (Fig. 3), a very free cropper, the fruit rather small, but a reliable sort.

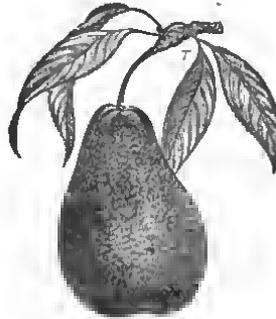


Fig. 2.—Pear "Beurre Rance."

The crop needs thinning, as it sets in large clusters.

WINTER NEALS, a rather weakly grower, but free cropper, and the fruit of the finest flavour; requires a wall, even in the south of England, and well repays good culture. A russety Pear.

GLOR MONARCH.—This is one of the best of late Pears, especially after a warm season like the last summer was. It is now probably the best flavoured Pear brought into Covent-garden Market. It is a free-bearer and does well in moist soils, excepting those that have cob clay beneath.

J. Groom, Gosport.

5000.—Treatment of Cherries.—If the Cherries are meant to be trained in the usual fan shape they must be cut down to within half-a-dozen buds of the base, and from these buds shoots will be produced next spring that will form the future fruiting-branches of the trees. They must be trained to stakes during the summer, so as to keep them in the exact shape needed for the wall, as it is in the proper laying of the foundation of the tree that its future qualities will depend. An evenly-balanced head of shoots is of the greatest importance to a wall-tree. —J. G. H.

5084.—Pot Vines.—If the Vines are strong and well-ripened they ought to carry a few bunches of fruit. Although the length is not always a criterion as to what they are capable of doing, cut back now to 6 feet, and keep inside, but do not let the roots get dust-dry. As they are not to be forced, and if they are Black Hamburghs, or some other free-bearing variety, they will probably show half-a-dozen bunches or so. The Vines may be top-dressed just previous to starting, mixing a little of Thomson's Manure or some other good artificial with the turfy loam. The Patent Silicate Manure I have used for Vines in small pots with good results. As soon as the Vines get fairly into work, and the bunches have shown, enclose the pots in wire netting and fill the netting in with rich compost—i. e., place each pot in a heap of rich compost, and encourage the roots to make out to feed. Pot Vines must have plenty of enrichment, and it is better to give it in this way than to deluge the soil in the pots with strong liquors. —E. H.

I would not shorten the rods more than 1 foot, not that you want the whole of the remaining length to furnish bunches of Grapes, but because the more eyes you have on them, the more leaves they will produce, and the more leaves you can secure the larger the bunches of Grapes will be. You had better shorten back the rods at once, and stand the pots on a cool floor or border, and during the winter keep the soil about the roots regularly moist. When you see indications of the eyes starting into growth in the spring, place the pots up to the light, so that the rods can be trained 14 inches from the glass, but until the shoots appear leave them (the rods) in a horizontal position, even if the end of the cane is below the rim of

the pot it is better than being above it, as the buds will break more regularly for the rod being so placed. Allow all the bunches to remain until you can see which is the largest, and then remove all but six on each Vine. Water the roots moderately at first, and as soon as the berries are formed give liquid-manure regularly, and sufficient each time for it to run out of the bottom of the pot. At this time you should also stand the pots on pans or shallow boxes filled with good rotten manure, and at the same time pile up a layer of manure on the top of the pot 3 inches thick. Some growers place a zinc band round above the pot to confine the manure, others use pieces of slate. In any case, stimulants of some kind the Vines are bound to have, or both bunches and berries will be small. You will have to give them water twice a day in very hot weather after the berries are formed, and do not be tempted to leave a greater number of bunches than I have named. —J. C. C.

Cut the rods back to within 5 feet of their base any time this month. From this length of rod half-a-dozen bunches may be taken next year, and especially if the Vines are not forced. Pots 14 inches in diameter should be employed, this size affording ample root space. A compost of loam and partly-decayed horse-manure—three parts of the former to one of the latter. Add to this finely-ground bones at the rate of one quart to every bushel of the compost. Pot firmly any time during next month. From now until then place the Vines out-of-doors in a sheltered position, protecting the pots from frost. —S. P.

5066.—A vinery border.—As the Vines are planted outside, it is not likely there are any roots inside. If there be, I should say do not crop with anything else. This may be easily ascertained, and in any case Tomatoes might be grown in boxes or large pots if they will get light enough under the Vines, as in summer they are frequently so grown in vinerias. I should be disposed to plant the Tomatoes in pots or boxes trained to stakes, and then in July take them outside to ripen; this will relieve the vinery at the time when, if left in, they might do harm, especially if disease should attack them. I always think by July, at any rate, if the Vines are worth anything at all they should have the house to themselves. —E. H.

If the roots occupy the whole of the inside border they ought not to be interfered with by planting other subjects in the same, because the Vine-roots ought to be close to the surface for the benefit of the Vines. If they are there nothing could be grown on the border with satisfaction. Besides, if Tomatoes, for instance, were planted on the border, the Vines growing above would rob them of all light. It is impossible to cultivate Tomatoes in such a position as this with any prospect of success. If the border is not occupied by the roots of the Vines, the outside border being large enough to afford sufficient space and nutriment for the Vines, there is no reason why such things as Winter Lettuce or Cauliflowers may not be pro-



Fig. 3.—Pear "Ne Plus Meuris."

ected during the winter by rigging them up and planting the roots in the border. By planting Potatoes at Christmas a crop of early tubers might be got off if the Vines are brought into growth slowly afterwards with the aid of solar heat only. —S. P.

Planting a few Tomatoes on a vinery border would not do very much harm, even if the roots were inside; but if the Vines, and consequently the roots, are outside, they could not do any harm. If the roof is covered with vine-leaves, the Tomatoes would not do much good. —J. D. E.

RULES FOR CORRESPONDENTS.

Questions. - Queries and answers are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of GARDENING, 57, Southampton-street, Covent-garden, London. Letters on business should be sent to the Publisher. The name and address of the sender are required in order to enable us to return the paper if it is not used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, notes, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appeared.

5102. - Japanese Chrysanthemums. - Will someone tell me the names of the purest-red Japanese Chrysanthemums? - H. M. P.

5103. - Scale on Ferns. - Would someone kindly tell me how to destroy scale on Ferns and how to prevent it coming, if it can be done? - J. W.

5104. - Size of Tomato-house. - Will someone kindly inform me the best size for a Tomato-house, more especially as regards the height? - ASSISTANT G.

5105. - Lillium Kramerii and auratum. - Will somebody tell me how to plant the above Lillies, and how many in each pot, &c.? - G. H. HILLMAN.

5106. - Creeper for a greenhouse. - Will someone name a good creeper for a small greenhouse (warmed), not too luxuriant, the space being 12 ft. x 8 ft.

5107. - Grafting a Cherry-tree. - I have a large-sized tree, which bears only small fruit. Will someone please inform me when to graft this? - F. T. SUDWELL.

5108. - Single Chrysanthemums. - Would "E. M." give me a few hints as to the general culture of single Chrysanthemums for the production of plenty of bloom? - B. B.

5109. - Growing Mushrooms. - Will anyone kindly tell me how to grow Mushrooms, as I want to send the paper on to a friend of mine in America who has begun gardening? - W. G.

5110. - Plants in Rhododendron-bed. - Will anyone kindly tell me what flower or flowers will grow in peat-beds with Rhododendrons? I want to furnish my beds. - KEENE.

5111. - Oypthomandra betacea. - Will anyone give me any information of the fruit? viz., as to its adaptability for a town garden, &c. It requires to be grown in heat, and if easily grown? - SMITHSON.

5112. - Acahypha macrophylla. - Will someone kindly tell me how to treat this plant? I have got it in a greenhouse (heat about 45 degs.), and all the leaves have withered and fall off. - CONSTANT READER, "Purley."

5113. - Sun-dials. - What is a good book on sun-dials besides Mr. Olry's? If with illustrations so much the better. And where is the best place to get a sundial? I want one to stand in the middle of a small lawn. - A. A.

5114. - A forcing-house. - I propose erecting a forcing-house, three-quarters span, 30 feet long, 10 feet wide, 11 feet high (on 2 feet 6 inches x 3 feet walls), and shall be glad to know which boiler is best for heating it? - T. W.

5115. - Rooting cuttings of fruit-trees. - I should be thankful for a few hints on rooting Cherries, including Forester Wood, Baronne Provost, Morella, May-duke, Knight's Black, also Pear-tree cuttings? - LEA SONS, Dublin.

5116. - Moss Roses. - I wish to make a bed which has pegged-down Moss Roses bright in the spring and autumn. For next spring I have put "Clary of the Snow" through the bed. Will they hurt the Roses? - TRUSSARDI.

5117. - Treatment of Agapanthus. - Mine do very badly. I have had the plants about four years. They are alive, but have made no progress. I have them in a round-house at 45 degs. to 55 degs. What course shall I pursue? - E. H.

5118. - Begonia-seed. - I shall feel obliged if someone will tell me what time Begonia-seed should be sown? - If on bottom-pan, or in a rool frame, and general treatment of plants from seed up to blooming them out-of-doors next summer? - BELFAST.

5119. - Pompon Chrysanthemums. - Can Pompons be obtained in a few hints on raising Chrysanthemums which are large and round like a ball, but the petals more like Japanese. Will someone please tell me the name of these? - B. M. P.

5120. - Beet Raspberries. - Will someone kindly give me the names of two of the best varieties of these, best croppers, and for general purposes, suitable for the North of Ireland? As I only grow about forty stools two kinds will be sufficient. - BELFAST.

5121. - Peat-Moss-litter. - I use Peat-Moss in my stable. For what can I use it with advantage in my garden after it has served its purpose in the stable? Is Peat-Moss non-conducting material suitable for plunging pots into in a cold frame? - H. S. B.

5122. - Dressing for a tennis-lawn. - Will someone kindly say if it is safe to use "root" or "lifter" for the top-dressing of a tennis-lawn? The soil is not of the ordinary black loam, but is quite brown, as it is mixed with iron, and I am afraid to use it on grass? - SOUTHERN.

5123. - Tuberous Begonias. - Will someone kindly advise me on the treatment of Tuberous Begonias? I bought a few tubers last week, and do not know whether I ought to put them now or leave them till the spring, and as they are marked a very choice I am rather anxious about them. - HENRY H. MINDY.

5124. - Chrysanthemums for South Africa. - One of my neighbours wishes to send some Chrysanthemums to South Africa, and I should feel much obliged if anyone would tell me how they should be packed, and when they should be sent, and also whether plants or rooted cuttings are best for the purpose? - A. H. M.

5125. - Planting a Vine. - Will anyone tell me when to plant a Black Hanburgh Vine? It was three years old and in a 12-inch pot. It flowered this time, but did not fruit. I want to plant it in a tub 3 feet across, and 2 feet deep to be grown in a cold house. Any hints on growing it will oblige? - W. G.

5126. - Espalier fruit-trees. - Will anyone kindly give me instructions for making wooden Espalier frames for fruit-trees? They are to be raised in square plots of ground to separate the flower-border from the vegetables in the centre. I want them to form an ornamental screen, and incline to have them painted. - A. A.

5127. - Monarda didyma and Tiarola cordifolia. - Are these plants difficult to grow, and do they object to some soils? I have purchased plants of them in autumn and in spring, and on both occasions they have died down, and never reappeared. Perhaps the soil was not soot them? Will they grow from seed? - ST. S. FLOWER.

5128. - Crochids for a cool greenhouse. - I should like to have a few Crochids in my cool greenhouse. I cannot find any except the ones I should be most obliged if anyone would name half-a-dozen of the cheapest sorts, and where to get them? I thought about buying them next February. Locality, Jamaica-street, London, E. - H. J. H.

5129. - Planting Tea Roses. - I should be pleased if some reader would kindly inform me which would be the best time to plant Tea Roses? I have a few of H.P.'s that have done very well. My garden faces south, and is pretty well sheltered. What soil would suit best? I have one part rather heavy, and the other part rather light soil. - NORTH LAMINGTON.

5130. - A north wall. - I have a bare wall facing north, near a pasture where cattle and horses are turned out all the year round. Can anyone recommend a fairly quick-growing evergreen creep or other plant which will cover my wall, and which will not trumpet with? If suggestions are limited to try, which try is the quickest growing? - H. S. B.

5131. - Large Tomato. - Will someone kindly give me some information about a Tomato named "Losa Pimberosa"? It is described to me as being 12 inches in diameter, and shown during the last summer in Kent. I should be glad to know something more about this peculiar fruit, and I desire many others of your readers would also. - J. H. T.

5132. - Forcing Strawberries. - I have about 200 Strawberry-plants for forcing. They are well rooted and have got good crowns. I have just taken them in winter glass. Will someone kindly tell me when is the right time to set the fruit? I can hold some fancy prices can be made if they can be got at the right time. I have got a good forcing apparatus. - AMSTERDAM.

5133. - Roses for an arch. - Will someone kindly tell me the best Roses (Perpetuals) to grow over an arch made of wire, which surrounds my door? I have already a Floire de Hesse growing on one side of the arch against the wall, and Waltham Climber No. 1 on the other side, and want something for a contrast with these. I prefer a compact-headed Rose rather than a very open, loose flower. - S. J.

5134. - Outdoor Chrysanthemums. - When is the right time to take cuttings from outdoor Chrysanthemums? Should they be cut down after flowering? How long can they be cut down in the summer to prevent them growing very tall before flowering? Kindly give reasons. Should the cuttings be taken at the roots or otherwise, and should old plants be transplanted after a few years? - M. C.

5135. - Early vegetables. - To last year vegetable fit for use in January, February, and March, what are the best kinds and hardest to sow, and when should it be done? I sowed some Calabages and Cauliflowers in April, Sutton's Earliest and Knight's Cauliflowers. The Calabages are after about two months, and Cauliflowers also. Would some practical reader advise and put me right another year? - IRISH SAXON.

5136. - A border of Gazanias. - I have a border of Gazanias which are still in bloom. Up to last week they were in full flower, but the sharp nights of the 1st and 2nd last, cut them slightly. They are still, however, quite gay, and have been in bloom ever since June. I may add that we have had many frosty nights this autumn, and that though I live in Devonshire the climate here is cold, and the border the most exposed in my garden. Is this flowering not rather unusual? - B.

5137. - Culture of Seakale. - I should be very glad of a few hints on this matter, as I am thinking of making a bed? When is the proper time for planting it? And the best aspect for a bed? When might I cut from it? My soil is rather heavy, with a clayey subsoil, and I have been told that it thrives best in light soil. Would plenty of root-scrappings improve it? Does it require deep cultivation and any manure at planting? What would be the right distance from row to row, and from plant to plant in the row? - LONDON.

5138. - Chrysanthemums in the open ground. - Will someone recommend me a list of good Chrysanthemums for growing entirely in the open ground? I knew a garden that was quite a sight in autumn with outdoor Chrysanthemums, but the present gardener, preferring to grow under glass for exhibition, has lost them all, and can give me none. Some good yellows and reds wanted especially. Should I grow from cuttings or strike now, and plant out in spring? Please advise. - LONDON GARDEN.

5139. - A garden pit. - I am having a brick building in the garden, 24 feet long, by 6 feet wide, with slights for

growing Cucumbers and Melons in summer, and for keeping "Grenium" cuttings and of other hardy things in or the winter. I have a forwarding material of any sort, so that I must entirely depend on either a set of hot-water apparatus. I should be very much obliged to "J. C. C.," "B. C. R.," or any other person who would kindly let me know how to make this pit properly, and also how to heat it? - THAMES.

5140. - Treatment of a Lemon, &c. - I have a Lemon growing in ainery which will only be heated slightly during the winter to keep out frost. The Lemon is full of mealy-bug and scale and sickly. I intend to cut it back and give it a dressing of paraffin-oil, letting it take its chance of living. I intend to kill or mire it. Would someone kindly say when would be best to do this, and when I might, should it survive, expect it to flower. The house to be started about March? I have the Vine now outside the house. Is this a good plan? - IRISH SAXON.

5141. - Marechal Niel Rose in a greenhouse. - I planted a Marechal Niel Rose in one end of my greenhouse last January; it has made enormous roots. I measured one shoot, which is 10 feet 6 inches, and another 13 feet in length; out of these shoots have come side-shoots, measuring each 4 feet to 5 feet long. A great quantity of the wood is unripe. I have pinched one or two flower-buds off. I should be very glad if someone would tell me how to treat the plant in future, as I should like to get a good quantity of bloom next year. The greenhouse is heated with a fire, and I am only keeping up sufficient heat in winter time. I have a mixed collection of plants in the house. - W. H. H.

5142. - Making a garden, &c. - I am building a villa, and at present time trenching half an acre which I intend for a garden; the back or lower part of it is to be the south and slightly shaded by trees, the house-land and shrubbery will occupy another half acre; the whole is enclosed by wire-fence planted with Thorn and Privet. In the garden down the fence, facing west, I intend to plant fruit-trees, trained on parallel wires from the enclosing fence, across a 32-foot border. What are the most suitable hardy growing sorts for this purpose on south side which is shaded by trees? I intend planting borders of Raspberries, trained on cross wires in same way across border; will this do? The half acre of garden ground is almost square. What is the best plan to plant with fruit-trees, preserving portion for flowers? - BELFAST STRICKLAND.

5143. - Cytisus plants in a drawing-room. - I shall be much obliged to anyone who will tell me why my Cytisus plants in the drawing-room do not develop their flowers, and what I can do to get them to do so? They were perfectly healthy plants, and covered with spikes of flower-buds when I took them out of the bed where they were pinched during the summer. I set them for a few days under a sheltered wall, and then brought two into the drawing-room in a short time, but they have all now begun to wither and drop off, and the plants looked so bad that I put them into the greenhouse and brought in another one which I thought ought to have been acclimated, and which was partly in bloom. Only a few leaves of this one dropped, but the flowers and buds are withering, and there is not one open or about to open on it. The same thing has happened to a Primula dentiflora; the flowers will not develop and gradually die off; it is most disappointing, the heartiness and vigour of one flower-stalk which dropped at the bottom. - DANIEL.

5144. - Growing two crops of Tomatoes. - I should like to know if I can grow two crops of Tomatoes next year, and how, in the following manner: I have now 100 plants, but not yet 10 feet 4-inch early 9-foot plant, with two 4-inch pipes on each side, and another 60 feet by 31 feet, with 6-foot ridge and 4-foot sides, having the 4-inch pipes on one side and two on the other. I propose to sow second first week in January, grow them up close to the space will admit in the smaller house, and for fruiting plant out in the doors of both houses. Can I have fruit early in May? If so, the first crop should be off by, say, the end of July? The way I propose getting a second crop will take cuttings in June very early in the morning on the side, as I have no other glass of any kind, transplanting them to the houses when the first crop is off, and by this means fruiting them from, say, September till end of year. Is this the best method I can adopt? There are one or two other points I should also be glad of information on. I set, in three or four glass in using pots for Tomatoes; I grew some last year without any pots right from seed onwards, and they were quite as early and much sturdier than others that I grew in the pot system. And shall I have sufficient heat to fruit the second crop? And, as a second crop of Tomatoes likely to be as remunerative as a crop of late Chrysanthemums? I may say I run down some Tomato-plants after fruiting at the end of September this year to within 4 inches of soil, but they did not, as I had expected, produce any fresh growth, so that I presume they will answer my purpose better than that method. - G. W. D.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

5145. - Cypripedium oenanthum (C. Beecheri). - Yes; this is a very pretty form of this plant, but I cannot see that it has anything to do with the variety known as superbum. It is a magnificent specimen of the one of the very best hybrids we have had sent out. Both very rare in the Messrs. Veitch, who, if they had raised nothing else, would deserve the praise of every Irish-gardener in the three kingdoms. - M. B.

5146. - Oncidium varicosum (G. Harper). - You may depend upon it the spike of this will be open at Christmas, and it will remain gay for a month or more afterwards. I am very pleased that you should have been so successful with this plant and with O. tigrinum, the latter plant having twelve flowers open, yielding a delightful fragrance. Yes; they will last a long time yet, notwithstanding their having been open a fortnight. - M. B.

5147. - Fancy Orchids (G. B.). - The flowers sent are varieties of Pterodictyon, Bells, and Detoneras, none of them being of the slightest use or value to the ordinary grower of Orchids, and I do not see how it was not so immaterial with millions from various correspondents I might endeavor

To insure them for you; but it would take me a long time, I advise you to send either specimens than you sent to me, and in a more perfect condition, to Kew, asking them to kindly name them.—M. B.

5143.—**Odontoglossum blandum** (*H. Thunberg*).—This flower sent for blandum is nothing like it, but it is simply *O. Alexandra*, a small form and pure-white, which is the true form of the plant as figured by Bateman. The spotted form being called *O. blundii* by Kuhn and Bach, and he used to always assert that he could not find the difference, but there is really no difference. *O. blandum*, however, is a very different plant with smaller flowers and a dull more colour.—M. B.

5149.—**Epidendrum ciliare** (*H. Thunberg*).—This plant is very pretty, but your friend was quite right when he told you there was no demand for it; but, nevertheless, I should like to see it. Did you get it up with it, but when it is collected with *Catleya* plants of, perhaps, a rare variety, and is sold for it, when it comes to flower it is no wonder the owner gets disgusted with it. The plant was first introduced upwards of a hundred years ago, and it is widely spread over tropical America.—M. B.

5150.—**Balanium culcitra**.—*T. Gibson* sends a specimen of this plant which comes from Malera and the Azores Islands. But some few years ago Mr. Low, of the Clayton Nurseries, assured me it was getting to be a rare plant in its native habitats. It makes a bulb and leafed plant in a good fernery; differing very slightly from *Balanium*, saying in having a filament stem instead of an erect one. The pots in which it is planted must be well drained, using soft loam, peat, and sand well mixed.—J. J.

5151.—**Oranthe Vetchi** and **O. vestita** (*G. Pöhlen*).—Yes! these are very pretty, and you maintain the reputation of the Lancashire lady by growing them. When I visited to be a frequent visitor to gardens in that county I observed how well these plants were done there, the thing I most point out to your samples of *O. Vetchi* that you have by no means the best variety; the flowers being very pale coloured. You should look to this; but your *O. vestita* are excellent, both the yellow-eyed and the crimson.—M. B.

5152.—**Vanda Amesiana** (*C. M.*).—You should keep this plant in the warm end of the *Odontoglossum* house. You could not expect them to grow fast in this season of the year. The temperature of the house will be sufficiently moist for it; it is maintained right for the winter months. Let me know when you have the plant in flower, and I should like to see a single bloom. I am very anxious about this species. I want, I think, to see the plant as it is originally appeared with the Messrs. Carr, of Glasgow.—M. B.

5153.—**Cypripedium Charlesworthii** (*G. T.*).—I must acknowledge that I have not yet seen this plant, which everyone that has seen me it is a great beauty. Perhaps, if the Messrs. Charlesworth, who are selling it so freely, from a spare bloom, they would send me one to cheer me up in this dull time. I know enough of it, however, to advise you to add it to your collection; if you can afford it. I cannot tell you its price, but you could easily know by applying to Messrs. Charlesworth and Littlehugh, Bedford.—M. B.

5154.—**Cypripedium insignis** (*Reichenbach*).—The flower you send I have no doubt makes a very handsome look; especially if you can get the plant in flower in your glass house. I have to say that well you this variety for it. Indeed, I think, for even had it been a good form of the species it should have a far heavier white top to the sepal; but in the variety I should nearly half of the dorsal sepal should be white, beautifully spotted with purple. I am glad you find so much pleasure and enjoyment from your flowers. I, like you, could not find the different flowers in their own way.—M. B.

5155.—**Zygopetalum Mackay**.—*J. G. H. G. H.* says he has a plant of this species coming into flower with seven spikes, but he finds the opposite buds are turning yellow, and will fall away. What is the cause of this? Now, without knowing anything more about the plant, I should say in my opinion it is the matter with the roots. Either you have got the drainage stopped or partially so, and the soil has become surfeited, or on the other hand, you are starving it for want of water. Attend to its wants which way it may need it, and do not lose all these beautiful flowers with their delicate fragrance.—M. B.

5156.—**Odontoglossum Rossi Amesianum** (*H. Thunberg*).—This is the name of the variety you send flowering at a very unusual time, for it usually blooms in the spring months; however, perhaps you are about to have a variety which will flower twice in the season. But this will be in doubt certainly at the Christmas and New Year time, at which times, besides this, that can be used for purposes of personal embellishment are always welcome. This variety has much more vibrant brown in its than the typical form, and B. like the type species, is one of the rooted of the root plants, and it should be grown by everyone.—M. B.

5157.—**Rodriguezia secunda** (*H. Thunberg*).—This is the name of the pretty little rose-coloured flower you send, and which you say you received from the West Indies. It is an elegant little plant, which thrives well in an almost a block of wood. It appears to have been introduced many years ago, and was considered an old species when I was a boy. This plant, with some others, has been shifted about from one genus to another. The most fashionable craze at the present time is to call it *Orchidopsis*; but the above name was given it; but the most arrangers of these plants will, perhaps, find a fresh reason for altering it, and shift it to some other family.—M. B.

5158.—**Miltonia vexillaria** (*H. Thunberg*).—I am sorry this plant did not flower with this season, and will never be able to hear the plant looks rather seedy, because this does not appear to be producing for next year; but put the plant into a temperature which does not fall below 60 degs., and soon after the turn of the year report it into some good brown peat-fibre and Sphagnum Moss. Pick away from the old soil any sour or decayed pieces, and do not over-pot; keep the atmosphere moist about it to prevent the attacks of black fly, and if the season advances give a sprinkling of water on the surface daily, and let the know if you save the plant and succeed in flowering it in 1894.—M. B.

5159.—**Ocologyne cristata**.—*J. G. H. G. H.* writes, saying he has a plant with over two hundred buds upon it, and he would give anything if he could get it out by Christmas. Well, if my friend's blooms are forward enough for him to count I should say there is very little fear of their being open and well set up by the time mentioned. I should advise him to put the plant in about 65 degs. of heat, and to keep the atmosphere nicely moist, and avoid a great excess of wet, keeping the plant dry watered at the roots. As these flowers last a considerable time after they have opened, my friend will have a very grand ornament both for the Christmas and the new year also. The plant is flowering early.—M. B.

5160.—**Odontoglossum grande** (*H. Thunberg*).—The plants should be kept as dry as you can keep them now, without shrivelling the bulbs and leaves, and keep it a little warmer than the rest of the genus, and in about two months they may be potted in some good fibrous peat and Sphagnum Moss, the pots well drained, and they may occupy the warm end of the *Odontoglossum* house; they may be kept fairly moist. Now, this is a species which enjoys a good deal of air, and more than most of the *Odontoglossum* so let them always have air, which will induce them to make good firm leaves of the consistency of good leather aprons, and produce good spikes of bloom. Treated in this manner I cannot see why amateurs fail with this beautiful species.—M. B.

5161.—**Orchid house temperatures** (*Orchid News*).—I am very pleased to see what you have in flower. I think, however, you are keeping them somewhat too cool, and for some of the plants I may say much too low, which will impoverish them and tend to prevent them growing strong enough to flower next season. There is another thing which is absolutely wrong in naming *Catleya* plants. You should not have any determinative points. It should not have annuals, perennials, or any other definition, because the *C. luteata*, as named by Lindley, was an autumn flowerer, and this is the one you have flowering now, or some variety of it. I am also glad to find you include the lovely Indian *Crocus* in your collection. They are exquisite things.—M. B.

5162.—**Odontoglossum eugenes** (*J. B. E.*).—I can scarcely tell what you really mean from the crippled and distorted flower you send me, but as you say you have had another similar one, I advise you to cut it, and to mark it as above, to which I think, perhaps, it may refer; if so, when you get it established you will have a grand variety. You say it was imported recently with *C. trinitatis*, and this species is supposed to be one of its parents; the other one is set down as *C. Deschampsii*, but it is a supposed natural hybrid between these two plants, and the characters of the parents of other genera have proved beyond a doubt. I shall soon, however, get some verification of these natural hybrid *Odontoglossum* when the seedlings raised by Mr. Sedley, Maynard, and some others when they open their blossoms. But you have a plant that will turn out a beauty, so take care of it.—M. B.

5163.—**Davallia pallida** (*A. Johnston*).—This is the name of your specimen marked with 9; it is somewhat called *D. Monreana*; but Dr. Meisner told me before his last illness that he had clearly made it out to be this species, and so I have ever called it. It has an underground rhizome which brings young plants of this species to have very much the appearance of *Leucosticta lucifera*, but as it grows into fronds the fronds attain a size never seen in that plant. They are pale-green and persistent, and I have seen a plant fully occupying a space it foot or more through; this will give one some idea of the size it will obtain, and in such conditions it shapely looks majestic. It should be potted in good light-yellow loam, mixed with fibrous peat, chopped up with a spade and not sifted, mixed with a good bit of sharp silver-sand, the pots to be kept, it being thoroughly well drained; and it requires very liberal watering during the growing season, and even in winter it will be found a thirsty subject. It likes also the temperature of a warm stove, and to be treated to a liberal amount of shade.—J. J.

5164.—**Insects and Cyclamen bulbs** (*Jan. Pike and John Colker*).—The insects attacking the roots of your *Cyclamen*, &c., are the grubs of the Black Vine Weevil (*Oryctes nasicornis*), or other species of the same genus. As far as I know there is no means of destroying the grubs but plucking them out from the roots of the plants. The weevils are nearly black in colour, but about half an inch long. They are very injurious to the foliage of various plants. They are very difficult to find, as they hide themselves in the moist, spongy matter during the day, and it is dark, be shaken over a white shawl, and then be carefully searched with a strong light. Plants grown in open borders are more difficult to protect from these beetles; but any stones or rubbish under which they might hide should be removed. There is another weevil belonging to the same genus, *Diorhynchus pilipes*, which is of a pale greyish-brown colour, whose grubs are quite as destructive as those of the species described above; the weevils generally make their appearance in May.—G. S. S.

5165.—**Cankerd Apple-shot** (*Mr. Hopkins*).—The Apple-shot you sent was certainly very badly cankered. Canker is rather a mysterious disease. It is generally supposed by having grown into the soil that does not suit them; but, according to Mr. H. Marshall Ward, who is one of our best authorities on the diseases, canker is due to local injury or destruction of the cambium, the outer layer of the wood (that just beneath the bark), which may be caused by a parasitic fungus, or by injuries caused by the weather or insects. Anyhow, as far as I know, it is incurable in most instances. In some cases much benefit has been done to the trees by taking out the soil near the growing roots and filling in with fresh soil. "The winged female" which you found on your Espalier tree is the wingless female of the Mottled Lumber Moth (*Hybernia defoliaria*). The caterpillars of the moth are most injurious to the young foliage of Apple and other fruit-trees; in districts where this insect is common, means should be taken to prevent the females (which are always wingless) from crawling up the stems of the trees to lay their eggs on the leaves. The best means of accomplishing this is to cut a band of some sticky substance, such as the Indian gum, around the stems of the trees about a

foot from the ground. The sticky material should not be painted on to the bark, as that would be injurious to the tree, but should be placed on bands of paper not less than 8 inches wide, which are greased proof, and they should be so carefully fastened round the stems as to prevent any of the moths from crawling underneath. Various sticky compositions have been used, tar, cart-grease, and Davidson's composition, or a mixture of cart-grease, soft-soap, and train-oil. Whatever is used, care must be taken to renew it as soon as the composition ceases to be sticky enough to entangle the insects.—G. S. S.

NAME OF PLANTS AND FRUITS.

* Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C.

Names of plants.—*Araucaria*.—1, *Polystichum angulare proliferum*; 2, 3, and 4, Varieties of *Prinos acerrifolia cristata*; 5, *Sepidium hookeri*; 6 and 7, *Adiantum formosum*; 8, *Polystichum angulare*; *Wollastonia*; 9, *Davallia pallida*.—*J. B. Denning*.—*Catleya purpurea*.—*J. Maynard*.—1, *Cypripedium Lesanum*; 2, *Brassia alba danica*; 3, *Laelia anceps* Hillman; 4, *L. Websteri*; 5, *Davallia elegans*; 6, *Idontosia aculeata*; 7, *Adiantum Willeanum*; 8, *Diplazium laevis*; 9, *Aquarium vancouverianum*.—*D. Freese*.—1, *Adiantum triphyllum*; 2, *Adiantum*; 3, *Adiantum*; 4, *Adiantum*; 5, *Adiantum assaiense*; 6, *Adiantum amabile*; 7, *Adiantum hispidum*.—*Oliver Haywood*.—*Orchidium varicosum*.—*T. G. H.*.—1, *Niphobolus perkinsii*; 2, *Colybia acuminata*; 3, *Phytolacca nigrescens*; 4, *Phacelia squarrosa*; 5, *Stenocoma aurita*; 6, *Woodia polystichoides*.—*T. Gibson*.—*Balanium vellea*.—*A. B.*.—Single *Chrysanthemum Yellow Jane*.—*M. B.*.—*Cypripedium insignis*.—*P. Fane*.—*Eranthemum pulchellum*.—*John Thackeray*.—Also specimens. Though not often seen in bloom, it is not an unusual occurrence for it to flower.—*H. B.*.—*Chrysanthemum*; 1, *Potter Palmer*; 2, *Sofia Levant*; 3, *Hereward*; 4, *Alfred Sater*; 5, *Isle des Etalons*; 6, *Empress of India*.—*No Name*.—1, 4, and 5, *Speuchium insubricum*; 6, *Pteris cretica sublineata*; 7, *Adiantum gracillimum*; 8, *Pteris serrulata*; 9, *Lycopodium complanatum*. In future please send better specimens.—*J. B. Luntley*.—*Chrysanthemum*. The blooms were in bud condition; however, they were sent in an exact name, whose names as follows: 1, *Muse C. Amphibius*; 2, *Decayed*, cannot name; 3 and 9, identical, *Alfred Sater*; 4, *Vivian Morel*; 5, *Glorie du Fischer*; 6, *Jamur Sater*; 7, *Mlle. Lacroix*; 8, *Queen of England*; 9, *Probably C. Endrewood*.

Naming fruit.—*Readers who desire our help in naming fruit must bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its determination. We can only undertake to name four varieties at a time, and these only when the above directions are observed. Unpaid parcels will be refused. Any communication respecting plants or fruits should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C.*

Names of fruit.—*J. P.*.—Apple way be Wren Pippin, but specimen much shrivelled.—*J. P.*.—Apple White River, and Apple Red River. 2, *Roundway Magnum Bonum*; 3, *Probably Five-crowned or London Pippin*; 4, *Fruit shrivelled up*.—*M. M.*.—Pears: 1, *Bliss Moreau*; 2, *Year of Winkfield*.—*J. P.*.—*Winkfield*.—Pears: 1, *Phaenomenon Duchesse*; 2, *Beurré Rance*.—*Everett Partridge*.—Now, on fruit sent all detached and mixed up so that we could not name them.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

H. B.—Apply to any dealer in artificial manures.—*Lily*.—Apply to Mr. T. Hancock, Art. Nursery, Dring, Linn, Norfolk.—*J. S. W.*.—We know of no book that will help you so well as *GARDENING*; send us queries.—*Thos. Alderman*.—Apply to the Publisher at this office.—*L. H. Wharfedale*.—A pretty but not unusual form of *Chrysanthemum*.

POULTRY AND RABBITS.

Feeding fowls (*B. J.*).—In feeding fowls give them just as much food as they will pick up with evident relish, and to discontinue throwing down any as soon as they have had enough. The querist does not give his birds nearly enough to my thinking. A bushel of corn per week amongst eighty birds does not allow a very heavy quantity for each fowl; indeed, the latter amounts to only a little more than half a gallon per peal for all—a ridiculously small allowance. It is no wonder that the fowls are constantly hungry. If better results are hoped for, extra food must be given. Early in the morning the birds should receive an allowance of meal mixed with boiling-water, and fed as hot as the fowls will eat it. Then in the afternoon, just before the birds are going to roost, give an allowance of hard corn. On no account feed between the regular hours. It is this which makes fowls disinclined to work for themselves, but if you are ready to run after any one who chances to walk amongst them.—*G.*

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Founded by W. Robinson, Author of "The English Flower Garden."

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ROSES.

SHOULD ROSES BE PLANTED IN SPRING OR AUTUMN?

I AM often asked my opinion upon the above question, and will try and give a brief note respecting it, with my reasons for arriving at certain conclusions. It is certainly best to plant Roses in the latter part of October or early in November on all kindly soils—i.e., such as light porous soils, in those that, although somewhat stiff, still have good drainage. On such soils Roses will commence to root at once, and so get partly established in their new quarters before the rigours of winter are upon them. In soils that are naturally wet and heavy, in spite of a fair amount of drainage, I would prefer spring planting. In this case I would plant during February. Should very drying winds set in during March and April, spring-planted Roses are helped very much by a sprinkling overhead once or twice a day. The wind dries the sap of the wood, and as the plants have not got their roots sufficiently established to be able to draw plenty of extra moisture from the ground, the strain upon them is too severe; consequently the wood shrivels, and in many cases dies altogether. An occasional sprinkling at suitable times would have avoided this. Most amateurs must have noticed how very soon Roses form roots after being taken up and relaid in the ground, more especially if the soil be of a light and porous nature. Generally speaking, these roots get torn off or very much mangled during the operation of replanting, and this is another very good reason for autumn planting.

MOVING THE ROSES during autumn will also check the sap and growth of any sappy or pithy shoots that do not promise to ripen up well or quickly enough to be safe during the winter. These facts, in conjunction with the better drainage of freshly moved soil, are all advantages in favour of autumn planting. Roses that have been planted early will give better flowers than those planted in spring upon light ground. During some autumns, and when the Rose is in particularly good condition for early transplanting, we occasionally find the soil too dry for the operation. In such cases either water the plants well before lifting and again upon planting, or else wait until rain comes. If the first plan is adopted you are certain to get your plants partly established during the time the ground still retains a little of its summer heat. Not the least advantage of early planting is the fact of being able to secure better plants and of the variety you wish. It is also an excellent plan if your ground be wet and stiff to purchase the plants you require, and then set these in somewhat thickly, choosing a sheltered situation and using nicely prepared soil. By placing your Roses under trees you secure a dry soil for their roots, and at the same time obtain a great deal of natural protection. You can transplant to the permanent quarters at the most suitable time, and the roots also have the advantage of being fresh and free from drying air. A few

minutes of the keen drying winds that are often experienced do a vast amount of harm to the roots of newly-lifted Roses. R.

Tea Roses "Sappho" and "Mme. Joseph Godier."—These comparatively new Tea varieties possess the sweetest scent to be found among these flowers, excepting *Socrates*. They are both fairly good growers and flower freely, while their colours are particularly soft and pleasing. As pot-plants they have done excellently with me since their introduction about three years back. *Sappho* lasts well when cut, and I have had it quite fresh eight days after having been cut from the plant. The chief thing in keeping cut-flowers in a fresh state for any length of time consists in cutting off the bottom of their stems afresh, using a sharp knife that will leave the cut clean and the cell pores open to allow of the water ascending freely. Flowers simply put into water after being cut off the plant will not do nearly so well as if they are recent before placing them in the vases, &c. It is astonishing how very short a time will suffice to dry up the bottom of the flower-stem, and while in this state very little, if any, support can be carried to the flowers from the water they are placed in. I also make a point of changing the water every day and of cutting a small portion off the stem at the same time. Hard water is better than soft for keeping cut-flowers.—R.

5129.—Planting Tea Roses.—These may be planted now and onwards until March, provided the weather keeps open; but the best time is past. November is the best month for planting Roses. From your description Teas should do very well with you, and I would plant in both soils. By this means you prolong the season of blooming, and would have no blank from the middle of June until sharp frosts are here again. If only one spot is chosen it does not matter which of your two soils it is; all depends upon the manure you apply. Light soil needs close manures, heavy soil the reverse. Twelve good Teas for your district would be found in *Anna Ollivier*, *F. Krüger*, *Perle des Jardins*, *Souvenir d'un Ami*, *Souvenir de S. A. Prince*, *Mme. Falcot*, *Sofrano*, *M. Van Heutte*, *Edith Gifford*, *Mme. Hoste*, *Dr. Grill*, and *Mme. Lambert*.—P. U.

Under the circumstances, I think you might safely get the plants in at once, if the present mild weather holds, protecting them with some dry litter or Fern if severe frosts sets in. In a cold or exposed situation, or on heavy or damp soil, it would be wiser to wait until towards the end of March. Tea Roses prefer a moderately light soil, if deep and rich, to a very heavy one, though something depends upon the stock on which they are worked. If on the Brier they will do on stiffer ground than if the *Masetti* were employed.—B. C. R.

You may plant at any time in the autumn or winter when the weather is favourable, but early autumn is as good a time as any, or the spring. A rather warm and sheltered position should be selected for them, and heavy or wet soil drained well, as Tea Roses will not do well under such conditions. Such soils, however, may be lightened by the addition of

plenty of road-sand. Tea-scented Roses are harder than many would suppose, but in very severe weather it is wise to protect the plants with Furze or Bracken, or another excellent way is to mould up the plants with soil about 6 inches in depth. You should succeed well with this section, as the garden faces south, and is fairly well sheltered, whilst the soil is light.—C. J.

5141.—Marechal Niel Rose in a greenhouse.—Your plant is certainly growing with wonderful vigour. Check its growth by stopping its water supply a little, and give as much air as you possibly can. You will get good bloom from the long growths if they can be matured, but not without this desideratum. I am afraid it is growing rather too late; but ripen it as far as possible, and then cut away the unripe portions. Next year try and get its growth matured somewhat earlier.—P. U.

It is unfortunate that the two strong growths on your plant should be the side shoots; but there is no help for it—it is just what many other vigorous-growing Roses do. It is unfortunate, because, as you say, this late made growth is not well ripened. It may, however, flower later than the main shoots; at least, my plants do when they are in that condition. It will, however, be advisable to cut away at once this unripe growth, and another year pinch off these late shoots when they are 3 inches long. This will cause the main branches to extend. With such a vigorous plant you cannot do better than to cut all the growth back to a suitable point when the parts left are well up to the light. Do this as soon as the flowers are over, and you will have for the next year's flowering many long and vigorous shoots; but do not get anxious if the cut-back parts do not start into growth again directly. They will be sure to do so all in good time to make good flowering wood.—J. C. C.

5138.—Roses for an arch.—You name *Perpetuals*, but I do not imagine you wish to be confined to the Hybrid Perpetual class. The real *Perpetuals* are found out of this section. *Cheshunt Hybrid*, *Bardon Jub*, *Turner's Crimson Rambler*, *Mme. I. Perière*, and *Climbing C. Lefebvre* will all give you a great contrast to those you have; all of these are dark. *Mme. Bernard*, *L'Idéal*, and *William Allan Richardson* are also distinct, and good for your purpose. These last are different shades of deep orange-yellow and apricot. *L'Idéal* is particularly sweet-scented.—P. U.

If you would like a sweet-smelling White Rose, with clusters of neatly-formed flowers, you may choose *Mme. Plantier*. It is quite hardy, and not such an unruly grower as some others. *Mme. Gabrielle Luizet* is a good Rose, and quite a change in colour, and will make all the growth you want for your purpose. A good dark-crimson Rose will be found in *Climbing Victor Verdier*. If you want a good yellow you may select *L'Idéal*.—J. C. C.

5116.—"Moss Roses."—The *Glory of the Snow* will do in any way interiere, with the *Roses*, and make a very charming picture; and you may also plant the beautiful *Dog's-tooth*

Violas, Snowdrops, Winter Aconite, and similar dwarf bulbs, if you take care not to plant too close to the roots of the Roses so as to injure them, as the bulbs, take very little nourishment indeed out of the soil. The most beautiful garden I have ever seen for colour was planted with Carnations or Roses, both classes in distinct groups, and you may use also Tuffet Pansies, or such annuals as Mignonette. In many of the parks one sees the latter used, and nothing is sweeter and prettier than this old favourite.—C. T.

For autumn you might have the Autumn Greens in variety (*Sternbergia lutea*). The Chinoxoda (Glory of the Snow) is a charming thing in spring. Neither these or the autumn flowers mentioned above will hurt the Roses.—E. H.

"Tallynally" may safely put any bulbs among these, but I would only choose those coming into bloom early. By this means, will ensure the crop of them before the leaf of the Roses is too dense to allow of their fully being seen.—H. U.

5008.—**Baking for button-hole Roses.**—The most popular plants used for backing Roses are *Azium cuneifolium* and *Asparagus plumosus*; but these require some amount of heat. I have seen very dainty button-holes of the Malonia and Roses, just a little of the bronzy-chocolate tinge of the former, to bring out the refined and beautiful colours of the flowers. Roses are always charming when their own leaves are used, and this remark applies to flowers in general.—C. T.

GARDEN WORK.

Conservatory.

The *Chrysanthemums* are now thinned out considerably. Lady Trevor Lawrence is a very useful white for Christmas cutting when cut down in June, and kept cool after the first frost. Good whistles are always in demand. The groups of *Chrysanthemums* gradually getting smaller, there is now plenty of room for other subjects. A group of cool *Orchids*, where *Orchids* are grown, will be a very attractive feature. Bulbs are now coming in plentifully, and good specimens of *Arum liliaceum* are very effective, and in the buoyant atmosphere of the conservatory are very lasting. *Urtica* or *Goniatum*, planted out in the border, soon make dense bushes which flower continually from October to March, when, if they are cut into shape, they may have all the summer to make an ripen growth. The *Goniatum* makes a good wall plant, and I have used it to form arches in the conservatory, with, with a little trimming and training, were very effective. One of the features of this class of plant, when set out in the border, is their exuberant health and freedom of blooming. The still *Coronilla glauca* is not a fashionable flower, but it is very useful at this season, nevertheless. *Camellias* are now very bright, and the old Double White is still one of the best for cutting; *Imbricata alba* is also a good white. White *Azaleas* are now to be had in quantity where the plants have had their growth well ripened. *Deutsche Perle* soon opens its buds in a temperature of 60 degs. to 65 degs., and at this early season the flowers will keep a long time. The watering now will require judgment and care. Certain classes of plants require liberal supplies. *Chrysanthemums* and *Camellias*, for instance, must not be allowed to get dry, and weak stimulants may be given in plants coming into flower, or with many buds still to open. A night temperature of 60 degs. will now do very well. There may, of course, be a little fluctuation around this figure, but we will take 50 degs. as the minimum. The day temperature must, in a great measure, depend upon the amount of sunshine we are favoured with, as I should not recommend strong draughts for the purpose of keeping in a very high day temperature. Chinese *Primulas* should be kept in a light position, and not watered too much. *Urticaceae* will flower in similar conditions. *Bonvardias* should be placed at the warmest end. If starved the plants soon get shabby, and when that condition arrives better dry them off and cut down. *Poinsettias*, when they come to be effective, should be gradually ripened off by withholding water, and may then be taken back to the cool stove.

Unheated Greenhouse.

This house will not yet be without flowers. In spite of the one or two rather sharp frosts we have a few *Chrysanthemums* still in flower. *Chrysanthemums* are charming, and bushes of *Laurustinus* and the *Naked-flowered Jasmine* are as fresh as possible. Another useful little shrub is the *Andromeda forficunda*; the little white bell-shaped flowers are very lasting. There is a good deal of decorative value in the *Chimonax* family when grown under glass. If the frost comes very severe the pots must be protected with *Cocconut fibre* or something else. Do not forget when the frost comes to stay for two or three weeks that covers on the upright glass and also on the roof will tend very much to the comfort and safety of all plants not absolutely hardy. Water, except for the *Laurustinus* and other hardy subjects, will not be much required.

Stove.

Demulroloma, *Cypripediums*, and other *Orchids* will be more or less in evidence now, and very charming they are, and in a well-furnished stove, with a night temperature of 50 degs. to 60 degs., there will be many other interesting things in blossom. The *Ceratodendron* roses and *forficunda*, *Lychnis carnea* and *rosea*, *Flumbago rosea*, *Euphorbia splendens* and *Jacquinia*, *Begonias* in variety, *Justicia*, and many other things, both hard and soft-wooded, are now yielding blossoms for cutting and other decorative purposes. *Gloxinia* here, in many instances, started, and are now making leaves, and will shortly show flower in a warm, moist atmosphere. Watering is always a work of care at this season. Never water any plant without rapping the side of the pot. This is the gardener's best test when

in doubt. The condition of many things may be instinctively known without this test, but no one should water any plant about the condition of which there is the faintest kind of doubt without tapping the side of the pot.

Orchard-house.

At the present time the trees will be outside, and the house occupied with the *Chrysanthemums*; but these will soon be over, and after the cuttings are secured, and the plants cut down, the latter may be moved to a cool pit, and the house got into condition for the return of the Peaches and other fruits which are grown in pots. For the most part the necessary potting and top-dressing was done, or should have been done, in autumn, and before the leaves fell, and the roots will now be working into the new soil. It is a great advantage to do all this kind of work before the leaves have lost all their influence upon the roots, as the impulse then given will be continued steadily throughout the winter. Peach-trees and other fruit-trees in pots which are well managed should not require much pruning now. There will be the usual shortening of snags, and the removal or shortening of superfluous shoots. A good kind of manure through a lot of hoed-over leaves, things better than he found them, even though much is not required. After the pruning wash every part of the tree with an insecticide of sufficient strength to destroy all insect life.

Ferns under Glass.

Keep the plants free from dead fronds. The glass cannot be too clear over Ferns now, as although at the present time there is not much radical growth movement, the buds at the base will soon be on the move, and light is an important factor in giving them a good start. Young plants of the hardest Ferns in a pot-bound condition may have a shift now; but, as a rule, all may remain as they are for another month or six weeks without injury. Then the collection must be gone through, and whatever potting or shifting is required done before the leaves of Ferns about now, as a rule, are dried off. There are exceptions to this, like all other rules, but very few Ferns are the better for drying off. Maiden-hairs may occasionally be cut down, but the new growth will start away directly.

Window Gardening.

The main thing to keep in mind is to be ready for sudden frost, and to this end water should be sparingly used. By this it does not mean that only a little should be given, as all plants when watered should have enough to moisten all the soil, but no more should be given till the plant really requires it, whether that time remains a week or longer. Everybody has to make the best of their means about Christmas and the new year, and something may be done with hardy plants, such as shrubs, &c., with a few flowers in the salient points.

Outdoor Garden.

Cover Christmas Roses with hand-lights or cloches. The plants in dry borders are not flowering so freely this season in consequence of last summer's drought. Make new beds of foliage of the Valley. Work in plenty of laid-mould previous to planting, and mulch with rotten manure afterwards. Violets are not likely to flower so well this season where the water supply has been short, the red-spider having injured the lillage. A note should be made of these matters for future guidance. See that standard Roses with good manure, and newly-planted Roses with good manure, and open soil. The ground should be well broken up to give them a fair start. Rearrange old shrubberies. Old overgrown Lilacs, Syringas, and things of like character, should be grubbed up, and young plants of better varieties set out in their places after the ground has been trenched up and manured. There is plenty of room for improvement in old places. This is not the best season for pruning flowering shrubs, as laid pruning now will cut away next season's flower buds. The best time to prune leafless flowering shrubs is just as the flowers are falling. The new growth will soon fill up, and will have plenty of time to ripen and produce blossoms. Bush or tree lilies are very ornamental now, especially if of large size. Time is required to produce a large bush, but when once established the growth of the green-leaved varieties is very rapid. They are easily propagated from cuttings. Seeds are of no use, as now, if not all, the seedlings will go back to the type. Manure the lawn, and if there should be any vacant beds now. Fewer beds and always full should be the order of the day, and to this we are working round. A bed full of Wallflowers or *Brompton Stock*, the seeds for which cost next to nothing, are better than any others. Then there are *Primroses*, *Tufted Pansies*, *Daisies*, *Forget-me-nots*, *Silenes*, and other things, all of which can be propagated at home to make the beds and borders bright in spring, when everybody is hungrier after flowers.

Fruit Garden.

Hurry up repairs in pruning, and apply a dressing to insects. Fresh time is cheap, and is not half enough used. Nothing stimulates a tree more than a dressing of fresh lime, where the bark has a tendency to Moss formation. Apply it when the bark is clean, so that the most of it may stick. It will ultimately wash down to the roots, and so a double benefit will be obtained. In making or tying the branches of trees to wall or trellis leave room for the branches to grow. Much injury is done by tight ligatures. Cut off suitable wood to form grafts. All who have a good collection of hardy fruits should do this, as if all are not required at home, there is always the chance of having the pleasure of supplying friends who have inferior varieties to graft. Clean the soil, vineyard and Peach-trees cleared of the vines top-dressed, and all made ready for starting. Pot-Vines may be started at once with a night temperature of 50 degs. Figs intended to be forced early should be pruned, cleaned, and trained. If grown in pots, apply a rich top-dressing, or, if necessary, repot. Figs in large pots may be carried on for a long time with rich top-dressings and liquid-manure during growth, and when weakness sets in, prune hard back and reduce the roots and start again. Figs in a pot-bound state may have large slices made in the balls with a knife with advantage, as they soon make new roots. Keep full-grown succession Pines rather dry at the roots for a time to induce starting. If in pots, lifting the pots out of the plunging-bed will administer the necessary check to cause the fruits to start, when the warmth and moisture be applied again; but this plunging treatment must not be continued too long, or the fruit will be in colour. Most of the fruit trees are now in fruit, but do not overwater, UNIVERSITY OF URBANA-CHAMPAIGN

Vegetable Garden.

Hitherto there has been no stoppage in the work through stress of weather, and the winter Greens have profited by the mild weather to make a lot of growth, which in the event of sharp frosts will suffer considerably. To save the Broccoli in a season like the present they should be heeled in, and where this has not been done it would be wise to see to it at once. Autumn Cauliflowers and Broccoli have been very fine, and those still uncut must be protected when frost is expected, or they will be spoiled. Mint, Sorrel, and Tarragon are now required in a green state in good establishments, and to keep up a succession there must be a command of heat, whose relays of roots may be placed in as required. There must also be the means of protecting Parsley and Chervil to ensure a supply in the case of bad weather setting in suddenly. Do not overwater Lettuces in frames, or the leaves and hearts will rot. The demand for moisture in cold frames is now of the slightest, especially where air is not given freely. Celery and Cardoons must be protected from frost. Take up Asparagus roots for forcing in anticipation of frost, and lay their roots close together and cover with long litter, to be ready when wanted, so that there may be no break in the supply. When the new year comes in Asparagus may be forced in the open ground, if there is a good stock of fermenting materials. When grown in single rows trenches can be opened between the rows which are filled with manure and leaves, the row of plants being covered with movable boxes. The trenches need not be very deep, as the fermenting material may be built up above the surface by the sides of the boxes. Usually some soil is taken from between the rows for blanching purposes, and this can be levelled down again after cutting ceases. The advantages of this kind of forcing is it does not destroy the plants. After a couple of years it will force again if desired. E. HOBBS.

Work in the Town Garden.

Many *Drechs* succeed fairly well in the atmosphere of moderate-sized town, or in the suburbs of London, &c. Indeed, I know more than one grower who manages a selection of these interesting and popular plants with really wonderful result in quite the heart of the town. Such kinds as *Oleander*, *Alexandria*, and others, *Drechs* of various sorts, most of the *Cypripediums*, and notably the beautiful *Colony* crystals, which flowers at mid-winter with a very moderate amount of warmth, thrive with a reasonable amount of care, in even the most unlikely places. The majority of those mentioned, as well as many others, succeed best in what may be termed our "intermediate house"—that is to say, in a house or pit where the heat seldom falls below 50 degs. in the winter time, and never below 45 degs., rising to 55 degs. or 60 degs. during the day, and with a summer range of 60 degs. In 50 degs. or so. A constantly humid atmosphere is a necessity—at any rate, during the whole of the growing season—and ventilation must be cautiously and, as a rule, sparingly given, and with a due supply of water at the root, the failures will be few. Consequently, the plants associate well with the more tender description of Ferns, *Painis*, and other fine foliage plants—*Drechs*, *Gloxinia*, *Goniatum*, &c. Indeed, in a town garden, a lot of this class of plants, if carefully tended, will often give more satisfaction than a greenhouse proper. Now that the plants are, for the most part, at rest, is a good time to buy *Orchids*, and then they become accustomed to their new surroundings and treatment from the very commencement of growth. On the other hand, what are known as "hard wooded" plants, including *Hyaths*, *Jornalis*, *Chorozema*, *Apexis*, *Frostemons*, *Goniatum*, *Thibaudias*, and others, which were far more commonly grown half a century ago than now, do not as a class, thrive at all well in the murky atmosphere of a large town or city, and should consequently be avoided. Oddly enough, *Camellias* are however, capital town plants, and so are the charming and most useful forms of *Epicaris*, with *Boutardias*, *Myrtles*, and even the quaintly pretty *Australian Correa*. Common *Primroses*, grown in pots, are now in full bloom in a few cases, and suggestive of future possibilities of spring. Violets, however, are seldom in town gardens, both indoors and out, and the same may be said of lilies, while *Pansies* do not thrive as in pure country air and soil. Seed catalogues will soon be coming in, and making out the seed order for next spring is a nice occupation for one or two of the long evenings. Always depend chiefly upon well-tested favourites, with a few small packets of something new by way of trial only. B. C. R.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary from December 23rd to December 30th.

Noted another batch of *Tuberose* and plunged them in the peat-moss-fibre to make roots in cool-house. Moved plants of various kinds to forcing-house for early flowering. Filled a small pit with Strawberries in pots. The night temperature will be about 50 degs. Put in more cuttings of *Chrysanthemums*. All those *Chrysanthemums* going out of bloom have been cut down, and many of the duplicates have been thrown away, as they will not be required if it is useless keeping them. If a wet day comes the pots will be watered and packed away till next season. Pruned, cleaned, and trained Peaches in a late house. Burden inside have had a good soak of cool-water. It is stimulating without encouraging gross growth. Looked over the choice alpine on rockery, and placed a thin mulch of *Cocconut-fibre* round the roots of a few which appeared to need a little protection. A few things have been sheltered by placing cloches elevated on stones to keep off heavy rains, and yet permit of a free circulation of air. Alpines in pots, of which a few are grown as duplicates, have been covered in a bed of ashes up to the rim in a cold pit. Lights will be drawn off on every favourable opportunity. Pruned and trained hardy climber-plants on walls. Tender things, such as *Ceanothus* have been left unpruned till spring. Herbaceous borders have all been mulched with short manure. Finished pruning hardy fruits, except Peaches, Appricots, and Figs; the latter are at present covered over with Spruce branches, and will be cut off till the end of the month. Looked over fruit-stove to remove decayed fruits. Made fresh new compost, and Brans on south border.

* In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than the dates indicated in this column.

Planted more Lettuce and Cabbage-plants. Made up new Mushroom-beds. Cleared out one exhausted bed and filled space with Sea-kale-roots. Planted a house with Cucumbers to come in about next Easter. Looked over a house now in bearing to stop and regulate growth; very little knife work is required where the plants are looked over once or twice a-week. Plants which are permitted to run will not bear so freely as when every shoot is pinched one last beyond the fruit; but every shoot which shows will not be permitted to remain on now. Moved a few late Peas to a temperature of 60 degs. to bring up flavour and make the flesh more melting. Spent half-day in shading line over Apple-trees in orchard. More lime might be used, or rather it might be used more frequently; it cleanses and brightens the bark. Made up a range of hot-beds for Asparagus, Potatoes, and Horn Carrots. Trenched and manured a piece of ground for Onions next season. Turned over compost heaps. Moved a lot of early Broccoli to a deep, cold pit. Shall cover with manure and dry litter should frost occur. This pit will secure a supply for a long time, as in many plants the insects are only just forming, and as the check given has been slight the plants will continue to grow, and they may be cut as required. Put new stakes to standard Rows where required. Re-planted Box-edges where it had become a little patchy from using weed-killers. Rain came unexpectedly shortly after the weed-killer was used and the Box suffered in several places. Unruffled Peaches on walls. Framed Laurels and other evergreen shrubs, where used for undergrowth, to keep bottoms well clothed with leaves. When permitted to grow up the bottoms get thin.

FRUIT.

GOOD MARKET PLUMS.

WITH me, in the South of England, the following varieties are generally the best—viz. Rivers' Early Prolific, one of the best of very early Plums, being fully ripe at the end of July on a wall, and very little behind this on bush-trees. Early Orleans, another excellent early sort that succeeds well as a bush tree, very prolific, and good for any purpose; makes a good succession to Rivers' Prolific. Victoria, too well known to need any description, is the very best Plum in cultivation for cropping and for any purpose for which Plums are grown; as a cooking Plum it has no rival, the flesh being thick and the stone small, and when fully ripe it is also a very excellent dessert Plum. Jefferson, a beautiful dessert fruit, very rich in flavour, and, I think better than bush or pyramidal trees than from a wall. Pond's Seedling, one of the largest of Plums, with very handsome fruit, excellent for kitchen purposes. Coe's Golden Drop, one of the finest late Dessert Plums in cultivation, being most delicious in October, as it will hang until partially shrivelled on a wall, quite ripe to the end of October. Green (age is still one of the best flavoured of all Plums, and a good bearer, and Gisborne's (here figured) is a capital medium-sized kitchen Plum, of a greenish-yellow when ripe. The tree is an early and abundant bearer. H.



Plum "Gisborne's." Engraved from a photograph sent by Mr. J. Mayle, 133, Parliament street, Derby.

Staking fruit-trees.—It is quite true that a lot of fruit-trees are planted and not staked. More is the pity, because it is not possible that standard trees can stand erect with but a mere handful of roots in some cases to balance the head. I make a practice of staking all standard fruit-trees the same day that they are planted. Some persons, I know, leave them until a favourable opportunity occurs. In the meantime most likely a strong gale of wind springs up, accompanied with heavy showers. No matter how carefully the roots may have been spread out when planting, it is impossible for them to remain so for any length of time when the trees are being blown about by the wind; some, perhaps, are blown quite down. The old-fashioned plan of placing the stake close to the tree, or at least an inch or so away, then hiding a piece of sacking or straw around the tree-stem, to be after secured to the stake with the familiar rat cord, is a plan not to be recommended nowadays. There is nothing to equal a wither made from a sapling; either Hazel or almost any kind of coppice wood that will twist will answer the purpose better than the shoots of the common wild Guelder Rose, which many persons in the

country call Whitewood. The advantage of these withes is that the stake can be kept at least 6 inches from the tree, which effectively prevents the stake rubbing the tree, as in the case when rat cord is employed. The stake is driven firmly into the ground, a thick wad of straw is placed on each side of the fruit-tree-stem, to be made fast to the tree by fastening the wither around it by means of the loop which should be made at the end of each. A turn is then taken round the stake, another round the tree. The end of the wither is then made fast half-way between the tree and the stake by winding it round the parts which stretch from tree to stake; the end of the wither is tucked through the twisted parts and made fast. It is not possible for the tree alone to be moved by the wind; therefore, if the stake is driven firmly into the ground, the tree must be secure. These withes last a year, the stake, too, as a rule. Simply renew the wither and the trees are again made secure. In all country places these withes can be had without much trouble, but, failing them, No. 8 galvanised wire would answer very well. Sometimes the ties slip down the stem of the tree and the stake, owing to the constant pressure put on each during windy weather. A tack into the stake will remedy this.—H.

STARVING FRUIT-TREES.

THE return of the winter, when pruning and manuring is usually performed, offers a favour-

able opportunity for calling attention to the fact that fruit-trees are starved in many ways, besides that of withholding the necessary applications of manure, without which it is impossible for any time to keep on producing heavy crops. It has been proved over and over again that cropping Vine-borders is ruinous to the Vines, and not a profitable proceeding to the owner, for the simple reason that more is lost in the crop of Grapes than is gained by any produce that can be grown on the border, and this is applicable to other fruits as well, and it may be laid down as a general rule that as the roots will extend quite as far from the stem as the top of the tree reaches in height that this distance should be kept sacred to the roots, and mulched and tended like a good Vine-border, if fruit of the finest is to be grown. Yet what do we find, as a rule, in small gardens? The vegetable crops are planted right up to the stems of the trees on the plea that they cannot afford the space necessary to give the fruit-trees a chance of having their surface-roots undisturbed, and it is no uncommon thing to see the soil being dug over when the tree needs every root to swell up its crop, and the best surface-roots are cut off or rendered useless by reason of being mutilated when they ought to be undisturbed. Some vegetable crops are not so bad as others, but almost any of the Cabbage tribe are so strong rooting and gross feeding that they will soon starve any fruit-trees into a weakly, debilitated state, from which it is no easy matter to recover them. If you point out the plan of starving fruit-trees to the owner, the probabilities are that you will be met by the reply that it is done in much larger

gardens than theirs, and must be right, but the fact of its being done by people who ought to know better proves nothing more than its being an established custom that takes a long time to overcome. Mixed flower-borders have much to answer for in starving fruit-trees; if you pass along some garden walks you will note that fruit-trees, either as espaliers, bush, or pyramids have been planted a few feet from the edge, and flowers of some kind have been planted to make the garden gay; but it is all at the expense of the poor fruit-trees, for, although they grow away finely together for a few years, it is only a question of time when the strong herbaceous plants will get the mastery of the fruit-trees. It seems odd that a tree should be starved by a plant, but it is all a question of rooting power, and a bed of Chrysanthemums under an Apple or Pear-tree will soon starve it to such an extent that the fruit will be useless. If you wish for fruit of the finest that can be grown, plant your trees on good soil, and keep it solely to their use, for it is the worst economy to attempt to grow two crops on one plot of land, and to do this properly the fruit garden should be quite distinct from the flower or vegetable garden. If intermediate cropping is done at all it should be at such a respectful distance from each other that the roots of the flowers or vegetables cannot rot the fruit-trees, or assuredly the fruit-trees will get the worst of the contest.

JAMES GROOM, Gosport.

5132.—Forcing Strawberries.—The demand for forced Strawberries has of late years been very erratic, and the fancy prices generally fall to those who are close to and understand the market. Of course, the early fruits, if good, fetch the best price, but they are perishable goods, and want very careful packing, and should not be too ripe before gathering. The same thing depends upon what variety they are. For sale large fruits are best. Good British Queen always sells well. Try and find a customer before the Strawberries are ripe.—E. H.

— If you can get the fruits ripe towards the end of March or early in April, you may possibly make 8s. to 10s. per pound of them; but to do so requires a lot of heat and great experience and skill, while the plants will only produce a few fruits apiece, and the right sorts must be employed. Much depends, too, upon the size, quality, and colour of the fruit. To force them thus early the plants ought to be started very shortly now; but you must not push them very hard, or give too much water, until the flowers expand.—B. C. R.

5125.—Planting a Vine.—Plant the Vine early in March, when the buds are moving. Drain the tub by putting from 4 inches to 6 inches of broken bricks or other rough material in the bottom. The soil should be old rotten turf and a little old manure, mixed with a little bone-meal or Thomson's Manure. The Patent Silicate Manure is cheaper, and Vines do well with it. A couple of pounds may be mixed with each bushful of soil.—E. H.

5120.—Best Raspberries.—Carter's Prolific and Baumforth's Seedling are excellent varieties. Both crop freely, and have a good constitution. If an extra large fruited variety is preferred, cut out the latter and substitute Northumberland Fillet.—S. P.

— A splendid Raspberry—profitable, tree-bearing, and producing large fruit—is Superlativo, and this should certainly be one, whilst the others select either Baumforth Red or Red Antwerp, as both are good.—G. T.

— Fastoll, though smaller than some of the more recent introductions, is a very free bearer, and is still largely grown. Hornet, Norwich Wonder, and Superlativo are large-fruited kinds.—E. H.

5107.—Grafting a Cherry-tree.—Cherry-trees are generally budded in July or August, but they may be grafted early in April, when the sap is flowing freely.—E. H.

5090.—Rats in a garden.—M. L. Williams should write to McDougall & Co., Manchester, and ask them for their preparation for rats. The next step will be to find out the rat-holes, and apply the preparation as directed. There is really no excuse for those who are tormented with rats in gardens, when, as in the present case, they seem to harrow in the open ground. It is when they take up their quarters in trouble from a house, and drains that exterminating them becomes a serious matter.—D. W. P. C.

THE KITCHEN GARDEN.

LATE POTATOES.

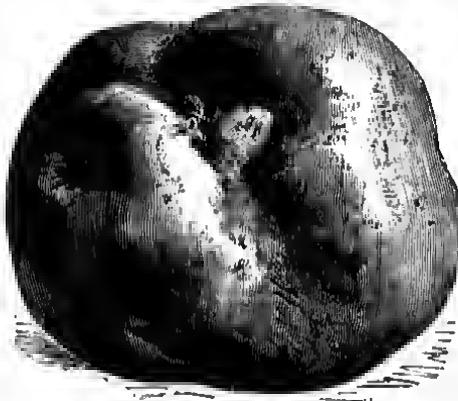
"W. H." and "R. S." enquire as to the characteristics of the Scotch Champion Potato, and also ask for the names of other good late kinds? In general qualities the first named (see illustration), when true, comes between the Scotch Regent and the Irish Rock, embodying the good flavour of the former and the hard constitution of the latter. Like other Potatoes, the eating quality varies much, according to circumstances as regards soil, climate, and cultivation; but it may be safely classed among good table sorts. Occasionally, when the locality and season are alike favourable to its development its table qualities are quite first-class. The Champion is a strong, rank grower, and should be allowed a fourth more space between the rows and sets than that which ordinary kinds require in planting. It is, perhaps, the latest field Potato to ripen, the haulm remaining fresh when that of all others is withered; it should, consequently, be planted earlier than is usual for late sorts generally in order to do it justice. It will grow and yield remarkably well on poor soils where other kinds would not succeed, and, altogether, is to be highly recommended for a main crop in every garden and farm where large breadths of Potatoes are grown. It cannot, however, be too prominently kept in view that, to fortify its disease-resisting properties, and also to secure at their best its other good qualities, a thorough change of seed should be made each season. Other good late kinds are as follows:—Magnus Bonum, Danbar and other Regents, the old Pink Eye, a capital Scotch Potato, and Schoolmaster.

KITCHEN GARDEN NOTES.

At this season of the year draining, trenching, where it may be carried out, the turning out of old rubbish-heaps, and turning coarse refuse may be attended to. Burnt refuse, of which there cannot be too much in any garden, is a most valuable fertiliser, as well as a capital preventive against insect pests, especially those of a root-eating nature. Instead of allowing all such coarse refuse to lie in a heap to decay, and perhaps be an eyesore as well, the quickest and best method is to burn it, not only to get it into a smaller compass, but for its valuable properties when so reduced. For heavy soils its value especially cannot be too highly recommended for pointing into the surface immediately preceding cropping.

Drainage.—If the soil is to prove productive it must be in an efficiently drained state, so that aeration may follow, as without this the crops cannot thrive. A heavily drained soil on account of its richness attracts frosts, especially late spring frosts, which often prove so destructive to the tender crops in low-lying positions. As a guide to go by, trial holes should be dug 2 feet or 3 feet deep, and if water collects in these it is quite evident that draining is necessary. Draining need not be a costly undertaking—that is, if there is an outlet for the water as it collects in the drains. To gauge the number of drains required it is better to lay out a certain number first, say 16 feet or 20 feet apart, and upon the completion of these other test holes should be dug intermediate between them, and if the water stands in these instead of draining away, it is evident that more are needed. The drains should be cut straight, taking out the soil with proper draining tools, commencing wide at the top, at least, in comparison with the depth of the drains, tapering down to there being just room to lay the tiles. This narrowing down is very important, as if the bottom should be wider than the tiles these latter roll about and cannot be properly fixed in their places. All cross drains should run into a main drain, which should be lower than the rest, and have an outlet to drain the water right away. The drains are best left open until the whole are formed, so as to note more clearly the drawing off of the water. When all is ready, a layer of ballast or small chinkers should be first placed over the tile before filling in the soil.

SOIL-BURNING.—The benefit of burnt soil is well known. Of course, this has reference to clay land, which often needs some such addition. Hard-burned material is of little value, excepting for ballast. Do not attempt large heaps, as these are the more likely to become hard burned. Small heaps are the best. To proceed with the work first prepare a fire with small coal, and when well alight this will act as a feeder to the smaller fires. A ring of clay should be formed about 3 feet over, and within which place the fire, taken from the larger fire prepared for the purpose. When a body of fire has been formed draw some lumps of clay around, sprinkling small coal amongst them,



Potato "Scotch Champion."

and as these became alight add other clay and small coal until the heap is formed. This may be about 3 feet in height, which is quite large enough for garden purposes on a small scale. If so desired the heaps may stretch out to several feet in length. No chimney is needed, as this would defeat the end in view, but if at any time it should burn through at the sides this must be promptly put right again. Directly the heap is sufficiently burned it must be quenched out.

CLEANING OUT RUBBISH-HEAPS.—When the ground is frost and snow-bound this is good work. Not that rubbish-heap material forms very good manure, but it is useful for heavy land, opening it up and adding humus, which this class of soil is so deficient in. It should be well worked over, forking out all the coarse refuse and burning it, returning the ash to the bank. Some freshly slaked lime may also be added, not merely for hastening decomposition, but for the destruction of the pupae and larvae of insects. After adding the lime allow it to remain for a week or two, afterwards again turning it well over. This material comes in very well for dressing ground intended for Potatoes.

5104. — Size of Tomato-house.—The length of a house for Tomatoes may be anything from 10 feet to 12 feet long up to that of Mr. Ladd's huge structure at Swanley, which stretches out to no less than 680 feet, though generally speaking the larger the better, as Tomatoes thrive best where there is plenty of space and air. As regards the width I consider that from 20 feet to 25 feet, or even 30 feet, is better than less, as it permits of two pathways being made, with two narrow side beds or borders, and one wide central one, and in this way one can get in among the plants better to train and trim them, or gather the fruit, while more light and air is also admitted among the plants. Again, a Tomato-house should be moderately lofty, for plants of most varieties will attain a height of 8 feet to 10 feet, or more, during the season, and on this account also it is better to be comparatively wide.—B. C. R.

—If profit is the main consideration the larger the house the better, as a large house can be built cheaper in proportion to size than a small one. A useful size would be 24 feet wide and 100 feet long, 8 feet to eaves, and 14 feet to the ridge. A path should run all round the centre bed may be 10 feet wide, and the side beds 6 feet.—E. H.

5114. — Growing two crops of Tomatoes.—You can certainly do as you suggest and

by taking the cuttings early—say, in May—and growing them on in 6-inch or 7-inch pots outside, and planting them in the houses directly you pull the first batch out there should be a break in the supply of not more than two or three weeks. Plants from seed sown early in January ought certainly to produce ripe fruit early in May, if kept moving on all the time. But by means of judicious "feeding" the same plants may be kept on fruiting right through until the end of October at least, especially in moderately lofty houses, such as these. Not long ago I saw a lot of plants that after fruiting from the beginning of May until July, and having reached the top of the house, which was low, were untied, bent down at the bottom, and then trained up again, and were thus kept going until the end of October—with plenty of nourishment, of course. Except in the depth of winter the plants do better planted out than in pots, while the labour of watering is also vastly less. After the end of October a good deal of heat is necessary to ripen Tomatoes properly, though it might be just managed in the smaller structure, which I imagine would be warmer than the other. A batch of late Chrysanthemums would probably be more remunerative on the whole. When cutting old plants down, the best way is to secure a young growth or two from the base previously, then cut away the old stem, and with a genial temperature and a light dressing they will grow away all right.—B. C. R.

5137. — Culture of Seakale.—Early in March is a good time to plant the roots. Strong plants can be bought for about 12s. per 100. These would give a supply of Kale the following year. Smaller ones would do, but more time would be required to have them ready for forcing. Raising a stock of plants by sowing seed in April is very often practised. This is the cheapest way; but two years are required before satisfactory results are obtained. If this latter plan is adopted sow the seed in shallow drills 15 inches apart. The year following treat the roots as advised subsequently. Seakale is a very accommodating vegetable as regards the soil. It will succeed in any good garden soil, provided it is deeply dug and liberally manured. Heavy soil should be prepared at once, so as to be in good order by the time planting is done. Trench the ground 2 feet deep, leaving the clay at the bottom of the trench and retaining the top soil in its present position. Work in as much decayed vegetable refuse and road-grit as is possible within 1 foot of the surface. When the roots are received early in March cut off the crown just below the junction where the leaves spring from. If this is neglected the roots will throw up a truss of leaves from each crown, and the development of this will interfere with the future crop. The whole energy of the roots should be concentrated in the free growth of leaves and a crown in the centre, from which the succulent leaves that are edible the season following are produced. When the crown is cut off, two, and sometimes more, shoots spring from just below where the severance took place. These growths should be thinned down to one, choosing the straightest, of course. Plant the roots in rows 18 inches apart and 15 inches in the rows, if it is intended to take up the roots for forcing in the greenhouse, stove-hole, or any such building that is fairly warm and can be made dark. If the roots are to give their produce upon the ground where grown by covering them with pots and manure, three roots should be planted anglewise, 6 inches apart, allowing 2 feet 6 inches between each clump. In planting it is a good plan to fork the ground over again, leaving it loose when finished. Cover the heads with 2 inches of soil. The ground must be kept free from weeds during the summer, and constantly stirred with a Dutch-hoe. This accelerates growth, and the more this is encouraged the better are the prospects of success.—S. P.

5109. — Growing Mushrooms.—To every five barrowfuls of fresh stable-mannure, after the longest straw has been shaken out, add one barrowful of sandy-loom, and thoroughly blend the whole together. It will be better to collect sufficient to form a bed at the same time, and when the heap has got warm turn it over and intermix, and make up the bed, building it so that the size and depth of the bed should be greater if made in an unheated building than where artificial heat is used. If made against a wall in a cellar a good width will be 3 feet,

15 inches deep at the back, and one foot at the front. When made on the floor of the building, make the bed in the shape of a ridge, 3 feet wide at the base, rising to 2½ feet, the sides being made round. This gives a good deal of surface for the production of Mushrooms, and such beds retain the heat a long time, and are easily covered should covering be necessary. Bury the loam, then there is not much danger of overheating, and the beds are more lasting, and time is saved in turning and fermenting the manure by the old system. When the temperature of the bed is steady at 80 degs. to 85 degs. it may be spawned. This is usually done by breaking up the spawn into pieces about 1½ inches in diameter, and placing them just under the surface of the manure about 9 inches apart, all over the surface of the bed. After spawning make firm again, and when the spawn is running freely place 1½ inches of sifted loam over the surface of the bed, and beat down flat with the spade. A light covering of litter will check evaporation, and if the peat declines too fast the covering may be increased for the purpose of keeping in the heat. The spawn must be good, and if several beds are at work in the building at one time there will be warmth, except in severe weather, without fire-heat; but it is always desirable to have some means of heating, as Mushrooms cannot be grown in a lower temperature than 55 degs.—E. H.

4927.—**Early Tomatoes for market.**—Respecting "Mr. H. Drury's" reply to the above query, I have no doubt but that this gentleman's seedling from Horsford's Prelude is a like variety to the well-known and highly-esteemed variety Conference, which latter was raised from Prelude. I grow Tomatoes by the ton, and have them going all the year round. I also give the greater portion of new varieties that from time to time appear a trial, and I could a tale unfold concerning many of recent introduction, which would not, I fear, please the raisers. There is, however, a variety which was sent me for trial by Mr. E. C. Ravenscroft, of Hield, Crawley, Sussex, named Hield Gem, and I have no hesitation in saying that it is the very highest type of excellence in the Tomato way that has yet come under my notice. The plant is a very close grower, and appears to do even better in pots or boxes than planted out. Even now (December 7) I have plants on slight bottom heat not 3 feet high, with four and five trusses—these not 6 inches apart—setting freely. The fruit is borne on single and double-branched racemes, bearing from five to nine fruits each, flat-tish round in shape, weighing from 5 oz. to 8 oz. each. The colour is grand, being a glossy brilliant crimson, and the fruit is solid and weighty. The flavour is not by any means the least point, and I can say that it surpasses all that I have ever tasted, and for eating in a raw state its refreshing sub-acid flavour is pleasant indeed. In addition to the above-named qualities it is early and comes on very quickly. In April this year I cut from this variety a few days sooner than from Sutton's Earliest of All, and the appearance was so far superior to the latter that I intend planting Hield Gem in all my early houses the coming season. I believe it is a seedling from Conference, crossed with a large-fruited American sort, and much resembles Conference in foliage, but of thicker substance, and the leaves have the peculiarity of standing out from the stem in a stiff horizontal position. As regards raising Tomatoes for early work so as to have fruit ripe in April, seed should be sown at once on slight bottom-heat, and when well up removed to a shelf near the glass in a temperature from 55 degs. to 60 degs.—E. F. L. S., Jersey.

5093.—**Seaweed as manure.**—In reply to this question, allow me to say that Seaweed is one of the very best manures that can be used, not only for the purposes named of a top-dressing to Seakale and Asparagus-beds, but of which naturally grow by the seaside, but also for the general run of kitchen garden crops. In this locality it is used extensively, as we have a good many allotments let to cottagers favourably situated for collecting Seaweed, as the tide ebbs and flows in creeks close by, and leaves a great quantity of Seaweed, that is collected at low water, and dug into the land when quite fresh, and I have been assured that not only are the crops finer than where ordinary manure is used, but that root

crops, such as Carrots, are much less attacked by wireworm, and the slugs do not appear to like the saline properties of the Seaweed. As a dressing for flowers it is highly spoken of, and on light soils it retains the moisture for a long time.—J. G., Gosport.

5053.—**Replanting Seakale.**—You may safely transplant this now, or at any time, up to the date it commences to grow, but, except for forming new beds, it is not necessary to transplant Seakale, for if it is strong it can be lifted and forced in heat, or covered with Seakale-pots, and then with fermenting material; but if the object is to form permanent beds for forcing in the open air it is now a good time to perform the work. Any good kitchen garden soil will grow Seakale, although it naturally grows in loose, shingly soil by the coast. Young one-year-old plants are the best for planting to form permanent beds. Seakale is readily increased by pieces of the fleshy roots cut into sets, and allowed to form crowns before planting in open air in April.—J. G. H.

5131.—**A large Tomato.**—Yes, there is a large-fruited variety of this name, but it is a great coarse thing, useless for market purposes and but little good for anything but curiosity. From what I have seen of it I would not give it house-room.—B. C. R.

ORCHIDS.

CATLEYA WARSCEWICZI.

In reply to several enquirers, "B. C. D.," "H. R.," &c., this plant is doubtless more familiar to some Orchid growers as *Cattleya gigas*, a name it obtained in Belgium when first introduced in a living state, and before it was recognised as being identical with the *C. Warscewiczii*, of Reichenbach, which had been



Cattleya Warscewiczii.

discovered by the grand old collector, whose name it bears, as far back as 1848. It is a native of the province of Medellin, in New Grenada, where it is said to grow upon the branches of the forest trees, which are well exposed to sun and air, and which grow in the neighbourhood of water. It is one of the noblest-growing and most magnificent *Cattleyas* which bloom that has yet been discovered, but it has not hitherto proved to be so free

flowering as many others of the *lanceolata* section. Neither is robustness a sure indication or guarantee of flower to follow, for I have seen very many more plants blossom which had made medium-sized bulbs than I have of the very large and robust form. It has stout pseudobulbs, which support a large single oblong-ovate leaf, which is very thick and leathery in texture and deep green. The scape (see illustration) rises from between an oblong spathe and bears from three to five flowers, which measure from 7 inches to 8 inches in breadth and some 9 inches or 10 inches in length; sepals and petals soft-rose colour or rosy-ruddy; lip very large; the sides erect, rolled over the column; the front part large and spreading, crisp at the margin, and of a rich purplish-crimson, flushed with violet in front, and bearing an eye-like blotch on each side of the throat, which is usually some shade of yellow. It appears to generally flower during spring and summer, but I have seen it blooming in November. The variety *Sunderiana* is found in the district about La Palma, and affects the same positions as the typical plant. The large spreading front lobe of the flower is rich purplish-tinged. Its treatment should be the same as that so often recommended for *Cattleyas* of this section, but it appears to enjoy a slightly higher temperature than most of them. M. B.

ONCIDIUM FLAVUOSUM.

In reply to the earnest entreaty of "Orchid," I appeal the following reply, also to the appeal of "A Perplexed One." Both my friends appear to have succeeded in a fair way with the cultivation of this *Oncidium*, as the first-named one has the plant now flowering. My other correspondent has it showing flower, but one of his perplexities lies in his finding some buds in the morning eaten off and lying upon the stage, and he has kept a careful watch and he does not think there is anything to eat them off in the two houses. Well, that may be all true enough, but my friend says nothing about the cockroaches. Has he, too, kept a careful guard over these pests? If so, why then I give his problem up; but if not, say about the extirpation of the cockroaches speedily. It is not often they trouble themselves about such an Orchid as *Oncidium flexuosum*, but generally select some finer and better thing, some plant that the owner sets more store on. Now at once get some phosphorus paste and put it down on and about the plants; also search and look in any and every empty pot there is in the house, go carefully through your plants hanging in earthenware baskets, and all those occupying standing pots, especially those with slits or openings in them, and dip them carefully and thoroughly, and any cockroaches that are dislodged kill by crushing them under your foot. It is quite astonishing what destruction is wrought by these things, when one only has a few flowers as at this time of the year, which perhaps would not be noticed in the fuller flowering season, or it would not give so much concern, while the enemy is growing both in size and numbers. Now for my friend "Orchid," and his entreaty. He says his plant is flowering, but that it is bent in what I used to call a sprawling manner, and the roots from the bulbs spread out into the atmosphere. When these plants cease repotting, should he put the roots down into the soil? Well, no, I should take a fair-sized bunch of wood and put into the pot with the plant, and so bring it upright by tying it with lasso, and allow the roots to be quite free if they so liked, and when I repotted it still allow the roots to rove at liberty, if they feel so disposed. I never knew the roots of *Oncidiums*, *Cattleyas*, or any other Orchids to take kindly to the soil into which they were forced. Train them over the soil and give them an opportunity of going in if they choose, but do not hurry them by force. MATT. BRAMBLE.

DENDROBIUM KINGIANUM.

"BERMERTIN" asks for the habitat and right treatment of this pretty little Australian *Dendrobium*. I have had some large specimens of this species, but many of the Orchid growers of the present day have not heard of the plant, and if they had seen it, they may have

not seen it, and therefore have no idea of what it is like. This Dendrobie was discovered by Bidwill in South Queensland just about fifty years ago, and sent to Kew, and named by him in honour of Captain King. The plant is very distinct in growth, which makes it all the better remembered, being erect, with the bulbs clustered. These are each about 3 inches high, swollen at the base, becoming smaller towards the top. Upon the top are borne the leaves, which are usually in pairs, though sometimes more than double that number are found on them, and these are of an oblong-lanceolate shape, and thick and leathery in their texture. They are persistent, lasting for several years, the colour being of a rich deep-green. The raceme comes out from the top of the stem between the leaves, and is slender and free-flowered, the flowers being about an inch across, and of a dull purple shade of colour, varying somewhat in different individuals, but in none so much as to make it a showy plant, although it does belong to the Speciosa section of the genus, to which such kinds as *D. bigibbum*, *D. Phalenopsis*, *D. laminum*, *D. superbiens*, and several others that could be named also belong, and these are fine ornaments in our stoves. But to return to *D. Kingianum*. The flowers last a long time in perfection, and thus tend to make amends for other shortcomings, but I recently saw in Mr. Smee's garden a fine white form with much longer spikes, having racemes about a foot in length, and bearing many pure white flowers. It is called album, and is very well named. There are other forms with whitish flowers, but near the typical plant in size and in the length of raceme. Now, a little about the culture of this plant, which may be grown on a block of wood, but this is only in the young state, for this its tufted habit suits it capitally. In a pot it succeeds well if the receptacle is well drained, keeping the plant well up to the glass in order that it may have the full benefit of the light and all the sun that shines. I have, and many others besides me also have, kept these plants cool, in fact, quite cold, because they come from Australia, but we have found by experience that this was very wrong, and where we have had the plant to thrive the best was in the Cattleya house. Pot in good peat-fibre and chopped Sphagnum Moss, and rest the plants in the temperature of the cool-house. They bloom during the winter and early spring months.

MATT. BRAMBLE.

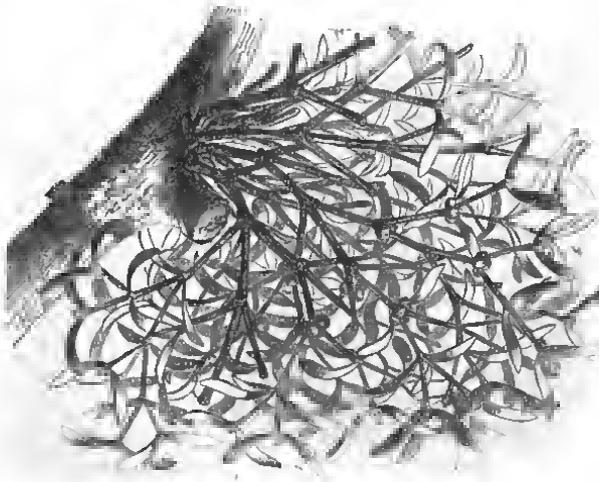
5128.—**Orchids for a cool greenhouse.**—The following will succeed well in a cool greenhouse, and the best of all for the purpose is *Cypripedium insigne*, which produces a wealth of bloom at this season of the year. It is cheap, easily grown, and will thrive well in an ordinary greenhouse. It is a native of Sylhet, and there are many varieties, *Mauici* being one of the principal, but if you get the ordinary form it will suffice at present. During the summer the plants require no artificial heat whatever, and Orchid growers, as a rule, keep them in far too high a temperature. The flowers of the *Lady Slippers* last long in good condition after being gathered fully three or more weeks, and are proof against fogs, which is a very important point in your case, as you live in a town. *Adiantum* is a useful species. It is a compact growing, ever-green kind, the flowers bright orange-scarlet in colour, and blooms freely in the autumn and early spring, when it makes a bright show in the house as the colour is so distinct and vivid. It also lasts a long time in beauty. *Bletia hyacinthina* has rosy-purple flowers, requiring a good loamy soil and plenty of water during the growing season. *Calathea Veitchii* produces

racemes of bright-rose, and requires more heat than the others mentioned. It is not very difficult to grow, and produces its scapes from the base of the pseudo bulbs without leaves. You may also have *C. vestata*. *Cattleya Trianae* is a lovely Orchid, and suitable also for a cool-house as such *Odontoglossum* as *O. crispum* or *O. Alexandre*, which are really the same, *O. Pescatorei*, and especially the cheery little *O. Rossimajus*, which varies in colour, sometimes with more rose on the lip. The sepals are, however, as a rule, pure-white, also the petals, except that the latter are barred with crimson-chocolate, the lip being white. The flowers last a very long time in full perfection. *Cologyne cristata* is one of the most popular of all Orchids, its flowers are pure white, except a little yellow on the lip, and borne in racemes. Then you may also select *Dendrobium nobile*, *Lycaste Skinneri* (a very useful species, the flowers large and pure white in the more expensive variety *alba*), *Masdevallia tovaensis* (pure-white, flowering at this season), *Mesospinidium sanguineum*, *Oncidium tigrinum* (the flowers richly fragrant like Violets, the lip yellow, sepals and petals barred with chocolate colour), and *Orchis foliosa*, a splendid Orchid for pot culture. The last mentioned is quite hardy, but does well in pots. It bears a bold spike of bloom. C. F.

TREES AND SHRUBS.

THE MISTLETOE.

WITH the approach of Christmas and the general use of this parasitic plant (see illustration), a few of my readers may like to have a note upon its propagation and culture. *Viscum album* is the botanical name of the Mistletoe, and it has been used upon festive occasions for centuries past. It is a native of Europe, and also grows wild in Great Britain. A great many ancient superstitions have been associated with the Mistletoe, and at one time it was supposed to possess considerable medicinal virtues. But I will get closer to my subject, and first of all state that this parasitic plant prefers the Apple as a host plant. It may be grown upon several others, and the following represents the order in which they are esteemed by this shrub: Poplars, with the exception of the Lombardy variety, *Crataegus*, *Limes*, *Maples*, and the *Mountain Ash*. I think its rareness upon the Oak, combined with the religious ceremonies already associated with that tree, had much to do with the Druidical worship accorded to it. In France, and also in the fruit districts of Herefordshire, the orchards are much infested with it, and a regular trade



Mistletoe on an Apple-tree branch.

is carried on each year. Some authorities state that no harm accrues from its presence, but as it derives the whole of its nourishment from the host plant, with the exception of what it may obtain atmospherically, I do not think this theory will hold good. However, it does no little harm that my readers need not fear to

grow a tuft or two of their own. The berries are not ripe at Christmas, and to be successful some of them should be saved upon a branch either stuck into damp soil or placed in water until the early part of March. A better plan still is to procure a few from a growing plant; but as the birds are very partial to them there is some little difficulty in this. The bark of a young shoot between two and three years old is best to place them on, and although they may be simply crushed upon it by the fingers, it is much better and safer to proceed as follows: Make a couple of cuts in the bark of this shape >. It is of importance that the top of these cuts face to the centre of the tree; why, I do not pretend to say. Lift the tongue of bark gently, and press the berry beneath; and the tongue will retain the seeds until they germinate. Perform the above operation upon the lower side of the branches. There are two reasons for this; first, it is more protected from birds and sun; also the water from a succession of wet days will not put a stop to germination. During early summer, when the seed has produced a couple of leaves, bright sun will often wither them up before sufficiently established upon the host plant. This is avoided to a great extent by placing them on the under part of the branch, and birds are kept away by a little muslin being fastened around the spot. There is no harm in trying several, because the majority of them will perhaps succumb during the summer; if not, any overabundance can be reduced by tearing them away. P. U.

FORCING SHRUBS, ETC.

AFTER the turn of the days it may be deemed safe to introduce into a moderate warmth a few plants each of the hardy shrubs which have been duly prepared for early forcing, by correspondingly early potting in the case of home-grown material, if not already established and previously forced, or by using imported plants for first early work. One of the most reliable of all shrubs for the earliest use is

LILAC CHARLES X.; it will force well in a fairly brisk heat, although I would not advise undue haste when it can be avoided. Another Lilac of which I am disposed to think we shall see a good deal more of is that called *Mme. Marie Legraye*; it is not apparently quite so dwarf as Charles X., but it flowers very freely whilst still of small size. Being a pure-white it is an excellent companion to the first-named. These I start early, on a bed of leaves with a gentle bottom heat under pot. Vines already breaking. The moisture thus obtained will assist an early break without the foliage getting too much in advance of the flowers. Large plants of Lilacs which are still in the open ground, but are intended for forcing, had better be lifted and stood in boxes or baskets in readiness with some soil pressed firmly around the roots, but unless compelled to do so I would not start these plants too soon. Next to the Lilacs, note should be taken of the

EARLY RHODODENDRONS; those which flower naturally whilst the weather is still cold are the best kinds to select for early flowering. Of these the various forms of *R. Nobleanum* in scarlet, rose, and light shades of colour can hardly be said to require forcing, flowering so exceedingly early in a natural manner. I have often wondered why more use has not been made of this valuable early Rhododendron. Then there are the varieties of *R. præcox* and also one called *Early Gen*; these being dwarf kinds do not occupy too much, whilst they flower profusely, being useful either for cutting or in the conservatory. Of the early deciduous Azaleas, the *mollis* section are by far the best; where these have prominent buds and a good number of them, they should be started with the Lilacs. For the earliest blooming, I prefer those plants of *A. mollis* which have been potted up for one or two years and have plenty of roots without any of the check consequent upon lifting and potting. Of

ROSES, only those which are thoroughly established should be started early, and these even should not have any undue amount of heat. In private gardens the Peach-house just about started will suit them to a nicety. A few plants of the *Gelder Rose* duly prepared can like-wise be started soon. Of plants which I consider it advisable for the present to defer

placing in heat are the Deutzias, *Prunus sinensis* flore-pleno, *Spiraea confusa*, *Andromeda floribunda*, and *Kalmia latifolia*. In a few weeks these will give much better results, taking them then in successional order as quoted. What is really needed when dealing with these early-flowered shrubs is plenty of moisture to induce them to start into growth kindly. Three or four syringings during the day, with another at night-fall or in the evening, will be none too much. Do not allow them to suffer in the slightest at the roots from want of water. Where it is possible to accommodate them all upon

A BED OF LEAVES with a gentle warmth, moisture also arising therefrom, they will do much better than if stood upon slugs or on a dry bottom. As to successional batches, it is only necessary to say that a few plants introduced at the time of each respective kind is infinitely better than the hegec number with longer intervals between each. Later stocks now in the open should be carefully looked after; if they are not protected yet at the roots by being plunged, no time should be lost in doing it. For this I prefer a bed of ashes, the plants being plunged 2 inches or 3 inches over the rims of the pots. This saves the pots from breakage, and is also better for the plants themselves. Further protection can be given if needed by a top-mulching of short litter; this will safeguard the removal of any should we have a severe frost. J.

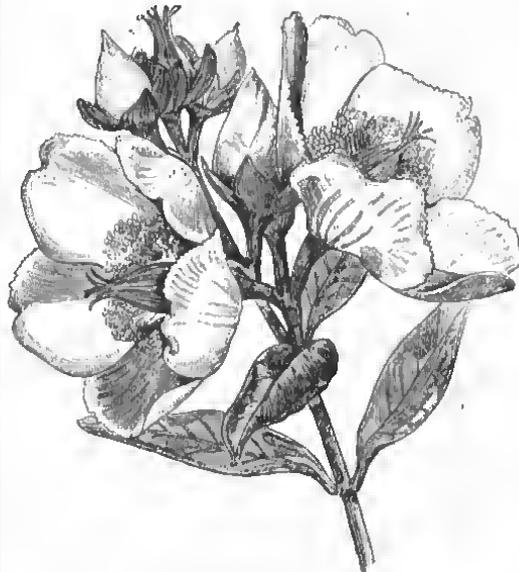
WORK IN SHRUBBERIES.

Now that the shrubs, after the leaves of the deciduous plants and trees have fallen, are being cleaned up and put in order, there are also a few additional items worthy of notice. Of course, the cleaning up and making tidy can be done in a perfunctory manner and nothing further attempted, but by taking note as the work proceeds, it is often possible to improve the appearance by removal here and there. Where shrubs are overcrowded (and who has not seen them thus?) it is thus easy to remove a smaller one than is being overgrown by a larger. If this kind of work be left until a more favourable opportunity, that will not come for possibly another twelve months; so my advice is to do such removing at once. As the work proceeds it will not be a difficult matter to find room for these surplus plants; at least, I do not find it so. Deciduous shrubs should also be pruned where found necessary, but by all means avoid the clipping process as illustrated in a practical, but ugly manner oftentimes in our public gardens. I have a strong aversion myself to the shears. On the other hand, by the judicious use of the knife or pruning scissors in thinning and regulating the growth, a deal of good may be done; and if this work be always followed up, the shrubs will always be kept in order. Those remarks have also an equal bearing with overgreen shrubs. In doing the work, however, in any case the flowering proclivities of the plants must be duly considered. At this time also there is another item worthy of notice. It is that of layering such as the *Aucubas*, the common and Portugal Laurels, or anything else available around the margins. This can be done easily by buying a few pegs always at hand, doing the work so as not to make it unsightly. No further attention will be necessary, but in twelve months' time there will be a lot of useful little plants at hand, which without doubt can be put to a good use. If so be they are not wanted at once, they can be bedded out in rows, to remain thus until a place is found for them. In this way I have propagated numbers of those shrubs, which are now large plants serving a good purpose, where otherwise the ground must have remained bare. In some spots swelling *Hollies* and *Rhododendrons* come up spontaneously; so also do *Yews*. These can be placed in more favourable ground and left for a year or two. *Laurustinus* I have also from seed now of a flowering size, which, if left where they germinated, would probably have succumbed before now. Commoner things, as *Horse Chestnuts*, *Sycamores*, &c., it is no trouble to secure where found necessary. In no way or another it is thus possible to keep the shrub presentable without any undue expense. A.

USEFUL SHRUBS.

St. John's Wort (HYPERICUM)

This genus contains some handsome plants, for the most part shrubs and under-shrubs, but including a few herbaceous perennials and annuals. The *Rose of Sharon* (*H. calycium*) is probably the most familiar; but there are other shrubby species of much beauty. Some of the perennials are good border and rock-garden plants, and the best of these is *H. olympicum*, one of the largest-flowered kinds, though not more than



A St. John's Wort (*Hypericum oligoneurum*).

one foot high. It is known by its very glaucous foliage and erect single stems, with bright-yellow flowers, each about 2 inches across. It furnishes handsome specimens that flower early, and its value as a choice border plant can scarcely be overrated. It may be propagated easily by cuttings, which should be put in when the shoots are fully ripened, so that the young plants may become well-established before winter. *H. Elodes* is a pretty native plant suitable for the banks of pools and lakes. *H. nummularium* and *humifusum*, both dwarf trailers, are also desirable for the rock garden. Owing to their dwarf compact growth, several of the shrubby species are well suited for the rock garden. Of these, the best are *H. egyptiacum*, *barbaricum*, *empetrifolium*, *Coris*, *patulum*, *uralum*, and *oblongifolium*, the one here figured. The last three are larger than the others, but as they droop they have a good effect among the cavellors of a large rock garden or on banks. *H. Hookerianum*, *triflorum*, *aureum*, and *uriviale* are among the kinds having some beauty; but the species from warmer countries than ours are apt to disappear after hard winters. G.

5110.—Plants in Rhododendron beds.

—*Lilium auratum* and some of the hardier forms of *lanifidum* will sometimes do well in Rhododendron-beds. Seeing, however, that there is a doubt about these, you had better plant the double and single forms of the Tiger Lily (*Lilium tigrinum*). These are quite hardy, and not so particular as regards soil as many of the other forms. For Rhododendron-beds you want erect-growing plants, and those that flower after the Rhododendrons are over. If there is sufficient room you may choose *tilloides glanduloveis*, as these grow erect and flower late in the summer. —J. C. C.

—This is the best possible position for Lilies of all kinds, and many other flowering subjects, hardy Heaths, *Andromedas*, *Gaultherias*, *Mezazias*, North American *Cypripediums*, &c. —E. H.

—If you read the replies about Lilies in the last issue you will get much information about the best plants for Rhododendron-beds, and nothing is more useful than the Tiger Lily. *Lilium auratum* is a splendid bulbous flower for planting in a bed of Rhododendrons, and the

soil is very suitable, whilst the rising shoots in spring receive sufficient protection from frosts. If the plants are not large you may have some of the dwarfier Lilies; but you will find all the information you need in the notes referred to. —C. T.

The Laurustinus.—Having regard to the extreme paucity of hardy plants that bloom naturally in the winter, it is somewhat surprising that *Laurustinus* are not much more frequently grown. How much more pleasing in form and beautiful now would five bushes be on lawns than are so many of the dark, dingy, flowerless *Panuses* so common in small gardens. I have seen several fine bushes of the *Laurustinus* blooming most profusely about Stribitton, and in front of one garden was an old hedge kept in place by annual pruning, almost the entire top and front of which were full of bloom. It is really a wonder that small *Laurustinus* are not commonly grown in pots for greenhouse decoration during the winter, especially in comparatively cool houses where tender plants fail to flower. —D.

5113.—Sun dials.

—I am not acquainted with any book on the subject of sun-dials, and I do not see how any one is to get practical matter enough to make a book on the subject, seeing that with a suitable dial and a compass it is not a difficult matter to fix them. Once in my time I had to assist in setting a sun-dial. The fixing of the base of stone was a simple matter for a practical stone-mason to do, the only difficulty being to get a perfectly level surface for the under side of the dial to rest upon. It was not so easy, however, to set the dial accurately, for the work was done in the autumn, when bright sunshine did not occur every day, without which, and the assistance of a compass, it is impossible to fix them in a reliable manner. My instructions from a clever London optician were to have the dial fixed punctually at noon when the sun was shining bright, and when the compass indicated its correct southern position. This would be at twelve o'clock, but we had to wait two or three days for the sun to appear to show its position at that particular hour. The slightest movement of the dial after it is once placed in position would, of course, make it inaccurate as regards indicating the correct time. In the case to which I refer a thin layer of Portland cement was spread on the stone base to receive the dial. This work was left to the last moment, when the dial was put on and afterwards adjusted at the right moment of time to its proper position. It was then weighted for an hour or two to allow the cement to set before the work of cleaning off the stone was completed. If you apply to an optician you will have no difficulty in getting one. Messrs. Negretti and Zambra, of London, supplied the one to which I refer. —J. C. C.

5087.—Name of a Lily.

—I should certainly say that the Lily is *L. speciosum*, sometimes called *L. hucifolium*. The bulbs should be replanted every two years, removing the small bulbs, and if you have low shrubs, such as *Kalmias*, plant amongst them, as this Lily likes a peat soil, and the richly coloured flowers are a strong contrast to the deeply coloured foliage of the *Kalmia*. There are several forms; allium, sometimes called *Kreutzeri*, is pure white and very beautiful, whilst *Melpomene* is deep-crimson, with deeper coloured spots; *roseum*, *rose*; and *punctatum*, white, spotted pink. —G. T.

5090.—Treatment of *Darlingtonia californica*.—This is a marsh plant, and succeeds best in peat and sphagnum moss. I put the plants or place them in pans, well drained, and mix with the peat and sphagnum peat should be good (strong peat) some coarse sand. Pot the plants firmly (not encumber the stem) to grow on the surface. The pots should be plunged to their rims in a tank of water. —C. D. B.

CHRYSANTHEMUMS.

NEW VARIETIES OF CHRYSANTHEMUMS.

With a view of keeping the amateur cultivators well posted up in the matter of new kinds of approved forms, I purpose describing them as they appear. An early notice of desirable sorts enables the small grower to make space for the new comers by discarding an equal number of older varieties where the conveniences for but just a certain number exists. I know of no body of cultivators that are more keen after new sorts than the amateur, and where exhibiting is practised it is an advantage to be in possession of new and fine kinds as early as possible. I do not propose to employ the terms used in catalogues for the description of all the varieties, because in some instances I find it difficult in making them agree. I prefer to use my own terms in describing the flowers, and to make a practice of not accepting a recommendation of any particular variety, except in cases where there exists no room for doubt whatever. The following belong to the Japanese section:

MME. THERESE REY is at once the finest white-flowered variety in existence. Well-developed blooms measure 8 inches in diameter, and of corresponding depth; the colour is white, with a faint tinge of cream, the florets are of medium width, and semi-drooping in habit, the growth is all that is desirable.

DR. MRS. WARD.—This is an American raised variety, with broad florets, which are hirante, the colour golden-anber, edged with brick-red; is pleasing.

PREMIER BOREL.—A flat-petalled Japanese of brilliant colour, this variety is charming (rose-magenta, a very warm rose, the reverse pale gold, which is visible as the flower expands). A variety possessing much merit.

ERICA PRASS.—An incurved Japanese of a pleasing shade of colour (warm-peach). It is a full, solid bloom, of good quality.

LOUISE.—For the amateur especially this is a deserving variety, producing splendid blooms on plants but 2 feet 6 inches high; the colour is flesh-pink, the florets are broad and massive, incurving neatly.

MME. EDUARD REY.—This Japanese is influenced in its colour by the time that the buds are "taken." Those developed from early "crowns" are pale-lilac, while those later are a pleasing warm pink. The florets are broad and curve at the tip.

LE PRINCE DU BOIS.—The colour of this Japanese is rich-yellow, fading with age to a softer shade. The florets are narrow, twisted, and have a drooping tendency. A very promising English raised seedling.

KENTON YELLOW is one of the best of yellow-flowered Japanese varieties, having a rich appearance; it is most striking as varieties of that shade are none too numerous.

MISS MABEL SCOTT.—The florets of this Japanese are narrow, flat, and full; the blooms are not of large size, but of excellent quality; the colour is golden-primrose, with a touch of bronze at the base.

MRS. CHARLES COX is a bronzy sport from M. Bernard, possessing all the characteristics in form of this Japanese, which to the exhibitor is important.

PETER PALMER.—This Japanese was sent on last year, but not much exhibited. It is a white of the purest class; the long sword-like florets make a full, bold bloom.

THOS. HEWITT belongs to the incurved section of Japanese. The colour is white, with pink stripes and mottles over the surface of the florets. A very desirable kind to grow owing to its excellent keeping qualities.

INTERNATIONAL.—This is an extremely large-flowered Japanese variety; the florets are flat, broad, and semi-drooping; the colour is lilac, with purple stripes; a bold, substantial flower, and for exhibition most promising.

ROYAL WINDSOR.—This bids fair to be an excellent decorative variety, belonging to the Japanese section; the florets are flat, pinky-white, with cream centre, as the flowers develop this tint passing away with age.

E. MOLYNEUX.

three buds from round the centre one, unless perchance the centre bud is malformed or injured, when the strongest of the outer buds should be selected, and the others removed. Large flowers can be obtained on dwarf plants by cutting down the plants to within 3 inches or 4 inches of the soil about end of May, and taking the first bud that appears on the new shoots. Dwarf-growing varieties that do well on a crown bud are best for this purpose.—E. B., Winchester.

5134 & 5138.—Outdoor Chrysanthe-mums.—Two correspondents inquire about outdoor Chrysanthemums. I am pleased to see that great attention is being taken in this interesting and important class of garden flowers, and with a proper selection one may have them in bloom from midsummer until November. The less the plants are "coddled" so much more satisfactory will be the result, as the Chrysanthemum is quite hardy when grown in the open, and ordinary soil will suffice. I do not care greatly for the summer-flowering varieties, as we have then plenty of other showier things in the garden, and Chrysanthemums practically all the year round are a little too much. It is always a mistake to overdo a thing, as when the proper season for the flower comes round one has but much interest in it.

Firstly, as regards the soil; this must be rich and well prepared, and if you propose to grow the plants really well, make the soil ready at once, and leave it rough for the weather to pulverise, and so to dry, sweeten. Good Chrysanthemums may be got from vigorous suckers, which will make strong plants. Late spring is a good season for replanting, and each plant must be firmly staked. Disclodding, if not carried out to an extreme, is important, but only remove a surfeit of buds, as then the flowers remaining will be larger. The following varieties bloom in early autumn, and are all of good colour. This is of the utmost importance, washy, delicate tones being quite out of place in the garden where one wants a bold effect.

Alies Batchelor, a sport from a well-known outdoor variety named Lyon, has reddish flowers, shaded with orange. It is Pompon, like all those mentioned, and the reason for preference for this class is that the flowers throw off the rains better. Golden Shah (is a splendid yellow), Lyon (rose-purple), Pierce's Seedling (bronzy-yellow, and a good sturdy variety). The following are Japanese kinds: Alex Dufour (rose-purple), Arthur Crepey (light yellow), Comtesse Foucher de Careil (bright-orange shade), Feuille Bengale (orange, touched with crimson), Mme. Desgrange (a really unimpeachable kind), La Vierge (pure white, a lovely variety of bushy habit, and smothered with pure-white flowers), Mrs. J. R. Pitcher (bluish-lilac), Mons. E. Pynaert Van Geert (yellow, suffused with red), Rio des Precois (deep-crimson), Souvenir de M. Menier (crimson-red), and amongst the November kinds the purplish-rose Jules Lagravere, the bright-yellow Jardin des Plantes, and the old Emperor of China, also called Cottage Pink, a very free and graceful variety. If you plant plenty of these the garden will not want for colour at this dull season of the year.—F. P.

5138.—Chrysanthemum in the open ground.—When a proper selection of varieties is obtained a grand display can be had in the open, provided, of course, the plants are well attended to during the summer in the matter of cultivation. It is useless, however, to expect those sorts that usually are flowered under glass, such as the Incurved section, and the largest of the Japanese to give flowers any way near what the same varieties would under more favourable conditions. A proper selection of sorts that are best adapted to this form of culture should be chosen, the cuttings inserted early in January in a cool-house or frame, growing the plants on sturdily, and planting them out in the spring in well-prepared soil. If the weather is hot and dry during the summer a mulching of half-decayed manure laid on the surface for at least one foot around the stools or roots will assist the growth by maintaining the soil in a moist state. If some old roots could be obtained divide them into pieces, each having four or six shoots springing from the top. The month of March is a good time to make a new plantation from old notes. The following will be found a good selection:

Mme. C. Desgrange (white), Mrs. Hawkins (golden-yellow), G. Wernig (pale yellow), Mrs. Bunell (primrose), Mlle. Leon Lassali (creamy-white), M. Gustave Grunerwald (silvery-white), L'Ami Conderet (sulphur), Blushing Bride (rosy-blush), Precoite (golden-yellow), Mme. Picoal (light rosy-purple), Lady Selborne (white), Emperor of China (silvery-white), President (acorn-shaped), Solomon (rose-carmine), Alexander Dufour (rose-purple), Sœur Melanie (white), Ruby King (rich reflexed), California (yellow), La Vierge (white), Pierce's Seedling (bronze-yellow, golden-lilac), and White Cedar Nulli, Flora (yellow), L'Ami Couduchet (pale-yellow), Crimson Precoite, Mand Pitcher (bronze, free-flowering), Source d'Or (orange, gold-shading), and Leon Collin (bronze-yellow)—E. M.

5102.—Japanese Chrysanthemum.—The following are the names of a few kinds which have flowers of various shades of crimson and red, and this colour to me is the most pleasing of all, being so rich and decided: F. Tarks (reddish-maroon, a fine shade), J. Shrimpton (crimson-scarlet, very fine, one of the best of all Chrysanthemums, both for form and colour), Vice-President Calvat (crimson-red, the reverse of the petals gold colour), William Sewant (rich crimson, a deep, lustrous shade), G. C. Schwabe (carmine-rose, the florets long and twisted), Albion Lunden (velvety-crimson and carmine, a very fine flower), are shown well at several exhibitions this season. Cesaro Costa (deep-red, the florets broad and of great length), Edwin Molyneux (rich reddish-maroon), Jules Tussaint (bright reddish-carmine), M. Delux (red-crimson), M. H. Jucotot (crimson), M. Munsilluc (crimson-red), M. N. Davis (deeper shade of the same colour), Mr. C. Orchard (carmine-red), Stanstead Surprise (crimson, silvery reverse to the florets), and W. W. Coles (light-red, the florets long and broad).—C. T.

—The nearest approach to the colour (red) that I know is to be found in the following. They are more crimson, however, than red. As far as I know a pure-red variety has not yet been obtained: G. W. Childs (dark velvety-crimson), Elmer D. Smith (cardinal-red), Cesare Costa (dazzling-red), Mohawk (maroon-crimson), Triomphe du Nord (crimson-maroon), M. William Holmes (chestnut-red, faintly tipped gold), John Shrimpton (dark velvety-crimson).—E. MOLYNEUX.

5067.—Names of Chrysanthemums.—These varieties are quite distinct, Boule d'Or being a strong-growing, large-flowered Japanese variety, with twisted yellow florets, while Source d'Or is a smaller-flowered Japanese variety of a lovely bronze colour, one of the most decorative varieties in cultivation.—E. B., Winchester.

5119.—Pompon Chrysanthemum.—The varieties representing this section do not have incurved blooms. The true Pompon has short flat or fluted florets, which spread regularly or stand erect. Those which are round like a ball and of large size, smooth in their petals, belong to the Incurved or Chinese section. Those with loose incurving florets, but broader and longer, belong to the Japanese section, but are distinguished from the ordinary type, of which Avalanche is a specimen, and are termed Incurved Japanese.—E. M.

—One cannot judge of the names of the varieties from your vague description: but several of the Japanese, including Count de Goring, Mrs. Wheeler, and others are Incurved.—E. H.

5124.—Chrysanthemum for South Africa.—Plants for despatching to foreign countries need properly preparing, or else the chances of their reaching their destination alive would be small. If the cuttings are inserted in January and grown in cool quarters, thoroughly hardening them off, they will be ready for despatch by the early part of April. Shake the

5072.—Disbudding Chrysanthe-mums.—The usual practice is to remove the

bulk of the soil from the roots, pack them in damp Moss, and bind each one in a separate piece of oil silk, which prevents the evaporation of moisture. Place the plants firmly in a box, with the leaves exposed to the light, and hand them to the care of the captain of the ship with instructions to give them water occasionally. — E. M.

5108. — **Single Chrysanthemums.** — Insert the cuttings singly in pots 2½ inches in diameter in sandy soil the first week in January, placing the pots under halllights in a cool-house. Keep the frame close until roots are formed; except for an hour or so every morning, when the light should be removed to dissipate condensed moisture on the glass. When the plants are established in these pots remove them to a position near the glass, still in the cool-house. Here they will grow stonky by obtaining non-light and air. When 5 inches high pinch out the point of the shoot to induce the formation of side-shoots. When these have grown another 3 inches long take out the point of each again. Afterwards do not interfere with the progress of the shoots, but allow all to grow away uninterrupted. Numerous side-shoots will push from the nodes of the main stems for fully 1 foot downwards. These will give a quantity of flowers, and enable the cultivator to cut sprays from 1 foot to 2 feet long, smothered with blossoms. Shift the plants to larger pots as the roots reach the sides until the strongest are in 9-inch pots and the remainder in 7-inch and 8-inch ones. A compost of three parts fibrous loam, one part of partly-decayed horse manure, with an addition of sharp silver-sand, according to the state of the loam, heavy or light. To every bushel of the compost add 1 lb. of Thomson's Vine-manure. Pot the plants firmly to induce them to make short-jointed and firm wood. An open position during the summer out-of-doors, where the plants will receive all available sun-light, is necessary. Strict attention to supplying the roots with water is a point to observe. If the plants suffer for want of it the foliage will decay prematurely, thus spoiling their appearance as decorative plants. When the pots in which the plants are to flower are full of roots a stimulant of some kind should be given, such as liquid-mannre from the farm-tank, or that made by placing sheep, cow, or horse-manure in a bag in a tank of water, adding a small quantity of soot. In the absence of these things sprinkle a small quantity of any one of the many artificial manures advertised on the surface, watering it in with clear water. Do not, however, err on the side of too strong a dose or the roots are liable to be burnt, thus causing injury to the plants. A stout stake placed to each will be sufficient to support the branches, these being tied loosely to the stake. — E. M.

5071. — **Using a lawn-mower on tennis-courts.** — It is well to give the lawn a light cutting and rolling now or rather earlier, but during the winter very little attention is necessary, practically none at all. In the spring and early summer, however, there is much work to be done, rolling it occasionally, and mowing when necessary. It is not wise to let the grass get too long, as is sometimes done. At that time, before beginning to mow regularly, it is well to go over the grass very carefully, and remove Dandelions, Daisies, Hawkweed, and such like things, by spudding them out. This is the best and most effective method of dealing with them. — C. T.

— After October the lawn-mower should be cleaned and put away for the winter. At other seasons the lawn should be mown as often as is necessary. Generally speaking, once a week will do; but when the grass grows very fast in warm spring weather it may require to be cut twice a week. The roller should be used frequently, especially during spring. — E. H.

5121. — **Peat-Moss Litter.** — Peat-Moss litter after it has been used in the stable, is a good fertilizer for manure-poor land. Peat-Moss litter may be used for planting pots in in a 1901 frame before it is used in the stable, but not before. — E. H.

OUTDOOR PLANTS.

LILIES IN THE GARDEN.

THESE noble garden flowers have only within recent years been planted largely in the best possible way, and that is among shrubs. At one time it was considered suitable for pots alone; but under these conditions the finest growth and bloom were never obtained. Planted in the open, however, among Rhododendrons it is thoroughly at home. I was once much struck by the appearance of *L. elegans*, or *L. Thunbergianum*, as it is more often called, planted among dwarf, dark-leaved shrubs, *Kalmia*, &c. The contrast of leafage and flower was delightfully rich and telling—an unusual association of colour that is not seen in many gardens. We may make use of almost every Lily in this way, even *L. longiflorum*, which is often supposed to succeed in a pot in the greenhouse.

L. ELEGANS is a splendid early Lily, and now cheap, while there are many varieties differing widely in habit and colour of the flowers. The tallest should be planted among the shrubs, and in large spreading masses there are always openings through which can ascend the stately spikes of brilliantly-coloured flowers, reserving the dwarf kinds, those that grow only

full beauty of the variously coloured flowers is obtained. The bulbs are in the soil that suits them, and the growth is screened from heavy rains, cold winds, and late frosts. Those who have no large clumps of shrubs to plant it in should choose a sheltered situation for its position, not exposed to the full glare of the midday sun, and where the soil is rich and well drained. It will succeed in ordinary garden material, if this is well manured, but it likes best an admixture of peat and loam. The finest results with *Lilium auratum* have been obtained by planting it among Rhododendrons, and when once established amongst them there is no need to disturb the roots for several years. Varieties of *Lilium auratum* are many. There are so many beautiful gardens in England unadorned with Lilies planted in this way that it is important to make special allusion to it. Rhododendrons, or clumps of some kind, abound in every garden, but present a monotonous effect when their season of flowering is over, unless relieved by a rich display of bloom, as here advised. It relieves the scenery of tamenness and gives colour in the autumn. Some thought is now given to the autumn season of the year, and rich effects are gained by the free use of Michaelmas Daisies and Lilies. Writing of *Liliums* reminds me that the common



OUR READERS' ILLUSTRATIONS: *Lilium testaceum*. Engraved for GARDENING ILLUSTRATED from a photograph sent by Mr. E. Baden Bengier, "The Grange," Knutsford, Cheshire.

from 1 foot to 18 inches in height, for the outside. Such varieties as the apricot-coloured *alutaceum atro-sanguineum* (deep-crimson, height 1½ feet), *Van Houttei*, *fulgens*, *citrinum*, or *Prince of Orange* (orange), and *cruciatum* (crimson), are all of dwarf growth, and adapted for edging peaty beds filled with shrubs. In growing the Lily in this form there is very little trouble occasioned. The soil that suits such shrubs as the Rhododendron also agrees with the Lily, and the growth protects the tender rising stems in early spring, when, except for this protection, they would suffer from frosts. A top-dressing of manure each year will keep both shrubs and Lilies in vigour, but it must not be dug in.

LILIUM TESTACEUM (*Nankeen Lily*), figured above, is a distinct and fine Lily that does well in the soil that will suit Rhododendrons. The best Lily, however, for planting in this fashion is *L. auratum*, and I have seen it very fine at Kew Gardens in the autumn months, as there it has been made liberal use of for the enrichment of the scenery. The large masses of Rhododendrons on either side of the main walk are generally a picture of colour in autumn, the bold spikes of this Japanese Lily appearing in prominent places. The flowers large, numerous, and finely coloured, finer far than anything we can obtain in pots. It is under these conditions that

L. CANADICUM seems to have recovered in part from the disease that threatened to obliterate it, and the finest results have been obtained through massing the clumps together. In one West of England garden that I remember, placed on the side of a hill and fully exposed, there were large colonies presenting a sheet of purest white, and very beautiful on a cool July day. Such an effect should be repeated in large places where there are ample scope and opportunity for bold breaks of colour. It is a common and miserable plan to dot the Lily here and there in borders. A single spike gives little notion of the full beauty of several together; and if it is not possible to plant them among shrubs form distinct groups of them in large beds near the house. Two or three years ago, when in a fine old Sussex garden, I saw a mass of the Swamp Lily (*L. superbum*, a stately North American species), and this was delightful. It is very tall in growth, fully 6 feet or more; the stems are purple in colour, a rich contrast to the gay flowers, borne in a terminal cluster, and dancing in the breeze. This Lily may be grown among shrubs, enjoys a peaty soil, and is charming by itself.

THE CANADIAN LILY (*L. canadense*) is more common than formerly. Its orange and brown spotted flowers, borne on slender stems, are welcome in late summer, especially when appearing from amongst an undergrowth of shrubs. It succeeds well in London, and should be made use of in the parks and open spaces, which require colour in the declining days of summer. The Orange Lily, *L. davuricum*, *L. giganteum*, and *L. chalcedonicum* are good garden Lilies, but the last of the trio is best seen in northern counties or Yorkshire, where it is common in cottage gardens, and of finer growth than in more southern districts. Few Lilies thrive more freely than *L. Martagon*, the variety *dalmaticum* in particular. It is an exceedingly beautiful form, very telling when allowed to form a large clump, or establish itself in the wilder parts of the garden. Album is a suitable companion to it, and, like all the forms of the *Martagon* Lily, quite hardy, very free in growth and bloom, preferring shade, but not refusing to grow in the sunlight. I have referred above to *L. longiflorum*, and another reference to it may here be made to dispel the idle talk that one so frequently hears as to its thriving only in pots. I have seen bulbs planted among dwarf shrubs that were flowering remarkably well, and had been transferred two seasons previously from pots. The first year, of course, there were no great results, but the following season the plants made headway, and produced a delightful display of the most compact-shaped blooms,

quite as fine and as pure as, even more so, than those from under glass. This is an instance of the adaptability of the Lily for the open garden, and a good way to use what is always regarded as of value for pots alone. It is neither necessary nor desirable to give merely names, but there are a few groups that should be considered when planting Lilies in the open. These are the handsome Californian Panther Lilies—formerly *L. pardalinum* (Fig. 3)—stately, bold, and graceful kinds, with stems rising to a height of 8 feet, displayed to best advantage with shrubs as a ground work. It would be unfortunate to place such a type as this on a bare border; its characteristic growth suggests other conditions. The little Turkish Lily (*L. pomponium*), (Fig. 1), must not be forgotten. It is lovely. The forms of *L. lanceifolium*, as it is more often called, are charming in the autumn, often grown in pots, but adapted for planting amongst shrubs. There are several varieties, the white, called Kratzer, and many spotted forms. The variety *rubrum* is illustrated on p. 595 (see Fig. 2). The autumn is the season for these, and, treated as advised for *L. auratum*, except that they should be amongst dwarf shrubs, they have a unique effect by reason of the bright rose shade in the flowers. They are not so vigorous nor so hardy as some, but may well be trusted to full exposure. Select a sheltered spot where winds will not damage the rising stems, and use for soil loam and peat. I have noticed that they remain longer in bloom than almost any Lily, commencing in September, and lasting several weeks in beauty. A gay succession is kept up by another splendid group, of which the Tiger Lily is a good type. This fine favourite, the delight of the cottager and all who love flowers, grows freely in ordinary loamy soils, likes a little shelter, and is adapted for planting among dark-leaved shrubs, as these afford the richest association of colour. All the varieties are good, and the season opens in early September, lasting on for many weeks. *Splendens* is one of the finest, while the double *fore-pleno* is also rich and striking with its showy flowers, which appear later than those of the other kinds. P.

GERMAN IRISES.

In all gardens, whether large or small, this type of Iris should be grown. They are splendid town flowers, and do not mind smoke and an impure atmosphere. The family is nearly allied to the fascinating Orchids. It comprises a wealth of distinct and beautiful forms, varying from the golden English Flag, that colours the stream-side and brooks with flowers in summer to the white *I. Robinsoniana*, late, stately, and a picture of late arching, glaucous leafage. But in the town garden the selection is limited, and should be confined to the "German" group, of which the Purple Flag may be taken as the type. The enthusiast in Irises, he or she who wishes to grow many kinds, may with reasonable prospect of success, take Irises in hand, and in a garden of my acquaintance in Islington they find a comfortable home, thriving with vigour, and giving each year a full return in the way of beautiful flowers. There is a wide selection of varieties, some with flowers of strange colours, artistic, and scarcely agreeable in their dusky hues, others bright and distinct. It is varieties of the most pronounced tints that should receive special attention, and the finest are the common type, distinguished by the rich colour of the faces and lighter standards. Here I may remark that the Iris has no petals in the common acceptance of the term. The erect central segments, as a rule narrow and bright in colour, are called standards, and the outer ring, those that are broader and richer in colour, are distinguished as "falls," a not inapt description, as they have generally a drooping tendency. Possessing probably all the common germanica or one of its improved forms as Purple King and atropurpurea, in which the flowers are larger and richer in colour, one may proceed further and enumerate a few other kinds of distinct shades. Madame Chereau is the great market Iris, the flowers always in demand by reason of their colour, white, cut into with further lines of lilac. Queen of the May is one of the most beautiful of Irises, the flowers soft rose in colour. Gazelle has the standards white, with

a lilac-blue fringe, the falls also white, but with a violet margin. Victorine, white and violet; Celeste, a glorious flower, bold, large, and of a delicious shade of blue; Dalmatica, lavender, the falls also of this colour, but with a suspicion of rose; Mandralisea, lavender-purple, rich and handsome; Rigolotte, yellow, except the falls, which have a primrose-coloured ground, reticulated with deep-brown; and Florentina, white, blooming just before the gay procession of germanica kinds begin. The finest is the noble *I. pallida*, which grows fully 4 feet in height, the flowers very large, and of a delicious mauve, but the delight of the artist. In growing all those that have been mentioned no great difficulties have to be encountered, which cannot unfortunately be said of the great Iris family in general. They are splendid border plants, relishing a light well-prepared soil and warm, sunny position. Many plants are killed with kindness, and the German Irises will suffer if disturbed much, as disturbance at the root will most certainly result in death. The amateur gardener of small experience has unfortunately a desire to continually upset the plants he wishes to grow to full perfection by removing them to another portion of the garden to give a fresh soil, or by digging about the roots as if a firm surface to the ground was necessary. It is a golden rule to leave plants in enjoyment of robust health alone. Irises need not be disturbed under five years, and then the operation becomes necessary by reason of the unaltered condition of the growth, and gradual absorption of the nutriment in the soil. In the flower garden, where there are opportunities of



Fig. 1—Flower of *Lilium pomponium*. (See article "Lilies in the Garden.")

creating rich effects, the German Irises may be naturalised in half-wild spots, and the effect of the tall masses of flowers against the deep greenness of the leaves is delightful. Blue is a colour that agrees happily with the varied tones of green supplied by shrub and tree. P. P.

PLANTS FOR A SMALL GARDEN.

SEVERAL correspondents of late have inquired as to the names of a few good hardy things for a small border. I have just set down the names of plants that will thrive in all gardens, as a rule, whether suburban or otherwise, and hope this small selection will prove useful. They are all of vigorous growth, require ordinary soil, and flower over a long season, as will be seen by the accompanying remarks. A mistake commonly made is growing plants that are difficult to establish, or are not really hardy. It is idle to voppy gardens one sees in holiday times, as, in the southern counties of England especially, many beautiful shrubs and perennials attain to luxuriance, but these are not unfitted for suburban or more northern places. The selection is as follows, and all are hardy, requiring ordinary soil, whilst good plants can be purchased cheaply: *Erigeron speciosus* (mauve-purple, summer and autumn), *Rudbeckia speciosa* (yellow, black centre, same season), Pinks (particularly Mrs. Sinkins double white), Carnations, Picoteas, Asters, or Michaelmas Daisies, (in variety), *A. umellus* (bessarsabicus, A. levis, A. Novi-Belgi, A. A. Nova-Anglie in many varieties), Perennial Sunflowers (September and October), *Chrysanthemum maximum* (white), *Galega officinalis* alba (white), *Heum* in autumn (orange-scarlet, summer), *Rose* (par-

ticularly Gloire de Dijon), double and single-flowered Pyrethrums, *Ranunculus aconitifolius* fl. pl., (Fair Maids of France) (early summer), White Day Lilies (summer), Double Soapwort (*Saponaria officinalis* fl. pl., rose), *Campanula macrantha* and *C. glomerata* (Jahurica (rich-blue, summer), German Irises, *Achillea Ptarmica* fl. pl., (summer, double white flowers), *Adonis vernalis* (yellow, spring), Hollyhocks, *Alstroemeria aurantiaca* (orange, dry sunny spot, summer), *Alyssum saxatile* (yellow, spring), *Anemone japonica* alba (autumn, pure white), Winter Cherry (*Physalis Alkekengi*) (for its orange-scarlet fruits in winter), *Arabis alba* (white, spring), *Centaurea montana* (summer, flowers from white to red), *Delphiniums* (summer), *Doronicum plantaginifolium* excelsum (yellow), *Funkia ovata* (splendid leaves), White Everlasting Pea (summer), *Lilium croceum* (summer), White Perennial Lavender (summer), Common Evening Primrose (summer), Iceland Poppies (summer and autumn), *Rudbeckia purpurea* (autumn, purple flowers), *Sedum spectabile* (rose), Common Globe-flowers (yellow, summer), Honeysuckle (for its silvery seed-pods). For the shady border the orange-red *Hieracium aurantiacum* is of note, the Evening Primrose, Solomon's Seal (early summer), Saxifrage, not forgetting the London Pride, *Scilla campanulata* (blue, white, and shades of rose, spring), *Campanula lactiflora* (summer), Perennial Sunflowers, especially the branching kinds, and *Sedum spectabile*. The best climbers are *Clematis montana*, *C. Jackmani*, *fascicularis* multiflorum (winter-flowering, yellow), *Forsythia suspensa*, and *Crataegus lyracantha* (the Fiery Thorn, north or east aspect), amongst those that flower. I hope this selection will help those now planting small gardens. F. P.

SWEET PEAS.

FEW plants that are raised from seed have increased in demand like Sweet Peas, and the great advantage connected with growing them for market as cut flowers is, that the closer you keep the expanded blooms cut, the more successional ones there are produced. Nothing checks late flowering so much as leaving some of the first blooms to produce seed—in fact, I find it by far the best plan to grow a few especially for seeding, and see that all flowers on the rows devoted to cutting are kept closely gathered directly they are expanded. For a long spell of bloom the soil must be deeply cultivated and liberally manured. I usually sow the first crop in November in drills, keeping the rows about 5 feet apart; as soon as they begin to push through the soil some soot is dusted over them, and soil drawn up on each side of the rows, nearly covering them, and some brushy stakes are placed on each side of the row. The next sowing is made in February, in small pots, about a dozen seeds being placed in each pot. They are set on a shelf near the glass, in a cool-house or frame, when they soon germinate, and will be fit for planting out in the open ground in March. They must be gradually inured to the cold winds by having them in a frame from which the light can be drawn off all day, and when finally planted out should have stakes put on each side of the rows at once, and some evergreen branches to break the currents of cold air. In May they will commence to bloom, and should then have a good mulching of manure placed over the roots, and in dry weather plenty of water and liquid-manure, the quantity of bloom being in proportion to the supply of food available for the roots. New sorts are appearing every year, almost every colour being well represented, and the delicate tints of some kinds are very remarkable.

JAMES GIBSON, Gosport.

5130.—A north wall.—All the climbers that would suit otherwise are not evergreen, and you cannot do better than choose the Ivy, particularly Emerald Gem or the big-leaved dentata, which has immense foliage, but the former is the neater and quicker growing of the two. Ivy clings well to the wall, and is finer in winter than summer, and insects do not eat the leaves.—C. T.

Ivy in some form is the most suitable plant for covering the north wall. The Irish Ivy grows very fast, but Emerald Gem makes a neater and better covering. I have never found any difficulty with horses and cattle eating Ivy, but sheep are very troublesome, and would soon strip off all the leaves.—C. T.

THE CLOVE CARNATION.

THE most familiar Carnation is the "Clove," and it is a charming town flower, flourishing year after year in the heart of London, and apparently enjoying a coating of sooty deposit on its glaucous leaves each autumn. The winter of 1890-91 was memorable for the density and frequency of the thick, yellow, sulphureous fogs that often make London a city to get out of in the autumn and winter. From November until the warm rains occurred, the leaves were



Fig. 2.—*Lilium speciosum* var. *viridum*. (See article "Lilies in the Garden," page 594.)

black with soot, but in spite of this covering and months of hardship from frost, the plants in the following July blossomed forth sweetly. One of the happiest houses for the Clove Carnation in London is in the Embankment-gardens at Charing-cross, where it is planted largely, and the bold clumps, spreading out into large masses, give a glorious display of flowers. There is also the White Clove, known by the name of *Gloire de Noney*, probably a sport from the crimson, and it is a good companion for the type, possessing the same vigorous constitution, and providing handfuls of flowers, rich in scent, and a mass of petals. In many large gardens there is a reserve border of Carnations of the self varieties to supply cut bloom, as the spikes of Carnations are of the greatest use for filling glasses and bowls in the house. Ordinary soil will suffice; and it is pleasant to see the plants in large clumps at intervals in the border, and also to find that the colours are self—that is, confined to one shade alone, as the deep telling crimson of the Old Clove. During recent years there has been a marked advance in the improvement and cultivation of the border Carnations. At one time it was considered as a florists' flower only—that is, grown for exhibition under glass, or in not under glass, at least brought under cover before the flowering season. But pot culture is not the only method to adopt, and each year the Carnation grows in importance as a strictly garden flower. Several new varieties of exquisite beauty have been added, and the list is steadily growing. A variety of distinguished merit should have a strong constitution, producing a wealth of foliage, or "grass," as it is technically called, and carry a spike of flowers of one decided colour or shades of one colour, large, sweetly scented, and not splitting the calyx or petal. The great fault of the older kinds and some of the newer acquisitions is the fatal characteristic of splitting the pod, thus letting free the masses of petals, which dangle about and present to view a bedraggled, useless bloom. I have seen borders almost filled with such varieties as Ruby Castle, a lovely pink, wonderfully free, and with flowers of neat shape, hold well through the slender calyx. With the rise of the Carnation as a plant for the garden has also come a better conception of its capabilities for resisting frost. It is quite hardy, as hardy as the Rose

or the Honeysuckle, but upon some soils it has an unfortunate disposition to die in winter. In good, well-drained ground it will thrive, and several large collections went through the recent protracted winters without suffering the least injury. One great point is not to coddle the plants by pouncing them in frames or houses. Let them take their stand in the open, exposed to wind, showers, sunshine, and frost, thus raising up a race of plants of a strong, hardy constitution. It is a great thing to plant out early—that is, some time in early September, to enable the layers to become thoroughly well established before winter, and this is a far better plan than keeping out the young plants in pots in frames, transferring them to the open ground in March. It is then that they are troubled with keen winds, which seem to dry up the moisture from the leaves, and prevent their full establishment in their new quarters. The result of this is that the flowering season is late and poor. In some of the London parks the prettiest beds are planted with Carnations, Clove and otherwise, one variety to a bed, and the surface of the soil carpeted with the spreading Tufted Pansies or the fragrant Musk.

K. P.

5139.—**A border of Gazanias.**—I am not surprised that you should feel interested in the behaviour of the plants in the border devoted to Gazanias, not so much from the fact that it is not unusual for them to do so in some places, as I have frequently seen them in flower in November after a sharp frost both in Devonshire and Somersetshire; but it is strange that the flowers should remain open longer during the day in the autumn than in the bright days of summer. I do not know if you have noticed this. I think, however, you must have done, or you would not have been so struck with their behaviour at this time of year. It probably wants another Darwin to tell us how it is that the flowers of the Gazania close earlier in the day in summer than they do in the autumn?—J. C. C.

— I do not see anything very unusual in these flowering on until the severe frost of a week or so ago; after, doubtless, the note was written, we have had no frosts of great severity. Gazanias produce much successive bloom when in a suitable position.—C. T.

5121.—**Dressing for a tennis-lawn.**—No, do not use the soot from a boiler flue, unless it is pure coal-soot and of a deep-black colour. The grey soot you mention contains a good deal of phosphorus, and is not a safe fertiliser. Either use good soot or wood-ashes. Scrapings from the roadside are also excellent as a dressing. If manure is used, avoid that made from rotten weels, as it will probably contain much seed, and it is astonishing how full of vitality weels are in this respect. A good dredging with rough loughs will do an immense amount of good after the dressing has been applied a couple of weeks.—P. U.

— Better throw this away. It is not soot at all, but chiefly (burnt) coke-dust, or fine ash, and nasty poisonous stuff. It would be much wiser and better to buy a little good soot.—R. G. H.

— The brown dust taken from a boiler flue is simply fine ashes carried up by the draught, and has little or no value as manure.—E. H.

5127.—**Monarda didyma and Tiarella.**—The first named is a hardy herbaceous plant, commonly called Bergamot. It grows to a height of 3 feet, and will thrive in any ordinary good garden soil. It is readily increased by division of the old stock in the spring. *Tiarella* is also, I believe, quite hardy.—J. U. C.

5057.—**Best Carnations.**—There are so many good Carnations that it would take up considerable space to enumerate even a fair portion of them. The following short list contains some of the best border varieties: *Germania* (yellow self), *Sybil* (rose-flake), *Mrs. R. Hude* (apricot), *Will Threlfall* (yellow), *General Boulanger* (scarlet), *Ketton Rose* (rose), *W. P. Milner* (white), *Merry Maiden* (rose-flake), *Pomgranate* (rose and scarlet), *Mrs. F. Watts* (white), *The Duke* (scarlet), *Blush Clove*, *syn. Saint Queen* (flush), *Snowman* (crimson bizarre), *Queen of Belders* (rose), *The Governor* (flush-pink), *Mrs. Henwood* (yellow and red), *Firefly* (rose and scarlet), *Purple Emperor*, *Old Clove*, *Rose Celestial* (rose-pink), *Alice Ayres* (white and carmine), *Countess of Paris* (white), *Rosetta* (pink), *Old Coia* (yellow, flaked rose), *Comte de Chambord* (creamy-white), *Safrano* (pink and red), *Miss Morris* (deep-pink), *Ruby Castle* (rose), *Mrs. Muir* (white), and *Mrs. Clifford* (white).—F. B., *Winchester*.

FERNS.

FERNS IN TOWN GARDENS.

FERNS are delightful in the town garden, for the simple reason that they will grow, and are not always showing signs of distress. I would rather have a healthy Fern than a sickly exotic, nursed into condition by much care and attention. And to the Londoner, or whatever large town the amateur gardener may live in, the Fern is a friend; it grows under conditions totally unfitted for plant life in general—that is, damp and partial shade. I once had a border of Ferns running by the side of a high wall in a suburban garden of the orthodox type, crowded, unwholesome, and ill-fitted to produce gay flowers. The soil was composed of the various muds left by the builder, and had become sour and hard through want of turning up and exposing to the sunshine and rains. Before planting the Ferns, much of this was removed, and some good loam and peat substituted as a foundation for the plants, clumps of moderate size were obtained, planted, and in the new staple quickly made headway, enjoying the shade and moisture, and giving joy to the owner by sending up stately fronds, creating a mass of refreshing greenery on a summer's day. One of the finest of all Ferns for this purpose is the *Lady Fern* (*Athyrium Filix-femina*), of which there are several interesting variations, and Fern fanciers, those who are charmed with the many departures from the normal form seen in the different genera, may make an interesting hobby of this class of plants alone in a suburban garden. Whilst making growth moisture should be given in abundance, not in drops, but in plenty, over the fronds as well as at the roots, to remove accumulations of dust



Fig. 3.—*Lilium parlatianum*. (See article "Lilies in the Garden," page 594.)

and the outpourings of chimeys. Of course in the winter, when the plants are at rest, it is not necessary to give artificial watering, as the ground is usually sufficiently moist to prevent decay. One of the finest varieties of the *Lady Fern* is *A. F. f. plumosum*, the fronds feathery, like a graceful plume, and of a fine green colour. Then there is *A. F. f. Victoria*, a noble variety, with large, handsome, and stately fronds. Even more suitable for the town garden is *Lastrea* or *Aspidium Filix-aquilina*, I may recommend the

Aspidiums in general as town plants, as they live and flourish in confined garages if given in the first place a good soil for a foundation, and plenty of water during the hot summer months, when all vegetation thirsts for moisture. There are many varieties, some curiously crested. If the love of the Shield and Male Ferns grows on acquaintance, it is very easy to put up a few to adorn the greenhouse, the window, or the apartment. The Hart's-tongue Ferns are a host in themselves. The common *Scelopendrium vulgare* is a familiar type; it clings to old rains, garlands many an old abbey with verdure, and does not disdain the humble quarters of a suburban plot. A large, broad clump is as rich and handsome as anything one can have in the Fern way, and lives in ordinary soil. A border might be filled with this *Scelopendrium* and its numerous forms, some finely crested, others differing from the type by reason of their stouter fronds. The Hart's-tongue like a shady position, and, therefore, may have a place in our border of hardy Ferns, but the important point to consider is the soil, which must be good, using that composed of loam and peat, with sharp silver sand added to make it thoroughly light and porous. As is the case of the other Ferns, syringe the fronds in the summer to remove dust, and they may also be grown in pots, the choicer varieties deserving this treatment. There are hundreds of varieties described, amongst the finest *S. latifolium*, *S. pinnatifidum*, *S. Kelwayi*, and *S. ramosa marginatum*.

V. C.

5103.—**Scale on Ferns.**—You should have given the names of the Ferns attacked, as in some cases it is not safe to apply any insecticide, as the majority of the Mitten-hairs, Gleichenias, and *Gymnogrammas*. This type of Fern is severely injured by strong insecticides, and the remedy is worse than the pest itself. In such cases go carefully over the stock, and remove those fronds badly infested, and picking off those on the younger fronds with a pointed stick. It is a tedious but necessary work, and this is the best time of the year for it. You will have to take the utmost care of the collection at all times, as scale is simply due to neglect. For the harder kinds of Ferns a very good insecticide is sulphide paraffin-oil, and have it very weak, about half the strength advised by the makers. It is a good plan to take off a frond or two and dip in the preparation to see if injury is inflicted, if not, then you may proceed and syringe. I do not care for paraffin, as a rule. It is a dangerous material in the hands of amateurs, but a splendid remedy in bad cases.—C. T.

— Unless the Ferns are valuable kinds, and the scale insects few in number, the best course is stamp them out by burning the plants, and this alone will prevent them coming again. If it is decided to make an attempt to destroy them without sacrificing the plants, mix up a strong solution of Gishurst Compound, and sponge the plants over, dislodging any scales which cling close with the finger-nail or a thin bit of wood. Several washings will be required to clear them off; in fact, when brown-scale gets in to a collection of Ferns it will take a good deal of time and patience to get rid of them. I should certainly throw out the worst plants, anyway. Three ounces of Gishurst to the gallon of water will be strong enough.—E. H.

5117.—**Treatment of Agapanthus.**—You have evidently seriously neglected the plants, as the *Agapanthus* is not difficult to grow. You should repot or rebut the plants, using a rich loamy soil, and give moderate drainage, as during the summer season plenty of water is necessary. Judging from your description, the plants are evidently thoroughly root-bound and starved, so to say, which is only remedied by giving fresh soil and making a new start.—C. T.

— These are very easily grown. They do best turned outside in the summer. Better see how the roots are; perhaps they are pot-bound. They are strong-rooting things. Certainly they have been neglected in some way, but without particulars it is impossible to say how or where.—H. H.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruit and vegetables for drawing. The drawings so made will be prepared in the best manner and will appear in due course in GARDENING ILLUSTRATED.

HOUSE & WINDOW GARDENING.

CAMPANULAS FOR WINDOWS.

THESE succeed admirably in pots as window-plants. There are many beautiful varieties, of which the following are the most desirable for the purpose under notice: *C. Barrelieri*, a drooping kind with a profusion of star-like, bright-blue blossoms; its shoots hang down for about a foot in length, rendering it very suitable for suspended pots or baskets. *C. carpatia*, like and white, both very elegant, growing about 8 inches high, with numberless blossoms, extremely pretty for pots either in or outside of the windows; requires care in toxic gardens. *C. (Platyodon) grandiflora*, another drooping kind, but having far larger and more substantial flowers than *C. Barrelieri*, droops sometimes 2 feet, grand for hanging-pots or baskets indoors. *C. isophylla* and its white variety is a delightful trailing pot-plant for a window inside or out, and does well also if grafted on a stage in front of a window or in a greenhouse. The



Campanula rotundifolia.

pretty little *C. rotundifolia* (here figured) also makes an excellent window-plant in a cool room. *C. pyramidalis*, erect and branching, as its name implies—in fact, greatly resembling a Canterbury Bell, only the blooms are much more opened and flattened; this *Campanula* does well in pots for window-decoration. *Campanulas* delight in a light rich soil; equal parts of loam, peat, and leaf-mould, with plenty of sand added, suits them well. Do not put very firmly, and give plenty of water when in growth and in flower. Keep rather dry at the root during the winter, and divide and repot in the spring as soon as growth commences. The drooping kinds do best in slight shade. A 5-inch pot is large enough for each plant of the drooping kinds, and the pots should be suspended by means of wires, and the shoots allowed to droop over regularly all round. Use the same soil, but pot firmer for *C. carpatia*, and the tall pyramidal kinds, which grow 3 feet high sometimes, should be treated in the same way. It is, perhaps, best to divide and pot these in autumn, and when getting pot-bound in spring shift on into 6-inch and 7-inch pots. Use a more loamy soil and some old manure for them.

TABLE DECORATION FOR CHRISTMAS.

HAVING long been an advocate for simplicity and lightness in table-decoration, I would venture to offer a few remarks on the subject. There seems a natural tendency to run in excess in this matter. Many think that the more rare or beautiful plants, flowers, or leaves there can be piled on a table, the better the decoration. There can hardly be a greater mistake. As an illustration, I once saw a decoration in progress. Three light March glasses occupied the centre of the table; they were tastefully and sparingly filled with a light ham, and fringed with light Fern fronds, reclining on the damask cloth. Spraying out from these towards the finger-glasses, which were filled with choice flowers, were light, delicate sprigs of Ivy, so thin as to end in mere points of verdure. These were sparingly used, and the effect was charming—a perfect blending of lightness and simplicity. Strolling in an hour or two later, the decorators were still at work finishing—i.e., utterly spoiling their work. At the points where the graceful twigs of Ivy vanished towards the finger-glasses a stiff continuous double line of Coleus leaves had been hid on the cloth; and all among the Ivy, *Chrysanthemum* blooms in threes and in single flowers had been worked in as rosettes; similar rosettes were then stuck on at the corners. This tendency to overcrowding is generally rampant in flower shows. Again and again have I seen the most chaste decorations absolutely spoiled because decorators did not know when to stop. Sprays of the most exquisite grace, finishing touches, choice combinations that would have been the envy of artists, have been overlaid until completely hidden out of sight. Not only is

TOO MUCH MATERIAL USED, but the material is too much mixed. Nothing tends to produce monotony so effectually as the employment of all kinds of plants and flowers at once. It is hardly too much to say that each decoration should consist of one or a few homogeneous plants only. Not that only one flower may be used, though that often produces the most satisfactory results, but the flowers, foliage, and plants employed in any given decoration should develop into harmony through their congruity. Many flowers, however, are strong enough to stand alone, such, for example, as Roses, Camellias, Heaths, Lillacs, Valley Lilies, Lilies, Snowdrops, Primroses, Forget-me-nots, Spireas, Deutzias, Cyclamens, Anemones, Languerias, Tacsonias, Staphanthis, Passiflora-flowers, Gardenias, Odontoglossums, Dendrobiums, and hosts of other plants and Orchids. With abundance of their own foliage and a few Ferns or Palms for extra greenery the most exquisite table decorations may be formed. The pure-white flowers may need a little support from others, such as Squills with Snowdrops, Forget-me-nots with Spireas or Deutzias, Purple or Scarlet Bonnyarilias with Stephanotis, &c. But with abundance of verdure it is astonishing how effective even white flowers may appear on a dinner table, especially as they may readily be fringed with bright Coleus, Iresine, Alternanthera, or other leaves. In harmony with their leaves what better table-decoration for Christmas than thickly-berried sprays of Holly and Mistletoe, supported with bunchlets of leaves and sprays of Ivy of different colours. For rosettes on the table Christmas Roses and Camellias might alternate. The vases might be either filled with leaves and berries, to harmonise with the other decorations, or with bright flowers of promise of the coming beauties of the spring, such as Valley Lilies, Spireas, Lillacs, Roses, Cyclamens, or Primroses, not all mixed, but any one of them; or more choice still, Calanthes, Phalaenopsis, Odontoglossums, or other elegant Orchids. Or, still more in harmony with the season, small plants of variegated Holly, Golden Yew, Retinosporas, Laurustinus, Cupressus, or other variegated or green foliage or flowering plants could be used instead of vases or rosettes of flowers. Such hardy plants are far more effective for Christmas decorations than the more tender Ferns, Palms, Mirantias,

CRORUSS, DRACENAS, ARDISIAS, &c., so generally used for such purposes. And besides, the hardy plants in pots are within reach of all; young Spruces and Silver Firs are about as beautiful and effective in a young state as the most rare and costly trees or exotic plants. It

is the taste in the arrangement, not the cost nor the mass of material employed, that tells in Christmas and other decorations; and it may be added that the higher and purer the taste, the more sparing of material, and *rice versa*. A few touches of the pencil suffice the painter with genius, but the mere dabber's brush is ever in motion between the palette and the canvas. It is very much so with table decoration. A few bold touches please, while a multiplicity of intricate details land us in confusion and disappointment. And what is true of dinner tables and rooms is even more so of churches. The amount of "love's labour" absolutely lost on these at this festive season is appalling. Destined to be viewed chiefly from a distance, the greater part of the labour involved is seen imperfectly or not at all. Simple designs executed in durable material are by far the most suitable. Holly, Ivy, Mistletoe, Yew, Box, should form the staple, the warp of them all; while more perishable or scarce materials, such as flowers and berries, may be used more sparingly as the woof to slum up prominently in inscriptions or designs. For the furnishing of fonts, &c., there is no more useful plant than the Ethiopian Lily in flower, used with abundance of its fine leaves. It also has the merit of bearing the cold and draught of churches better than almost any other plant. Pyramidal or spiral plants in pots, as Yews, Hollies, Cupressus, Retinosporas, Laurustinus, Euonymus, Box, Bays, Myrtles, Acaecias, Gimm-trees, &c., are also invaluable, as well as the more hardy Palms, Yuccas, Aloes, Ferns, &c. In warmer churches, Azaleas, Camellias, forced Rhododendrons, Lilacs, and any other greenhouse or stove plants may be used. Few plants are more effective than good specimens of Heath and Epacris; while Chinese Primroses, Bonvardias, Cyclamens, and forced Hyacinths, Tulips, Narcissus, Crocuses, furnish any amount of colour that may be needed. But to mix all these in one church arrangement would to invite failure. Chrysanthemums are not named, as though several of the later Japanese and other varieties may still be in flower at Christmas, they seem to suggest a dead past rather than a joyous present or a hopeful future. This may be a mere fancy, and it must be admitted that Chrysanthemums last long and are showy in Christmas or other decorations. But a decoration of leaves and berries only is far preferable to one in which flowers already partially faded form any part. D.

PERSIAN CYCLAMENS FOR A WINDOW.

THE splendid effects which are now to be had from these plants are far superior to the smaller old forms, being finer both in foliage and bloom; and they are not difficult to manage in the sunny window of a room with a constant fire, unless gas be burned, which destroys them. Few room plants last so many weeks in blossom during the winter, throwing up their sweet-scented flowers continually for months if well supported. Plants which have not been too severely forced can now be procured covered with buds, and these will open well in a south window, the plant being copiously supplied with tepid water, but not allowed to stand in it, the saucer being emptied half an hour after watering. Cyclamens should never become very dry, even after flowering they must not be "dried off," a process which results too often in their destruction; but they do not like stagnant water, which rots their lower roots, nor can they endure a sharp draught. If the window be opened in the early morning in the room in which they stand, the buds are apt to get a chill and wither away; the plants are therefore best removed to a bedroom at night until the necessary sweeping process has been gone through and the window is again closed. Or they may be placed in a sheltered corner and covered with double newspaper, which saves them from dust as well as from chill at night during the winter months. Sparging their foliage with lukewarm water whenever dusty is very beneficial to them, and if green-fly or thrips should attack them, a little Sunlight soap will be found an excellent insecticide in the water. A mulch of fresh, green Moss placed round the tubers (which are usually considerably above the soil) will both add to the appearance of the plants, and keep them pleasantly moist, thus helping them much.

The pure-white Giant Cyclamen is very elegant, White Butterfly, with marbled foliage of green and white, being specially handsome. Vulcan, an immense flower of the richest crimson, makes an excellent contrast to the pure-white; while the pink-tipped varieties, and those with a crimson eye and white petals, are quite as beautiful in their way. After flowering Cyclamens should still be sheltered indoors until frosts are safely past, keeping them fairly moist, although they will not need so much water as when in bloom; they can be turned out of their pots into a half-shady border in June, where they will rest until the autumn, although they must not be allowed to become too dry during hot weather. They should never completely lose their foliage, and if given a little soot-water or other weak liquid-manure once a week they will become strong for the next season, and can be potted up in September, placing them then in a sunny window, as near as possible to the glass, to form their flower-buds. Good drainage, and a light, rich compost of loam, leaf-mould, sand, and sand, will suit them; and the tubers must be placed well above the soil, only half covered, leaving an inch of space empty at the top of the pot to give room for thorough watering. Treated in this way, a Cyclamen will do well for several years. J. L. R.

5051. — Dracenas in a room. — The amount of water needed by these plants in winter is not usually so much as in the summer; but it differs greatly according to the vigour of the plant, and the temperature at which the room is kept. The right time to water any plant may always be known by the state of the soil on the surface; this should be decidedly dry (not wet enough to soil the fingers) before water is given. Then, however, the plant must have a thorough supply, after which it will want no more until the surface soil is dry again. The water given to pot-plants should always be a trifle warmer than the atmosphere they live in, and rain-water is preferable to hard water for plants. The health of room-plants depends much upon their being kept very clean by sponging the leaves, or giving them a douche from a roseal pot or syringe when they need water, first placing them in a bath or tray. If the surface soil be sour or green, it should be removed to the depth of an inch or two, raising it carefully with a small stick without injuring the roots, and a little fresh sandy compost laid in its place. This often helps a plant greatly, especially if a teaspoonful of soot be added to the new compost. — L. R.

5082. — Making a window-box, &c. — These should be at least 10 inches deep, and 12 inches will be better for the plants, as it will allow for drainage, and also give an inch of room for watering at the top. Holes are not necessary in the case of wooden boxes, though they are needed when china or zinc is used. The box should be of the length and breadth of the window-sill, and have a small graduated piece of wood nailed on at each end and in the middle to allow air to pass under the box and to make it stand level, as window-sills usually slope downwards. No great ornamentation is needed, for the box should be covered with trailers. Neatly cut notches at the top, and two coats (outside only) of dark olive-green paint will be sufficient to make it neat. After placing a few bricks and ashes at the bottom the box should be filled with a good, rich, light compost of loam, leaf-mould, sand, and manure. This can be bought ready mixed under the title of "potting compost," by the hushel, at a good nurseryman's. Before using it a twentieth part of the whole is scum brushed from the lines of the house may be added with advantage. This is a strong chemical manure, and also has the effect of driving out all insects. Small plants of Mahonia (Berberis) Aquifolia in berry and hui, Laurustinus in bloom, and Aucuba japonica, with coral berries, look well in boxes for the winter; but these should have their pots sunk in the soil to protect them from frost, and can be taken out in early spring, when sturdy plants of Wallflower, with deep crimson or brown blossoms, and an edging of Forget-me-not can be substituted, with pink double Daisies, Anemone, and Primroses. These should keep bright until the end of May, when there are numberless half-hardy plants to put out for

the summer, notably, Tuberosus Begonias, Marguerites, Blue Lobelia, "Geraniums," Calceolarias, &c.; but other notes on the best selection for creepers, trailers, and upright plants will be given in time for that season. It is now rather late for putting in bulbs, but a selection of these can easily be made from the advertisement columns and put in at once either between the shrubs or without them, such as Hyacinths, Daffodils, Crocus, Tulips, &c.—R.

5060. — Window plants in winter in London. — It is by no means an easy task to keep plants in health during the dark foggy days which are too common in London in winter. Especially so where gas is burned; and in this case no flowering plant will bloom, although it may possibly survive it for some time if already in blossom. The best selection of plants under these circumstances is the following: *Ficus elastica* (the India-rubber-plant), with fine broad leaves, *Scarforthia elegans* (the Bungalow Palm), *Corypha australis* (the Cablage Palm), *Phoenix dactylifera* (Date Palm), *Chamaecyparis elata* and *C. humilis* (Fan Palms), all most handsome. *Dracena indivisa* (the Dragon-tree), and *D. cuneata*; *Lantana borbonica*, and *Aspidistra lurida variegata* (the Parlor Palm, so called, though not a real Palm); this last is a very hardy and useful room plant. All these depend much upon the care they obtain for their health in winter, and specimens now procurable should not come out of a forcing-house, or the change of atmosphere will probably kill them at once. They should not be watered indiscriminately at stated intervals, for they should never receive water when the surface-soil is damp enough to stain the finger placed upon it; while at the same time they should never become dust-dry. Tepid water, given only when necessary (and this can be ascertained only by daily attention to each plant separately), should be supplied in sufficient quantity to run through the pot, the saucer being emptied half an hour afterwards, for stagnant water will rot the lower roots. Never give a few teaspoonfuls daily; this too common plan is fatal to many plants, for it results in the starvation of the large roots below, while the fine surface roots are rotted. The foliage of these plants should be kept very clean by the use of a bit of soft old sponge and warm (but not hot) water. The India-rubber-plant leaves, and those of the *Aspidistra lurida* take on a fine gloss from the use of a little warm milk and water when dusty. During very cold weather it is well to place a newspaper at night over each plant to protect it from the biting winds which are apt to blow through the room, while it is brushed out in the morning; or the plants may be placed together on a side table, and covered with some light woollen material at night. If a warmed bath-room be available, and the plants can stand there at night, a little steam being added to the atmosphere by turning on the hot-water tap for a few minutes occasionally, this will be a most desirable place for plants at night, and by means of keeping such Ferns as *Pteris serrulata*, *Pteris cretica*, *P. tremula* in this moistened air from the time just before the gas is lit until the next day at noon, they may be made to do well, even in London, and are thus made available for the afternoon decoration of a drawing-room. Plants in bloom will not stand long, except in houses where electric light has superseded their great enemy—gas; for the deadly effects of this last light are such that every blossom of such things as *Primulas*, "Geraniums," &c., fall at once on being exposed to it. Hyacinths, *Racaris*, *Daffodils*, and a few other flowers may be tried; but all should be removed to a spare room, or a bedroom, where there is no gas burned, before four o'clock p.m. at this time of year. Cut flowers, with plenty of foliage plants as above, will be found to succeed best. — J. L. R.

5143. — Cytisus plants in a drawing-room. — The plants have either been kept too wet or too dry, and a dry atmosphere will also account for their behaviour. It is most provoking, I know, but the change is very radical, and the fact that the flower-stalk decayed points to a too wet condition of the soil. The only thing you can do is to keep them in the window or in the open, heated at as nearly as possible an even temperature, and take special care with the watering. Gas is a great enemy to plants.

INDOOR PLANTS.

LAPAGERIAS.

The culture of Lapagerias is better understood than a few years ago, but, judging from what has come under my observation, the simple needs of these glorious climbers do not in all cases appear to be fully realised. A mistake frequently made is that of giving them too much artificial warmth. I have seen some few plants both in pots and planted out; those were kept through the winter in an average temperature of 55 degs., but not one of them looked thoroughly happy. Lapagerias are like Camellias, cool-house Orchids, and many other things; the rich healthy leaf tint natural to them soon disappears if a certain temperature is exceeded during the winter months. They are, indeed, so hardy that in all but exceedingly cold winters I am convinced they will come through as well without artificial heat as with it. I have a plant in a large pot which for some years has stood at the east-end of a lean-to house. As all know, some winters are marked by periods of severe frost, and during one of these the heating apparatus gave way, so that the soil in the pot was frozen as hard as a brick and remained thus for quite a week. Not a leaf was injured; even the young shoots that are generally pushed up from the crowns, and which were then quite succulent, sustained no damage. The plant is still in perfect health, and bears a quantity of well-developed blooms and also a number of unexpanded buds. When any plant sustains such hard freezing with undiminished vigour, it is worse than useless to give it much artificial warmth in the winter season unless except in the case of such things as have to be forced into bloom. I have heard of Lapagerias being successfully grown in the full sun, but my experience of them is that the foliage loses the rich green natural to it under the influence of bright sunshine, and that there is considerable danger of the

older leaves dropping prematurely. I do not know how long the leaves remain green under favourable conditions, but for several years at least, so that if they drop within a year or two after formation, it is a sign that the atmosphere has been too dry. The first Lapageria I had did not thrive well for several years. Every summer many of the leaves turned brown and dropped, and the young growths from the crown withered at their points. I was much puzzled to account for this, as every year the plant broke freely from the old wood, and the young growths pushed up strongly from the base. A canvas blind, however, appeared to afford the necessary amount of shade. At length it occurred to me that the injury was done in the early part of the morning. The east end of the house was not shaded, and the sun shone fully on the plant up to 10 o'clock, and in June and July the power of the sun is often great at that early period of the day. As soon as I shaded the end of the house the discoloration of the foliage ceased, and from that time the plant did remarkably well. Lapagerias are, of course, seen at their best when they have a free root run in suitable soil, and in the case of houses of tolerably large dimensions this is the most satisfactory way of growing them. The greatest care must be taken in the formation of the border, especially as regards ensuring perfect drainage. The fleshy roots so quickly suffer from stagnant moisture that unless there is a free outlet for water the health of the plant is certain at some time to suffer. For a bed of soil say 2 feet in depth there should be 6 inches of drainage. This is by no means excessive, and will allow of copious waterings in the growing season without danger of souring the soil. Good peat with a little leaf-mould, a sprinkling of fibrous loam, with a liberal addition of coarse silver sand, is, I consider, the best compost that can be employed. Some crushed charcoal may also be added as giving additional security against stagnation. There is, I think, no better time for planting than the present. The young growths that annually push up from the base are beginning to appear, and if these come into full growth they are liable to sustain a check in planting. In the case of plants that have become root-bound it is inadvisable that the compost be made very firm round the old ball, otherwise there is much danger of the old soil getting dry, and when this is the case there is some difficulty in getting

it thoroughly moistened again. For this reason I do not consider it advisable to employ large specimens, especially if they have not been potted for some time. The roots form a thick mat, through which water does not so easily penetrate. Neither is it advisable to use small plants, as there is some danger of the soil becoming close and sour before the roots have taken possession of it. Although there is no comparison in the growth of plants that can enjoy

A FREE ROOT-RUN in good soil, and those that are confined in pots, a very fair amount of suc-



Double-flowered form of Lapageria.

cess can be had by pot culture. I have a plant in a 12-inch pot that has had no fresh soil for five years. This season it gave more blooms than in any previous year, and the foliage has the rich green hue that indicates good health. Naturally with plants in such a root-bound state high feeding is indispensable to keep the old leaves in good condition, and to encourage a certain amount of growth annually. During the growing season I top-dress about once a month with concentrated manure, and this, with abundance of moisture in hot weather, promotes a free growth. Frequent syringings are necessary, both as a means of creating atmospheric moisture and keeping off red-spider, which is sure to come when the air remains for days in an arid condition. Slugs are apt to be very destructive to the young growths that push from the base. It is a good plan to lay some Cabbage leaves about round the plants through the winter and examine them late in the evening, or better still, small heaps of bran. On mild evenings the slugs will come out to feed, and most of them will be caught by the time growth is being actively made. Lapagerias sometimes produce double flowers like the one here figured.

C.

5130.—**A garden-pit.**—The pit may be heated quite easily by means of either a flue or a hot-water apparatus. The former will come rather less expensive in the first place, and is somewhat safer in the long cold winter nights than a small boiler, but, on the other hand, it will consume rather more fuel. Make the first 5 feet or 6 feet—say across one end—of brick-work, and the rest may consist of 6-inch (rain (socket) pipes, jointed with cement. The flue should slope gently upwards all the way, and the chimney be 9 feet or 11 feet in height. If hot water is preferred, a single row of 2-inch piping all round the pit will suffice. Place the flow pipe along the front, and have a small "Star" or a plain coil boiler, set in the brick-work; either would do equally well.—B. C. R.

5111.—**Cyphomandra betacea.**—This plant, which is known as the "Tree Tomato" (though quite distinct from Tomato de Lave, which also goes by the same name), does best in an intermediate-house or cool-house. Being of rapid growth, it would probably succeed better in a town garden; but as it attains a large size, it would not be suitable subject for a small structure.—B. C. R.

5106.—**Oreoper for a greenhouse.**—You could not do better than get *Plumbago capensis*, which will succeed well planted out in the house in good loamy soil on a well-drained border. It is very free-growing, producing masses of flowers when in a warm greenhouse, and these are of a lovely shade of blue, borne in great profusion. You could also have the white variety, which is exactly the same as the other, only that the flowers are pure-white. The *Plumbagos* are not too luxuriant, like *Passifloras*.—C. T.

—*Clematis Indivisa lobata* is a very pretty white-flowered creeper. Ivy-leaved *Pelargonium Mme. Crouse* is good also. A Tea Rose, such as *Climbing Niphetos* or *Climbing Perle des Jardins*. *Plumbago capensis*, *Habrobrunnis elegans*, are all more or less suitable for a greenhouse.—R. H.

5112.—**Acalypha macrophylla.**—This is a stove plant of a semi-climbing habit that I remember as being valued for its large dark green leaves, with sometimes a vein of crimson in them. The correspondent who sends this inquiry is not likely to do any good with it in a winter temperature of 45 degs.; even if he could do so there are many more beautiful and interesting plants worthy of the room than this one.—J. C. C.

—Forty-five degs. is too low. Give it a temperature of 60 degs.—E. H.

5114.—**A forcing-house.**—For a house of this size you will need about six rows of 4-inch piping, equalling altogether, with connections, &c., nearly 200 feet run. If expense is not an object, a small plain saddle boiler, set in brick-work, will be found as good as, or in the end better than, anything else, but one of the upright independent cylindrical boilers, of the "Star" type, will come much less expensive, will require no setting, and work steadily and well, though it will not last so long as a saddle. It may be as well to add that a height of 9 feet is rather lofty for a forcing-house, unless, of course, you intend forcing Vines or other large or tall plants, and if you could make it 1 foot or 18 inches less you would find a considerable saving in fuel, as well as the plants do better, being nearer the glass.—B. C. R.

5123.—**Tuberous Begonias.**—Do not pot the tubers now, or they may decay; the end of January (if you have a warm-house or pit to start them in), or any time up to the middle of March will be time enough to do so. Keep them for the present in a pot or small box with a handful of half-moist Cocoa-nut-fibre below and over them; or if marked singly, separately in small pots, and in any case safe from frost or damp.—B. C. R.

5140.—**Treatment of a Lemon, &c.**—I should begin cleaning the plant at once; every week's delay will only make it worse. Scrape off as much of the scale as you can, then brush the whole well with a strong solution of Gishurst Compound, and just touch the mealy bug with kerosene or paraffin; but if you use too much of the latter you will kill the wood. Cut it back, not too hard, in March, and then keep it warm and close, syringing frequently overhead, but giving water only sparingly at the root until well in growth again.—B. C. R.

5118.—**Begonia seed.**—It is quite possible to sow the seed and raise plants in a cold frame, but if this is done you must wait till quite the end of May, and then the plants will not flower till the following season. In order to get good blooming plants the same season the seed must be sown in January or February, in a steady moist heat of at least 60 degs. to 70 degs., and the seedlings be pricked off and grown on as fast as possible, hardening them off in May and planting them out in June.—B. C. R.

—Sow this in February in a temperature of 70 degs. Do not cover the seed with soil, but place a sheet of glass over the pan or pot, and keep it dark until germinated. Then stand on a shelf and prick off into leaf-soil and peat as soon as they can be handled. Keep them growing freely, and pot on to a rich, loamy compost. In June they may be kept more exposed to air, and eventually planted out in July.—P. U.

—To bloom out-of-doors next summer the seeds should be sown in the hot-bed in February, and be pricked off when large enough to handle, so as to have nice little plants in single pots, or pricked out in boxes ready to turn out next June. To do this they must be grown on in artificial heat till the middle of May, and then placed in a cold frame to harden previous to planting out in the beds.—E. H.

5109.—**Bulbs in pots.**—"Nemesis" will get but little success with most of the bulbs he mentions if grown the second year. Frequent watering will not help, as they are not in a fresh soil after they have had a rest; but the others are not worth the trouble of keeping in pots after the first year.—B. C. R.

THE CAMELLIA AND ITS CULTURE.

SOIL.—Many years ago Mr. W. Paul gave an interesting lecture on the Camellia at South Kensington, and some discussion took place as to the best soil and other treatment necessary for it. The compost used at the Waltham Cross Nurseries, where very successful results were obtained, was one of good turfy peat and yellow loam. The late Mr. Pearson, of Chilwell, considered that loam without any peat was better for the Camellia than any mixture, and he preferred it cut from an old pasture and used at once. Since that time I have tried many experiments with the Camellia, and amongst them the system of cutting turf from an old pasture where the soil was a light sandy loam. In this the plants did well for some time, but afterwards the growth was not satisfactory, and the foliage had not the dark glossy green hue so much desired. There is also a black spongy peat obtained from undrained boggy soil which is even more unsuitable than some loams. Sandy, turfy peat, on which Heaths grow freely, two parts, and about one part of good turfy loam, which grows Brackens and in which the Rhododendron will thrive, are the best. Add to this some crushed bones and rotten stable-manure. This compost is of a lasting character, and in it roots are formed freely, and do not perish if the plants are judiciously watered. The young roots of the Camellia are white, brittle, and easily injured. In repotting the plants, if these are in good condition, they ought not to be disturbed; it is not enough merely to remove any loose soil from the surface with a pointed stick; the broken potsherds should also be carefully removed from the base of the ball. Select pots 2 inches or 3 inches wider than those in which the plants were growing previously, and let them be clean and well drained, and press the compost in moderately firm. It is well not to give any water for a day or two after repotting.

CAMELLIA-HOUSES.—The form and style of house in which Camellias are grown has also something to do with their success. The modern system, with a large extent of glass surface exposed to the sun, large squares, and light bars in the roof is not the best. Such houses look well from an architectural point of view, but for the purposes of Camellia and Orchid-culture the closely-placed bars and small panes of glass are better than very large squares. One of our best practical gardeners near London once told me that it was his belief that the modern system of hot-house building had killed nearly all the fine old Camellias in the neighbourhood of London. In the old style of house so much shading was not required, the lightest material being the best, and its use was required during the hottest part of the day only. It is also believed by many that the small panes caused a purer atmosphere in the house, by promoting a healthy circulation of air where the panes joined. We have some evidence that this is of considerable importance in maintaining the health of the plants. To do the Camellia well a house with a west aspect suits it best. It should either be a lean-to or half-span. If a whole house can be given up to their culture it is comparatively easy to grow them well. They require an airy greenhouse temperature all the year round, except when they are making growth during the early summer months, when a close, moist, rather warm atmosphere suits them best. If Camellias have to be grown in a greenhouse with other plants they ought to be removed to another house while making their growth. When the buds are formed it is then a question what is to be done with the plants. If there is room under glass I would not think of placing any plants out-of-doors, but sometimes there is no alternative; then it is as well that they be partially shaded from the midday and afternoon sun, and also from heavy rains. The best place for them is a shady part of the greenhouse or conservatory, and they do well as greenhouse-plants (see illustration).

IN FORCING THE CAMELLIA in order to obtain early flowers, put the plants into the forcing-house early in the year, and let them remain until the buds have swelled considerably. I could often have cut plenty of flowers a month before Christmas, and had a succession until the end of March. The latest flowering plants are never taken out of the greenhouse. There they remain while making their wood, by

BUDS DROPPING. Camellia buds have a tendency to drop off if they are subjected to a change of culture when the buds are advanced. For instance, the plants remain out-of-doors in a partially-shaded place until the end of September, where the leaves are alternately drenched with dews and rains. At that time they are removed into the comparatively dry and warm atmosphere of a greenhouse or conservatory, with the result that many buds will drop unless the change is made gradually. This can be done by admitting rather more air than usual and syringing the Camellias overhead once a day.

The size of plants purchased, if any, may be according to requirements, but it is essential that they be healthy and free from scale. Young plants get into bad health from various causes, the most common thing being inattention to watering, and allowing them to remain so long in their pots that they become pot-bound. When a Camellia gets into this state it is difficult indeed to bring it round into good health. The best plan is to repot after removing the dead roots and needless soil. This should be done before the plants start into growth; they should then be put into a house or pit in which there is a moderate heat, and be dewed overhead twice a day, taking care not to overwater at the roots until fresh ones are formed to draw up the water. They must be well shaded from the sun until they start into growth.

CAMELLIAS PLANTED OUT.—Although most persons must be content with Camellias in pots,



Camellia in flower on a wall.

after all this is not the best system of culture. They succeed best planted out in a prepared border of good soil. I have seen them do remarkably well planted in the inside border of ainery, or rather a greenhouse and inery combined. The Vines were planted outside and did not quite cover the glass roof, and the management was such that the Camellias did not interfere with the Vines nor the Vines with the Camellias. There was annually a good crop of Black Hamburg Grapes, and in the case of the three large Camellias, Lady Hume's Blush, first prize, and the Old Double White, each of them

produced hundreds of blossoms annually. The Vines were not forced, and the roots did not run into the space given up to the Camellias; and, moreover, they were thoroughly drenched with water—root and branch—during the growing season.

THE VARIETIES OF CAMELLIAS are very numerous now, but the double white and umbriata are the most grown. Imbricata is a good red variety when that colour is required, and the American varieties sent out by Mr. Hovey should be in every collection. J.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the EDITOR OF GARDENING, 27, Southampton-street, Covent-garden, London. Letters on business should be sent to the PUBLISHERS. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appeared.

5106.—**Lobelia for a basket.**—Which is the best Blue Lobelia for a hanging-basket?—L. P. L.

5107.—**Poinsettias.**—Should old Poinsettias be cut down now, and will they then throw out shoots?—NOVICA.

5108.—**Drooping Fuchsias.**—Will someone kindly tell me the best drooping Fuchsias for a greenhouse?—L. P. L.

5109.—**Dahlias for show.**—I should be pleased if someone would name twelve of the best show Dahlias?—DARIA.

5110.—**Chrysanthemums for bush culture.**—Will someone kindly give names of twelve best Chrysanthemums for bush culture?—SENEX.

5111.—**Treatment of Vallotas.**—Will someone kindly tell me the treatment of Vallotas? I have some in pots, but they have not flowered for years.—E. C. M.

5112.—**A scented Fern.**—Will someone kindly tell me the name of a Fern that smells like new hay, where it can be got, and if it will do well on a shady rockery in the garden?—WEST SURREY.

5113.—**Cooking green vegetables.**—Will anybody kindly tell me how to cook green vegetables—Spinners and Cauliflowers, &c.—without making a horrible smell all over the house?—ASTORIAN.

5114.—**Peat-Moss litter for stiff land.**—Will someone kindly inform me if Peat-Moss litter is a good manure for stiff land, to dig in, and as a mulching? Also, if it will do for a hot-bed?—S. S.

5115.—**Gloxinias.**—Can these be grown in a window of a room that has a fire lit every day? If so, will someone tell me the treatment required, and also when to plant? I have no garden or greenhouse of any kind.—AMATEUR.

5116.—**Gladiolus "The Bride."**—Will someone please to tell me the proper time to plant Gladiolus The Bride, as I see "J. Groom (despot)" mentions in page 555 that he plants this kind when he lifts other sorts. Will the frost hurt them?—F. S.

5117.—**Michaelmas Daisies.**—I shall be greatly obliged if someone will give me the names of six of the best Michaelmas Daisies, different colours, not more than 30 inches high, and where I can get them? Please name only the number required, as more causes confusion.—J. C.

5118.—**Potting Lilium auratum, &c.**—I should be glad to know whether the bulbs of Lilium auratum, cultivated in a cool greenhouse, should be often repotted, and at what time of the year? Any other notes as to treatment during period of rest, watering, &c., would be esteemed.—E. B.

5119.—**Good Chrysanthemum.**—I should like to know the names of about eighteen Chrysanthemums that flower best on the terminal buds, and those that do best on the crown buds? I have found out this year that Margot blooms best on the terminal buds, and Avalanche is best on the crown buds.—AMATEUR.

5120.—**A cool lean to vinery.**—I have a cool lean-to house 10 feet by 8 feet high. I want to grow a Vine against the back wall. Which kind would succeed best? The house is heated to keep out frost in winter, and I wish to use the front staging for plants, &c., as well. Will the two succeed?—HEAVY BLADES.

5121.—**Osmanthus.**—Some large bushes of Osmanthus ilicifolius variegatus, which have been in my garden for many years, are now (December), for the first time, covered with small white flowers, faintly sweet scented. Is this unusual, and will they bear berries, and, if so, of what colour?—CARMARTHENSHIRE.

5122.—**Greenhouse Amaryllis.**—Will anyone kindly tell me the proper treatment for some choice greenhouse Amaryllis, what heat and soil they require, and what should be done with them after flowering? Mine do not look vigorous, and I had hardly any flowers last year.—M. E. H.

5181. — **Chrysanthemum suckers.** — Is it necessary to remove all suckers and cuttings during the period of growth, and during the time the plants are in flower, as I find on examining plants exhibited at Chrysanthemum shows no trace of the least sucker or cutting, either on Pompones, Japanese, or Incurved varieties. — ANATHEA.

5182. — **Tea and Noleette Roses.** — I have thirty Tea and Noleette Roses, and would like to know if I can have a continuance of bloom all the year round, and if so, will "A. C. C." or "P. B." inform me the best possible way of succeeding? Lean to greenhouse, with from 40 degs. to 50 degs. of heat at command during winter. — ANDREAS KRABER.

5183. — **Treatment of Tuberoses.** — Would anyone kindly inform me how I can treat Tuberoses that have been potted about a fortnight and placed in a dark box in a temperature of between 40 degs. and 55 degs., and also kindly tell me whether that temperature is sufficiently high; in fact, how ought I to treat them to get them to bloom as early as possible? — R. B.

5186. — **Roses and Carnations.** — I have a small house in which I should like to grow the above for early flowers. Will someone kindly inform me if I can do so successfully, and whether the Roses would be best planted outside the house, or in a hot indie, or grown in pots, and what temperature would have to be maintained during the early months of the year? — DANIELUS.

5187. — **Arum Lilies.** — I have some Arum Lilies that have been in bud this six weeks. Will anyone tell me why they remain in bud and not open? I had the same experience last winter with them, but since then they have been out in the garden all the summer. They are now kept in a window well exposed to a good light, no fire, are three new means of forcing them to open? — ANATHEA.

5188. — **Pear-trees not fruiting.** — I have some Pear-trees growing in a small factory the west which have not yielded any fruit for the last year, although they are quite healthy. They were root-pruned four years ago, but that did them no good. Three of them are Jargonelle, but I don't know what the others are. Will anyone kindly tell me what to do with them in order to get them to bear fruit? — M. L.

5189. — **A steep border.** — I have a border 12 yards long, sloping steeply to a pathway, with southern aspect. It is too steep; the rain washing the soil away. I have just had an edging of red sandstone put in at a foot high, the same width, to bank it up and make it more level. Will someone kindly recommend me what to plant the interspaces of the sandstone with? The situation is suburban, and not free from smoke. — CHRISTIAN.

5190. — **Porring Roses for cut bloom.** — Will someone kindly give me the following information? I have six houses, each 40 feet by 16 feet, each 2 feet 6 inches from the floor, heated with a 4-inch flow and return pipe. These houses are occupied with Tomatoes in summer. What I want to know is can I grow a crop of Roses and have the houses empty for the Tomatoes by the end of April? If so, what kinds ought I to grow and when ought they to be put under glass for forcing? What temperature should I want? — M. E.

5191. — **A span-roofed greenhouse.** — I have built a span-roofed greenhouse, 30 feet long with a glass partition in the middle. The first 15 feet for flowers, the second for Vines. In the latter I have placed troughs of slate, about 14 feet long, 2 feet wide, and 1 foot deep. I have put in the bottom of each 3 inches of ashes, &c., for drainage, and 3 inches of good manure above. I purpose growing Cucumbers in them and early Tomatoes, and shall try a few Strawberries. Kindly tell me how I may further improve them for flowers or plants? Hot-water pipes are below the two troughs on each side of the Vine-house. — G. P.

5192. — **Pear-tree not bearing.** — Against a kitchen wall with a N.E. aspect, exposed at times to cutting winds from the sea, I have a Pear-tree in (apparently) vigorous health. Each spring for the last three years it has shown quite a remarkable supply of blossoms, which last spring we ineffectually tried to protect. The tree does not bear fruit; if a few flowers give promise of fruit they soon fall and fall. The roots of the tree are in a narrow border of soil adjoining a gravel walk, under which lie the pipes of the main drainage of the house, and other pipes conveying warm water to a conservatory. Can I do anything to make the tree fruitful as well as blossom bearing? — CONSTANCE, Morcen, Forquay.

5193. — **Rosee in a small garden.** — I have a small garden at the back of my house, (the south, and so it gets the sun all the year round). I should like to grow some Roses. The soil is rather light, and things are very much punished by the south-west wind. It blows against the back of the house and rebounds and tears the things to pieces. Will someone kindly tell me the names of twelve Hybrid Perpetuals and Tea-scented Roses that would answer best with me? I want those easy to grow, making a good show of bloom from spring to winter. Also the best artificial manure for Roses with my soil, as I fear horse-manure is too light, and cow or pig-manure is difficult to get with me? — A NEW BEGINNER.

5194. — **Climbing Roses.** — I have four climbing Roses (Niphetos, W. A. Richardson, R. M. Henrietta, M. Niel, and Miss. Carnot) planted 12 months ago on a border in an unheated, dark house, devoted entirely to Roses. In May the M. Niel was cut back to within 3 inches on the old wood. The others have grown to within 3 inches of the top of the house (which has only made three shoots about 3 feet long), they have all made several rods from 3 feet to 8 feet in length, and many short shoots. The long rods are strong and well ripened and trained on wires 14 inches from the glass. I have also a quantity of Tea Roses in pots, part purchased last year, and now in 10-inch pots, part purchased about a month ago, and repotted into 6-inch pots. I want to keep them all as backward as possible. This year many of the earliest buds were cut off by frost. How and when should the climbers and others be pruned? Do they require any thinning? I propose removing an inch of the soil, from both pots and border, and replacing with a mixture of peat-moss, bonemeal, and loam. Is the present the best time to do this; and if not, when? — H. C. BROWN.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

5195. — **Cape bulb** (W. A. Dunne). — I do not recognize it by the specimen sent. I generally get a better specimen, with some recognised point upon it. Here there is none. — J. J.

5196. — **Bulbophyllum Lobbi** (J. H. M. R.). — This is a very old plant, first sent from Lobbi nearly fifty years ago. The flowers are of a pale-yellow or buff colour. It may be near to you, but it is anything but a new plant. It wants (treating something like a *Leucomium*), but does not want so much drying. — M. B.

5197. — **Masdevallia ignea.** — R. M. sends a flower of a very good variety of this plant. Not at all an unusual season for its blooming. If you had taken it for any other species, you might have been very surprised, but the dorsal sepal will always distinguish it. This is always subulate and deflexed. — M. B.

5198. — **The Fern allies** (P. L. S.). — This is a book published by Baker, of Kew, and would be what you require, I should think, and is a synopsis of the genera and species of Epilobium, Lycopodiaceae, Selaginellaceae, and Rhizocarpeae. May be obtained of George Bell and Sons, York-street, Covent-garden. — J. J.

5199. — **The Hart's-tongue Ferns** (A. Reynolds). — I think if you are as fond of these Ferns as you say, you would know some of the varieties, and should know something of what you might expect. I have given you the names of several good tradesmen of whom you may get them, so I think I have done my duty. — J. J.

5200. — **Epidendrum myriophorum** (Ben March). — You have got a very fine specimen here, and you have been growing it quite right in the cool-house, but I feel to move it into a house about 5 degs. higher in the winter, which I think is the correct thing to do with it, and I advise you to do the same with your plant. — M. B.

5201. — **Odontoglossum Harryanum** (P. H. M., Liverpool). — The flower sent is a very fine variety, and when fully established, I should like to see it again, and so find out if it bears out my expectations. You should put your thumb down hard at the base of the petals. You will find it in the bud, and you would have more pleasure with the flower. — M. B.

5202. — **A species of Hypnum** (A Subscriber). — The specimen is some kind of Hypnum. I remember seeing it used by Mr. Sander some years ago for Orchids; but he soon discontinued it, finding that it was of no use. The best that I have found for Orchids is *Sphagnum obtusifolium*, *S. empidatum*, and *S. intermedium*. These should (some of them) be found in your neighbourhood. — J. J.

5203. — **Ocologyne leutigiosa** (J. R.). — I fear you have made some mistake with the name, but the plant you ask about flowers some time in the autumn months, but is a small-flowered, and not a showy species. However, you may not grow all showy kinds, but perhaps have some of the other kinds for contrast. Yes, you may keep it in the Cattleya-house during the winter, but it likes a warmer position when growing. — M. B.

5204. — **Cyrtopodium punctatum** (J. R.). — If it has not flowered with you, how do you know that it is punctatum? It may be Andersoni, which is a much stiffer bloomer. They are all deciduous, and lose their leaves in the winter, at which time they should be kept cool and as dry as possible without injury to the bulbs when growing. They should be started in the East Indian house. You will soon see if it is to flower, because the spike comes out of the young growth. — M. B.

5205. — **Ocologyne barbata** (J. R.). — Yes, the home you have it in is quite hot enough for it. Perhaps you have formerly kept it too warm, which may have been the reason of its failing to bloom. I quite agree with Mr. Hooley in saying that it is one of the very finest of the genus for winter blooming, bearing a tall, erect spike, with the blooms of the purest white, the lip ornamented with black and brown shaggy hairs, and measuring about 3 inches across. They last several weeks in full perfection. — M. B.

5206. — **Crocid importation** (P. Mordant). — If you have plenty of time and money to spare you can start importing Orchids; but from my own experience with it, I did not find the game was worth the candle. Some of the most beautiful of the kinds abound in this country already, and everyone has them, or can get them for a shilling or two each. The rarer kinds take a lot of searching for and trouble to get, and then you must have a man collecting them who has a thorough knowledge of what is already in the country. — M. B.

5207. — **Oncidium crispum** (Nebos). — This plant should be treated quite cool, and not dried much. You should hang it up in the house with the *Odontoglossa*, giving it just water enough to keep the bulbs from shrivelling. I do not know if this treatment will cause your plant to flower next year, but I should think you have a chance if you follow my advice. The plant you have flowered I should think is a variety of *O. crispum*, but cannot say without seeing it. I am glad you have found benefit from my instructions. — M. B.

5208. — **Ocologyne cristata** (Nebos). — I have seen this plant growing and standing all the year round in a warm and sheltered spot in the greenhouse, and it flowered well, but this was not in a greenhouse with "Geraniums and Fuchsias," and I do not recommend you to try it. I rather like the warmth of the Cattleya-house for it. Give it a fair amount of water when growing, and in the autumn I give them a little more warmth to finish them off, and the spikes will come up from the bulb's where they stand. Do not dry them off, but water carefully and sparingly. — M. B.

5209. — **Odontoglossum citrosum** (J. R.). — These plants should have been placed in the cool-house long ago, and kept very dry, but not so dry as to cause the bulbs to shrivel. Upon the slightest indication of this occurring the plants should be removed, have a good soaking of water, and when thoroughly drained, replaced, and they should be so kept cool and dry until the flowers appear. Show them a little more warmth, and when they have got a little further advanced, if you have a tank of water in the house, hang them over this, as I think it has the effect of drying the roots. I am very pleased you have done so well. — M. B.

kinds doing so well and flowering, but I would advise you not to give them too much heat. — M. B.

5210. — **Crochids in a cool-house** (J. I. C.). — I think you are selling pretty close to the wind when you talk about a house at 45 degs., because then at some time, when there comes a cooler night, it may be nearly 50 degs. or 10 degs. lower. When I say 45 degs. is the lowest temperature that epiphytal Orchids should be subjected to, I have known them to submit to a lower temperature, but I never but once saw the result. This was in a house which was under my superintendency, and the plants got the formed on their leaves. They turned of a purple colour. The man in charge, when spoken to about this, said, in a laughing manner:—"Don't you be afraid; that is the colour I like to see them." But in a month or two afterwards the leaves were all off the plants, and then it was my turn to speak, and I said:—"What colour would you like their next leaves to be?" And he said:—"Green, and I will take good care to keep the frost away next winter." I like to have the *Odontoglossum* house at about 45 degs., and 45 degs. at the very lowest. If my friend will write again, I will give a list of a few things he can grow. — M. B.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain in the name and address of sender.

Perennial. — Please repeat queries, and write each one on a separate piece of paper, and on one side of it only.

NAMES OF PLANTS AND FRUITS.

Naming fruit. — Readers who desire our help in naming fruit must bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its determination. We can only undertake to name fruit varieties at a time, and these only when the above directions are observed. If your articles will be referred to. Any communication respecting plants or fruits should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C.

Names of fruit. — C. J. J. Hughes. — Apple Rymer. Good specimens of a very excellent kitchen Apple.

POULTRY AND RABBITS.

5204. — **An incubator.** — It is impossible to answer "Vicar's" query as to cost unless one gives the catalogue prices of several makes, and this would be equivalent to a free advertisement, for which the query columns are not intended. The cost of an incubator depends, to a great extent, upon its size, the larger the machine the more it will cost; but the smaller ones are in reality the dearest—that is, as regards hatching power. It is altogether impossible to compare the machines of any two makers, so that it is unsafe to be guided entirely by price. Good incubators to hatch fifty eggs can be bought for four to six guineas; other makes are dearer, whilst some are less costly. Larger machines are worth more money, but their prices do not rise in proportion to their hatching powers. In the selection of a machine "Vicar" must be guided principally by the amount he is prepared to spend; he should, however, take into consideration the merits of the machine and the amount of attention it requires. A good incubator should need but few visits during the day, although, in case of accident, it is best to notice it now and then to see things are progressing satisfactorily. My experience is that the best results are obtained from the machine which works the steadiest; and when irregular working is the rule, the broods are the smallest. With regard to management, the directions sent out with each machine should in all cases be closely followed; when it is otherwise, it is useless to expect good returns. If the secret of success in incubator management can be summed up in one word, the expression used should be "regularity," for on this I fully believe everything depends. It is utterly useless to stick closely to the machine for one week and to neglect it the next, as many are inclined to do. Another thing is to use fresh eggs, and to put them in as near as possible at the same date. If there is anything else I can advise "Vicar" upon, I shall be happy to do so. — DOULTING.

"Gardening Illustrated" Monthly Parts. — Price 6d.; post free, 8d.

"The Garden" Monthly Parts. — This journal is published in neatly bound Monthly Parts. In this form the coloured plates are best preserved, and it is most suitable for reference previous to the issue of the half-yearly volumes. Price 1s. 6d.; post free, 1s. 8d. Complete set of volumes of THE GARDEN from its commencement to the end of 1892, forty-two vols., price, cloth, £30 12s.

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Haliburton are worth noting for outdoors, whilst amongst the red-flowered varieties Jules Lagravier is considered good, also the old Triumphant de Nois. Every garden should be brightened with Jules Lagravier. It is the best of all outdoor Chrysanthemums for November, resisting rains, frosts, and fogs well. It is used largely and well in the public parks, and even in the metropolis puts on a brave aspect, when its companions in the greenhouse are in full beauty. More of a purplish tone are Progne and Prima of Wales, whilst of the golden-coloured kinds, Golden Baverley and Jardin des Plantes may be noted. To this small list I may add Cottage Pink, very bright rose-purple, the flowers reflexed, and throwing off well autumn rains.—AMATEUR.

GARDEN WORK.*

Conservatory.

Frequent rearrangement is very desirable now: there is not much in the way of flowers outside, and I want to make the most of things under glass. Roman Hyacinths, even where there is no forcing-house, should be plentiful now; Perseas, also, are generally good this year, and with some; half-dozen will make a nice mass in a 5-inch pot, but a dozen in a 6-inch pot, the plants supported with small sticks, will make a nice specimen; and for conservatory work even larger pots, if well furnished, will be desirable. Marchal Niel and other Roses planted out in the beds or borders may be pruned now, thinning out weakly shoots and shortening other shoots back to firm wood. Other Roses in pots intended to flower under glass should have winter pruning is required, if not already done. Remove the weakly shoots which are not strong enough to produce flowers, and shorten back the stronger growths as far as possible to dormant buds in the unopened wood. Rich top-dressings are always useful to Roses, both in pots and also when planted out. There will still be a few Chrysanthemums in bloom; but for most of the varieties the season is over, and the work of propagation is now in full progress. On the whole, the season has been a good one, and the number of new varieties that will be distributed next spring will be made next year still more interesting as there will be much to look forward to. The big flowers still hold the front rank, and all these who hope to make any mark in the exhibition-room must get these. All this helps trade and raises money to circulate, and therefore to a certain extent benefits somebody. Look sharply after thrips on Azaleas and destroy them before the flower-buds begin to open. The cheapest way of doing this in the case of smallish plants is to dip them in a bar mixture of soot and lime; the soot-water may be sprinkled by tying up a piece of fresh soap in a bag and shaking it in a large tin of water, say, 20 gallons; rain-water is best. Stir the soot-liquid daily with a stick for a week, and then clarify by dropping in a lump or two of fresh lime—two or three pounds will suffice; water will only carry a certain amount of lime—all in excess will be precipitated, and will carry with it all impurities contained in the soot, leaving the liquid of a pale sherry colour, but quite clear. A pint of this clear liquid in a gallon of water should be strong enough to dislodge thrips and most insects, except perhaps mealy-bugs. There are at the time of writing indications that a cooler change is likely to set in shortly, and boiler fires should always be kept clean and free from soot. There is much loss of heat through neglecting to keep the flues well swept out with a brush. If there is a leakage in any of the pipes, have it seen to at once, as, apart from the loss of water, it interferes with the circulation of the fluid in the pipes. More Poinsettias and Bonarias which are past their best to another house where there are regular fires to ripen the growth before cutting down.

Forcing-house.

This department will be in full swing now, as, besides the forcing of flowers for the conservatory and for cutting, there are other things, such as Strawberries, French Beans, and Tomatoes, to be thought of. Young plants of the latter will soon be in a state for forcing warm houses, and Lily of the Valley, both of which may be placed in heat if it should be necessary to push them on. Azaleas with well-developed buds, both Indian and the deciduous species, may be helped on now. The old Azalea pontica forces well and is well adapted for cutting, being so very fragrant. If a pit containing a bed of warm leaves could be given up to cover the blossoms would be very superior to a bed of fermenting materials being planted in a forcing house of great value in encouraging healthy growth. Lobelias here not been sown for summer bedding no time should be lost, as plants brought on by cool treatment are the strongest and best. Any plants required to produce cuttings should have a warm pit now. A soft young shoot will strike when a hard one would slant off or fall to root quickly enough. The night temperature now should not fall below 64 degs.; under ordinary circumstances no ventilation will be required for some time to come.

Ferns.

The days will soon begin to lengthen, and new rigour will be apparent in old plants throwing up new fronds. Old plants of Adiantum cristatum which have been used to supply fronds for cutting may be cut down and kept rather dry and cool for a time; as soon as there are signs of growth shake out, divide, and start in smaller pots according to sized root. Less water will be required after a fortnight; too much water when the roots are inactive will make the soil sour, and the roots will not take kindly to it. Good loam will form the main part of the Fern

compost. Some kinds, especially Adiantum Farleyense, will grow in pure loam, but it must be of the very best quality and not too light or sandy. Do not let the ever-green Ferns get too dry; this is a mistake often made at this season, especially when Ferns are grown in mixed collections of plants in the greenhouse. When Maiden-hairs and other Ferns are taken to the rooms they are more commonly overwatered and the roots injured. When this happens the best course is to gradually withhold water until some of the fronds have been repaired, and then repeat, reducing the ball as much as can be done without injury to the remaining root, placing them afterwards in smaller pots. A temperature of 50 degs. will suit not only the greenhouse Ferns now for a few weeks, but a good many of the store species will be safe also. Many people grow stove and greenhouse Ferns together, and it is undesirable just now to have a temperature that will, until the time comes for the general repotting, suit all.

Making Hot-beds.

Very much useful work can be done with a well-made hot-bed or two, especially in the raising of young plants, such as Tuberoses, Begonias, Cyclamens, &c., as well as for forcing vegetables, including Cucumbers and Melons. The best and most lasting beds are made with a mixture of tree-leaves and stable-manure; the proportion of leaves to manure may vary from one-half to one-fourth; the whole should be thoroughly bleached and thrown into conical-shaped heaps. If there are leaves enough to hold the strong heat of the manure, to check the heat may be made up with only one turning, watering any dry spots as the feet are being made up. Use sufficient pressure evenly over the bed to make the bed steady and lasting; the pressure by driving out the air acts as check upon rapid fermentation, and so keeps down the strong heat. When the beds are made altogether with stable-manure the fermenting process must be carried on longer to get the manure into a sweet condition before the bed is made up. At this season for raising and propagating purposes the bed should be 2 1/2 feet to 3 feet longer and wider than the frame, and not less than 4 feet to 4 1/2 feet high. As soon as the heat rises in the bed, if the construction has been right, the work of propagation, &c., may begin.

Pot Vinery.

The Vines should be tied up as soon as the eyes have fairly broken and all surplus shoots removed. Do not overwater, especially when the plants are plunged in a bed of leaves. Very little ventilation will be required just now. I want the plants to grow, and until the sun-shine there is will benefit even if it is enclosed in the house; besides, there is no insect-air-tight. Stop all young shoots two leaves from the bunch; sometimes only one leaf is left, but two are better.

Window Gardening.

If greenfly should appear on Pelargoniums or any other plants wipe them off with a small sponge moistened with soap-water. This ought to be done twice a week, and, but is quite feasible when applied to window and room plants, especially when taken in time. Holding plants in spare rooms should be kept dry. It is better to trust to warm coverings than have a fire in the room; fires often go out when most required, but warm coverings are reliable and soot so little. Hyacinths and other bulbs coming in the tank should have light when roots are moving actively.

Outdoor Garden.

Weedy lawns may be cleaned now. When a lawn is very full of large, deep-rooted weeds the best plan is to put in the turf rather thinly. Dig or fork over the ground, and get out all the roots of weeds. Make the surface level and then lay a bit, then weed the turf and lay it down again. When the turf is out then the weeds come out easily, and digging over the ground extracts the roots in much less time than weeding can do. I have lately seen several lawns that were much infested with weeds that would be treated in this way. If there were only a few weeds it would be cheaper probably to dig them out. Weedy lawns may be mowed now; a mowing of farmyard manure would be both cheap and effective. Dung, manure, soot, and most artificial manure are used where plants are required. Bone-manure is more lasting in its effect than most things. Wood-ashes mixed with earth forms a good top-dressing. In making lawn-tennis-grounds when altering levels some of the good surface-soil should be laid on the new surface to lay the turf on, and a layer of sifted ashes placed just under the turf will keep down ferns and give a dark-green colour to the Grass. Fuchsias in the borders should have a mound of ashes placed round the collar of the plants high enough and wide enough to keep the frost from killing the base of the stems. The so-called hardy Fuchsias Riccartoni and others often suffer a good deal in severe winters in some parts of the country, although on the south coast they are hardly enough to do without protection. The gates of wind have played havoc among newly-planted things where not properly secured. Mistle-Tea and other Roses; standard Teas should have a little bracken drawn through the heads.

Fruit Garden.

In a forcing establishment the gardener now has his hands full. Early Strawberries must now be looked after, cleaned, and the surface made so firm in the winter, and if extra care added if it should, and if there is any reason to fear red-spider or green-fly, dip the plants in a solution, 2 oz. to the gallon, of Sunlight-soap. I have tested this in various ways, and find it a very cheap and effective Insecticide. Early vinerias, Peach-houses, and early Fig-houses will now be ready or starting possibly in some instances. Peaches are now on the way, and the pot-Vine-house started several weeks back. There is less demand for early Brapes now than there was thirty years ago. This is owing to the introduction of the late-coming sorts—Lady Howers's, Alphonse, and Gros Colman. Gros Colman seems to be very well established, having made way for the more compact-headed Gros Colman. There is a large trade in pot-Vines both for planting and fruiting in pots. Those who raise the Vines at home will soon be thinking of the time in the eyes. When raising Vines for planting during the forcing season there is no better way than to dip the eyes thrust firmly into soda and covered with a little rich

compost. The vines may be 5 inches or 6 inches square, packed close together in boxes, and the boxes placed on a hot-bed or placed on the hot-water pipes. Top-dress borders and beds of bush fruits with good manure. These fruits rarely fail to produce a crop, and should have more support given them than they generally get. Last season was so hot and dry that a little extra help may be required now. When the manure has been spread over the surface the borders may be forked over and left for the winter.

Vegetable Garden.

To obtain early Lettuces they must be grown under glass. They will do planted in the borders of cold Tomato-houses, the ground being thoroughly prepared before planting, and the spaces for the rows of Tomatoes being left unoccupied. Lettuces do not take much out of the land; but it should be borne in mind that Lettuces, after they make some growth, at any rate, are liable to be injured by frost, and even in cold houses, if unprotected, they sometimes suffer. A glass roof is not always sufficient protection. Therefore, when the thermometer falls very low during the night, or when the frost is severe, I have saved them by spreading sheets of paper, such as old newspapers, over; this not only keeps off frost, but it shades them from the sunshine during the day, which often does as much harm as the frost at night. Where there are plenty of tree-hives collected, or hot-beds, probably a bed may be spared for forcing Lettuces, or the beds which have been used for Asparagus will come in very useful for Lettuces or to sow early Cauliflowers or Horn Carrots, though but little progress is being made with such things yet. The time is close at hand when something must be done. The early Potatoes must be looked over, and if the sets are not already placed in boxes or trays to get the crown-eyes planted, the matter should be seen to at once. Vacant ground, if any, should be trenched, ridged, or dug up, with a rough surface exposed. Works of drainage may be done now wherever required, and Box and other edges made good. On frosty mornings when manure wherever it is required. Trencles may be prepared in rows, situations, such as close to a south wall, or early Cauliflowers. When a spot is specially prepared for a crop, especially an early one that is shared quickly, it always plants nearer, and the early border is always cropped more thickly than other spots in the garden. If a trench in a warm spot is prepared for early Cauliflowers they will produce very good crops when only a foot apart and in a single row.

E. HOSBART.

Work in the Town Garden.

Plants of the pretty variegated-leaved Coleus, though rarely grown in the greenhouse during the winter, require as much light to keep them alive through the winter as most other plants, and more than any other. If the light is not abundant, especially fall below 40 degs., they will soon show signs of distress, and will shortly collapse, the proper range being about 50 degs. to 70 degs. This will keep them slowly growing, and as long as they do that they are all right. The best place for the plants is on a high shelf or stage within a couple of feet or so of the glass, and they should be rather sparingly watered. Young plants from cuttings struck in July or August, and kept in rather small pots and poor soil, usually stand the winter best, and they begin to grow again in the spring. They produce quantities of cuttings, which are very easily rooted in a moderate warmth. The coloured-leaved Alternantheras and Felices so much used in carpet bedding also require a genial temperature during the winter, and the best way to manage the former at any rate is to lift and pot some of the old plants in September. In March and April cuttings may be taken in considerable numbers, and these will soon root in a brisk hot-bed, and make nice plants by the middle of June. Grasses and Lemon-plants in cold or very nice subjects for the town greenhouse or window garden; their glossy evergreen foliage is at all times handsome, and being so smooth is easily cleaned at any time with a little warm water and a bit of sponge. The flowers, too, are both beautiful and fragrant. Both are easily raised from the plant; pipe of ripe fruit (the thin seeds are useless), and a good time to sow them is in March or April, when there is usually a hot-bed of some kind at work, and then the plants become nice and strong by the following winter. Of course, seedlings are a long time before commencing to bloom—10 or 12 years at the least; but the foliage is always nice, and, if grafted when three to four years old, they will produce both flowers and fruit almost directly. Pots of Snowdrops and Crocuses are expanding nicely now in cool greenhouse temperature—in fact, neither of them will bear much forcing any time, and should remain in a cold frame or pit until the flower-buds can be seen, when a very gentle warmth will cause them to expand more rapidly. Continue to insert cuttings of Chrysanthemums as they become ready, bearing in mind that the majority of the Japanese varieties ought to be got to work a month or so earlier than the Incurved kinds. In almost all cases the cuttings formed of smokers that spring directly from the soil will give much better results than shoots proceeding from the stem.

B. C. R.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary from December 30th to January 6th.

Made up hot-beds for Asparagus and Potatoes; Radishes will be sown among the Potatoes to come off before the Potatoes will require all the soil. All the Shankle roots have been lifted for the winter's forcing, the Hebe kept off, and the crowns, with some 7 inches of skin attached, laid in a border, ready for forcing when required. They will be covered with litter if the frost sets in, so that they will be available any time. Mushroom-beds are made up as soon as can be found for fresh beds in the house. The warmth of a new bed is a great help to the temperature of the house; therefore, as soon as an old bed is found to be best cropping, it should be removed, the site filled with a new bed, and, if a fourth or fifth part of loam is mixed with the short manure, there is not much time wasted in fermentation. Equals the soil and manure are thrown into a heap in an open shed, and when the materials are warm and steam is arising from the heap, the whole mass is turned over again and the bed laid up. An Mushroom-culture nearly everything depends upon having good spawn, and if a

* In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with equally good results.

stock of spawn is purchased and kept in a cold, damp place it soon spoils. Keep the spawn dry and warm and it will not deteriorate in any reasonable time. Took up a lot of Veitch's Broccoli, of which a considerable number are still left, most of which are starting up, and laid them in a deep trench, with just the hearts above the soil; mats and litter will be in readiness to protect them should it be necessary, as one night's sharp frost will spoil the lot. Still looking after Chrysanthemum-cuttings. Some of my town friends have finished putting in their cuttings; they say the plants in dull town atmosphere require more time. There may be something in this; the ripening process may be slower than in the bright sunshine of the country. There are still a few Chrysanthemum-blossoms left for cutting, of course, and one's interest, if it were not for looking after young stock and making the necessary purchases of new varieties, would begin to flag. Seven and sixpence seems a long price to pay for a new Chrysanthemum, which may or may not be an advance on the varieties we possess already; but we must have these new varieties if we are to keep in the front rank. I am sometimes inclined to doubt if the front rank men, all things considered, have the best of it. All men, I suppose, act according to their lights, and the excitement of public competition is, in the estimation of some people, the only thing worth striving for. Moved more bulbs. Spiraeas, Adneas, Azaleas, &c., to forcing-house for early blooming. I think my Freesias were never better than they are this year, and good pots of Freesias are charming things both for the greenhouse and the rooms. They are just as easy to grow in the window of a long room as in a greenhouse for early blooming without forcing. They should be potted not later than September. They may stand outside at first till they begin to grow, and then be taken to the window or placed on the greenhouse shelf in the lightest position available. This is a good time to plant Cucumbers in forcing-houses. When a house cannot be given up to them they may be grown in boxes, if only a few fruits are required. Sowed Tomato-seeds of several varieties, including Old Red and Ham Green Favourite. These will be grown on near the glass in a warm-house, and every thing done to hasten their progress. Finished unailing Peach-trees on walls. Moved Roses in pots into span-roofed pit containing a bed of leaves, in which the Roses will be plunged. The plants invariably flower well under this treatment.

the permanent plants on all sides, without actually touching them. The function of these nurses is to help the other trees to grow, just as ours taught us to walk. But in ahercal matters the nurse is often allowed to grow over and smother the tree it was meant to help; and so there has been a rebound against the whole system of nursing, and we constantly see trees of rare form and surpassing beauty set down in the open teeth of the wind. Is it any wonder that, thus exposed, they refuse to grow, become stunted, or die? Good nursing is the secret of trees of animal health, but when the tree or man is once vigorous enough to grow or walk alone, nurses must be dispensed with.—F.

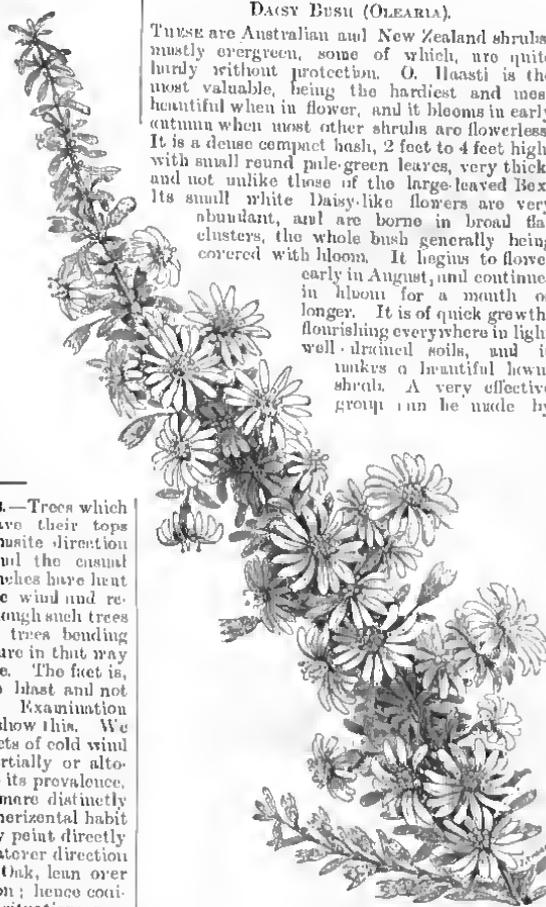
held of the soil; but the Yew occasionally suffers owing to the roots spreading out close to the surface. Hence the benefit trees growing on lawns and other exposed places receive from top-dressings, which should be placed over the roots as far as they extend. Still, though there are trees that prefer a dry, and others a moist situation, as a rule all timber trees prefer a soil free from stagnant moisture; hence the necessity of drainage in plantations, which may be carried out by means of open drains to a considerable extent, if the drains be cut in parallel lines at regular distances apart and kept open by periodical cleaning. I have known extensive woods drained in this way, when doing it otherwise would have entailed much expense.—S.

TREES AND SHRUBS.

CHOICE SHRUBS.

DAISY BUSH (OLEARIA).

These are Australian and New Zealand shrubs, mostly evergreen, some of which are quite hardy without protection. *O. Haasti* is the most valuable, being the hardiest and most beautiful when in flower, and it blooms in early autumn when most other shrubs are flowerless. It is a dense compact bush, 2 feet to 4 feet high, with small round pale-green leaves, very thick, and not unlike those of the large-leaved Box. Its small white Daisy-like flowers are very abundant, and are borne in broad flat clusters, the whole bush generally being covered with bloom. It begins to flower early in August, and continues in bloom for a month or longer. It is of quick growth, flourishing everywhere in light well-drained soils, and it makes a beautiful low-shrub. A very effective group can be made by



Spray of a Daisy-bush (*Olearia (Eurythia) ramulosa*).

planting several specimens together and intermixing the scarlet *Chaulioides Breuchleyensis*, which flowers at the same time. The other *Olearias* now in gardens, though not hardy enough for the open, make capital wall shrubs. *O. Ganniana* (called also *Eurythia Ganniana*) is an evergreen, bearing a profusion of white flowers in early autumn. Other good kinds are *O. ramulosa* (here figured), which bears an abundance of small white flowers, *O. Forsteri*, and *O. dentata*, excellent for adorning warm walls with white blossoms in autumn. In the southern counties and warm coast districts all the half-hardy *Olearias* may be planted out in the open, and only require a slight winter protection. G.

The Holly and Yew are two valuable trees. They will grow tolerably well in the shade and in almost any ordinarily good soil; but in a rather dry, strong loam both do best, the Holly particularly. Though a difficult subject to transplant, I never remember the Holly to have shown any signs of distress from drought if the roots had had time enough to get

SMALL CONIFERS FOR A COLD HOUSE.

In reply to several queries, this is a difficult subject to advise upon, as there are really few conifers of the size and habit desired by your correspondents that are available for such a purpose. The delicately beautiful conifers of the Larch tribe alluded to puzzles me, as there is really no conifer to which the description would apply. Most conifers whose normal height is from 2 feet to 4 feet are broad and bushy in outline, while at the end of an unheated structure it will be necessary to have quite lurly subjects. *Cupressus Lawsoniana erecta viridis* will in pots be some time before it gets too tall, but this is of a dense columnar habit of growth. The little narrow pyramidal-shaped *Retinospora laetoclada* with its greyish-green foliage is very pretty and will retain its freshness for a long time in pots; while the *Huon Pine (Dacrydium Franklino)*, with its slender partially pendulous branchlets, might, if the winters were not too severe, serve for such a purpose. If a slim habit of growth was not absolutely necessary, I should be inclined to name *Prumnopitys elegans*, a pretty little Yew-like bush that is fresh and cheerful at all seasons, and *Thujeopsis delavata*, a very chaste Japanese conifer. A smaller form of this—*latericis*—like one of the *Sclagimellas*, but of a low, rather spreading habit, is a very beautiful conifer for pot culture. Of plants other than conifers may be mentioned the Chilean *Azara microphylla*, whose regular front-like branchlets are clothed with small roundish leaves of a deep-green hue. The smallest evergreen *Cotoneasters*, such as *microphylla*, *thymifolia*, and *congesta*, which in winter are lit up by their little brightly-coloured berries, are very pretty; while some of the Japanese evergreen forms of *Euonymus* might be of service. The same may be said of that curious Privet (*Ligustrum coriaceum*), whose very thick leaves are of an intense deep-green hue. After all, perhaps the best results would be attained by using some of the choicer and more moderate growing *Ivies*, as secured to a slight trellis they form very pretty screen plants, while there is a considerable amount of variety among them and all are thoroughly hardy. Unless in especially favoured districts, the Norfolk Island Pine (*Araucaria excelsa*) would, I am afraid, be too tender to winter in a satisfactory manner in an unheated house. H.

The Weigela for suburban gardens.

—This is a delightful shrub, graceful in growth, free in flower, and quickly making a respectable bush. Their popular name of Bush Honey-suckle is in allusion to their bushy habit and somewhat Honey-suckle-like character of their masses of delicately-coloured flowers. There are many varieties—the parentage either *W. rosea* or *W. floribunda*—and in a good selection a charming variety of colours may be obtained, some dark crimson, others almost white. But for proximity to towns, kinds bearing richly-coloured blossoms should be chosen, these always appearing in a better light than the more delicately tinted kinds, that seem to sigh for the purer air of the country. *W. rosea* and *W. floribunda*, or any of the forms with flowers of decided colours, may be chosen. Their likes and dislikes are few, but all agree in preferring a light soil and moderately open position to promote a full growth; avoid the pernicious fancy for over-crowding, cramming three plants into a space that can only properly contain one. It is also well to allow a free play, that the Weigela displays its many attractions, and the best planting should consist in

Effect of wind on trees.—Trees which grow in exposed situations have their tops always leaning away in the opposite direction from the prevailing winds, and the casual observer concludes that the branches have bent by the constant pressure of the wind and retained their position. Now, although such trees have the appearance exactly of trees bending under a gale, still it is not pressure in that way which has given them their shape. The fact is, they have grown away from the blast and not been bent by it after they grew. Examination of the branches and twigs will show this. We hardly realise the repressive effects of cold wind upon tree growth, which it partially or altogether arrests, just according to its prevalence. Conifers show the effects of this more distinctly than other trees. Owing to the horizontal habit of growth of the branches, they point directly in the teeth of the gale from whatever direction it comes, and cannot, like the Oak, lean over and grow in the opposite direction; hence coniferous trees growing in exposed situations produce good long branches on their lee side, while on the windy side the branches retain their rigid horizontal position, but make comparatively little growth, which is simply suppressed. Example: I measured the branches of a Nordmann's Spruce growing in a position fully exposed to the north and south. One branch on the north side of the tree had fifteen annual nodes or growths and was 7 feet long, and its opposite, had the same number of nodes, being of the same age, but was nearly 2½ feet longer, or 9½ feet, and all the lateral branches were proportionally long and well furnished.—X.

Nurses for trees.—With good nursing almost any shrubs or trees may be made to grow anywhere. Without it there are hundreds of places where it is hopeless to attempt to grow rare coniferous or common trees, such as Oaks, for instance. Whatever does best in the neighbourhood—whether it be Larch, Spruce, Scotch Fir, Birch, or even Broom—that is the best plant to use for nursing and sheltering the trees or shrubs we wish to ultimately predominate. Plant choice trees in the position and at the distances we wish them to occupy, but plant the nurses everywhere. Let them fill all the intervening spaces, almost embracing

BRADWA CHAMPAIN

removing weakly branches or shoots. I know of bushes of Weigela upwards of 6 feet in height, flourishing in spots that one would consider fit only for rank weeds; but they yearly hold their festival of blossoms, which takes the form of dense clusters of tubular flowers, so thickly crowded on the graceful branches as to almost hide the leafage. Weigela is their common name, but I see that they are classed in some catalogues under the title of Dierrilla. —C. T.

WINTER JASMINE.

The Winter or Naked-flowered Jasmine (a sprig of which is here figured) is a very distinct and handsome species of a trailing habit of growth;



Sprig of the Winter-flowering Jasmine (*Jasminum nudiflorum*). Flowers bright yellow.

the stems are from 10 feet to 12 feet long, slender, very numerous, and much divided into small twiggy branches. In the warmer parts of China (whence it was introduced here), and under glass in this country it is sub-evergreen, but in the open air it is invariably deciduous. The flowers are large, bright yellow, and borne in great profusion along the sides of the young shoots. In mild seasons this fine shrub begins to develop its showy blossoms as early as December, but the usual time is from the beginning until the end of January, the flowers continuing to expand for nearly a month. When in full bloom it is a beautiful object, and the blossoms are all the more appreciated for their appearance when there is, out-of-doors at least, an almost entire absence of floral beauty; it is also worth cultivating for the sake of its leaves alone. Its free-growing habit makes it peculiarly suitable for covering walls, and as it is very hardy it is equally valuable for planting on bowers or trellis screens. It is also spoken of as a good town plant, enduring London smoke very well. B.

5181. — **Osmanthus.** — This has been flowering with great freedom throughout the autumn and early winter in several gardens to my knowledge, and is probably a result of the great heat and drought of the past season. The flowers are sweetly scented, and their profusion came as a welcome surprise from a shrub that rarely charms us in this way, although much appreciated for the rich and persistent verdure of its leafage. I have never seen or heard of fruits upon *Osmanthus illicifolius* and its variegated varieties, but there is an American species named *americanus*, which makes a small tree, flowers, and bears purple fruits which contain a nut that is said to be edible. —A. H.

— In Devonshire this shrub may occasionally be seen in flower and bearing a dark-coloured berry; but I have never seen it bearing either outside of that county. — J. C. C.

5110. — **Plants in a Rhododendron-bed.** — I do not understand your query, but I will name a few other plants, &c., which will thrive in the same soil. All Lilies will do to perfection, and have a grand appearance above the deep-green of the Rhododendrons. If these are too tall, then plant the Lilies in front of them. The Ghent Azaleas, also *Azalea mollis* will give a good variety of colour. *Kalmia latifolia*, *Andromeda*, *Persea*, *Pernettya*, and almost all "American" plants will also thrive. —P. C.

ORCHIDS.

VANDA SUAVIS.

This plant when it flowers at this season is particularly charming, because of its beautiful perfume, and the long time which the individual flowers last in perfection. "Lancashire Lad" sends me a flower from a plant which he says he has in bloom, with two spikes having fourteen flowers in all, and he farther says another plant about the same size has also two spikes just ready to open, so that my friend can skip and dance with joy and pleasure at having two of these *Vanda suavis* with two spikes on each plant, neither of them exceeding 2 feet in

height. Now, I am glad to find that my friend has found that *Vandas* can be flowered well by even a "Lancashire Lad" when they are still small, not that becoming of a good size detracts from their beauty in the least. If you want to grow these plants well they must not have excessive heat. You will then preserve the lower leaves, and you must not fumigate them with Tobacco, as that has the effect of making them lose their leaves, and they then get leggy and lanky. Whilst I have frequently seen plants of these *Vandas* flowering about the size given by "Lancashire Lad," and have thought in years gone by that these were the tops cut down from tall, leggy, old plants, and that the bottoms were stood away to break and to form lush plants, but as I grew up and began to learn more about plants I knew better. Now, at the present moment, I have in my mind one collection of these Orchids which are finely grown and freely flowered, and these plants are kept in a temperature which fell to 55 degs. in the winter which, however, I do not agree with. As these *Vandas* grow through the winter months they require some little warmth to keep them moving, and as they also need some little warmth to keep them doing, they must be kept warmer than 55 degs. to induce this growth; but the plants that I allude to are kept dry now, or next to it, at the roots, so that the flowers that are so welcome are only produced sparingly, and therefore the collection is bare of bloom for about half the year. I myself look upon *Vandas* of the tricolor section as being amongst the most ornamental plants in the whole order, for even when not flowering they present a sight which cannot be rivalled by any other genus with their dark-green leaves, and for this alone I would advise the readers of GARDENING who have stove plants to get a few and grow them also. They make a little more work in the stove to keep them clean and to prevent the foliage plants from smothering them up; but the flowers will be produced at different seasons—that is, if several plants are kept—and as these blossoms will last for a month or six weeks, and, moreover, these *Vanda* flowers can be had for nearly all the season, with their delightful aromatic odour pervading the whole structure. The blooms of the *Vandas* to which the variety *V. suavis* belongs are exceedingly showy, being spreading and each nearly 3 inches across, the sepals and petals

being nearly equal; the lower ones are, however, a little the larger of the two, and when fully expanded the petals are twisted when they are quite open, and they show their peculiar china-white lack-ground to the front, which is without spots or shad of any kind, but in the front are a lot of streaks, spots, and blotches of a deep rosy-purple. The lip is of a deep rosy-purple, speckled with rose in front and deep-violet at the sides by the base, and, in addition, it is most agreeably perfumed. I think I have reason to speak in enthusiastic terms of these *Vandas*, and to recommend them to the attention of my readers. The heat is not great to retain, and they will not take much trouble to keep them in a nice growing condition. They require good drainage to carry away any and all superfluous moisture, and to be potted in good fresh and clean Spagnum. When growing the plants delight in a humid atmosphere, and so that it will be seen they can be kept dry in the winter; but I like to keep the temperature a little warmer, so that they may be kept growing and give some of their fragrant flowers during the winter months. MATT. BRAMBLE.

5128. — **Orchids for cool greenhouse.** — "H. J. H." asks for six; he cannot do better than try the following: *Otoglossum Rossi majus* (in bloom now), *Cyclopogon cristata* (in spike), *Lycase Skinneri* (in bud), *Cymbidium Lowianum* (in spike), *Cypripedium insigne* (in bloom), *Dendrobium nobile*. These will do well if the thermometer does not fall below 40 degs. —MARCUS LOVELL.

Indian Azaleas for forcing. — The most promising-looking plants of the best kinds for early forcing may now be placed in warmth. They can thus be had in flower by the end of January or early in February without any undue haste. The florists I know have been cutting *Azalea* flowers for some little time past, but as far as this pertains to private gardens, there is no practical utility in it. In these latter a succession is more what is wanted, whilst in the former it is more a question of getting the best price for the blooms. I do not favour bottom-heat even of leaves, but have no objection to standing the plants over fermenting material, the moisture arising therefrom being decidedly beneficial in encouraging the buds to swell freely. Too much water at the roots must be guarded against, but the plants must not suffer from the opposite extreme. By plying the syringe freely, thrips, &c., will be kept down, whilst it will also save watering. When plants have been forced a few seasons they will quickly respond to a little warmth about now; in fact, at times they will flower almost without any additional warmth. I have noted this in the case of *Roi Leopold* and *Deutsche Perle*, particularly the latter. The old white "Alba" and *Fielder's White* with *Deutsche Perle* are about the three best of their colour. Of the striped varieties, *Roi Leopold alba*, *punctata rosea*, and *vittata elegans* are all reliable, the two latter hardly wanting any forcing. In the reds, *Roi Leopold* is still one of the most reliable to force early of the large-flowered type; *calyciflora*, a bright salmon-red, larger than, but somewhat similar to *amezia*, is a free-growing and as free-flowering a variety as that old kind, which should also be included. Another fine old kind is *obtusata*, a variety that is, in spite of its age, not nearly enough grown. The foregoing are the earliest are about the best to choose, as expensive kinds are not desirable. —H.

Libonia floribunda. — This is a plant that all amateurs could grow with the greatest ease, and yet we very seldom see it in their collections. It only needs a cool greenhouse or frame during the latter part of autumn, and will then come into flower and last until long after the new year. It is good for the conservatory or room, and if carefully watered will keep slowly for several months. All through the summer they are much best out-of-doors, and as they are hungry plants an occasional dose of liquid manure, especially when the pots are full of roots and the bloom buds are setting, will amply repay the little extra trouble. A sudden change of temperature, or drought, will cause the leaves to drop off; but if these points be attended to there is no reason why all should not have a plant or two well furnished with bloom all through the winter months. It makes a good window plant. —P. C.

FRUIT.

PREPARING FOR GRAFTING.

Those who have healthy but unfruitful fruit-trees, such as Apples and Pears, should now make the necessary preparations, while the sap is dormant, by heading down the stocks—a little above where it is intended to graft them, and by cutting off and laying in a stock of scions, so that when the proper season for grafting arrives which is, as a rule, a busy time in gardens, all may be in readiness. Different modes of procedure are necessary with the various forms of the trees; but the following plan will, as a rule, be found the best. Standard trees that have attained considerable size, but which are not of a kind that find a ready sale, are headed down and regrafted in great numbers in Kentish fruit orchards, and they do not now head them down so low as was the case a few years back; but the branches are sawn off when they are subdivided, or about the size of a man's wrist, so that a goal-sized tree will take from 50 to 100 grafts, and then a good head of bearing wood is very quickly formed, so that in three years from regrafting a good crop of fruit may be gathered. Dwarf trees should be sawn off as low down as sufficient branches can be got of the right size, but it is highly desirable to get several grafts on a tree, so as to quickly form a head. Espaliers or Cordons must be cut back close to the junction with main stem, and one scion put on each shoot; whereas on all trees that form a head two or more scions may be put on each. The scions when cut off should be correctly labelled and buried quite half their length in moist soil, so as to keep them fresh and plump, for if dried and shrivelled they are quite useless for grafting.

J. G. H.

FRUIT-TREES AND DROUGHT.

ALTHOUGH the drought has been over for some time, it is well to keep in remembrance the fact that fruit-trees suffer more frequently from dryness at the root than many are aware of. We see the surface soil looking wet, and conclude that all is well with the roots; but possibly at the same time the roots of large fruit-trees, that penetrate to a considerable depth, are dust-dry, and the tree is suffering in consequence; for even in the most luminant period of the year the buds need nourishing from the root, and if they are in a dust-dry medium it follows as a matter of course that injury will ensue, yet in all probability the trees will put forth leaf and blossom, but if no fruit follows there are plenty of excuses, such as the spring frosts and cutting winds, whereas, if screened from both, the blossoms could not have set, for they were injured months before. Stiff soils that hold the moisture longest in times of drought take a long time to get wet after the rain does fall. I remember once grubbing up some trees in an old orchard in Kent in the winter-time, when the cultivated soil was so solidened that we could not work on it, yet the soil about the roots was dust-dry, and it looked as if no rain had reached the roots for years, and there is little doubt but that when the soil gets very hard and dry that the water runs off all the elevated portions into the hollows, without penetrating the soil enough to reach the roots. Loosening the surface with steel forks would be a great help to letting the moisture into the soil. Fruit-trees on walls frequently suffer by reason of the berders being made too sloping, so that the water runs right away; they should be level for at least four feet from the wall, and at the approach of winter they should be loosened on the surface and boards put on for traffic, if nailing or any other work is being done to the trees, for unless the roots get rather an overdose of moisture at this time of year, there is little chance of its being made good later in the season.

J. GROOM, Gosport.

GRUBBING UP WORTHLESS FRUIT-TREES.

How much valuable soil is lumbered by worthless trees—some that never, or very rarely, bring any fruit, or if they do it is cracked or blemished in some way, so that the tree never pays for the ground it occupies, much less the labour bestowed on it, and the question comes—What

is the best thing to do? Well, if the trees are young and vigorous you may cut them down and graft with some other good sort in spring; but if at all old, or with any kind of disease such as canker on the wood, the best thing to do with them is to grub them right up and make firewood of them. Root-pruning is very well for those that can afford to experiment on their trees; but when profit is the object I look on root-pruning as a very doubtful source of revenue. It is surprising how many trees may be taken out of even well-managed orchards or fruit-gardens without reducing the average crop, for I lack on any tree that produces fruit that are not saleable as quite as useless as the one that refuses to crop at all, and certainly it is more difficult to prescribe a remedy, and although my trees are all comparatively young I never miss a winter without taking out a goodly number that do not come up to the standard required. It is a fallacy to suppose you have to wait long for a return from young trees, for they commence bearing at once, if of the right sorts, and if they require any great inducement to do so it is the best remedy to start afresh.

J. G. H.

SOME GOOD COOKING APPLES.

THE first Apple fit for kitchen use is Lord Suffield, which is of the Keswick-Codlin type, but larger and better, as it is a splendid cooker, and goes to pulp quickly. Following on the heels of this comes Warner's King, which is also a big, weighty Apple, ovate in shape, and when ripe having a skin of a rich yellow colour. To succeed this none are equal to Blenheim Orange, as not only is it first-class for dessert, but it is the best of the cooking kinds; it is also a capital keeper. Wellington or Dumelow's Seedling (here figured) is an Apple in high favour for market purposes, but the acidity is a little too brisk for some, and yet, for all that, it is a very desirable variety, bearing large, pale



Fruiting-branch of Apple "Wellington" or "Dumelow's Seedling."

fruit, a little coloured next the sun, and very solid in texture, the season of ripening being from November to March. Mère de Ménago comes in about the same time, and is a remarkably handsome large sort, with red skin and darker streaks, the flesh being firm and briskly acid, but not so sharp as the one mentioned above. Alfriston is also a late keeper and a good bearer, the fruit being large and of a light orange shade, with flesh pleasantly mixed with sugar and acid. Beauty of Kent is a very desirable kind, and so is Bedford

shire Foundling, both being large and first-rate in quality. Many other names of cooking Apples might, of course, be easily given, but it is better to have several trees of one kind than to plant too many sorts, as the result of growing a great number of kinds is rarely, if ever, a satisfactory one.

D.

POTTING VINES AND PLANTING THE CANES.

THE potting of Vines is often done in much the same way as that of any other plant, but from close observation the reverse treatment is required, and though the canes may not be required to force, equal care is necessary to get hard, short-jointed wood. It may be asked, what is there in the potting to create a short-jointed growth, as this latter is chiefly caused by the after management, or during the growth of the canes; but I contend much of it is due to the way the plants start and are potted, and not so much to growth afterwards. Of course, if the Vines are plunged in strong heat or grown in a hot, moist atmosphere, the growth will be pithy, with long joints and soft or hollow canes, no matter how potted; but to get the best results, such a course as this will be avoided, and the treatment given will avoid extremes in heat either at the root or top. It will be found that few growers of pot Vines now depend upon canes struck one year and forced the next. I am well aware it has been done, but it rarely occurs; indeed, the circumstances must be most favourable to admit of its being done successfully, and when such good results are secured by striking the eyes one season, that is, as early in the year as possible, and growing on into 8-inch pots or larger, cutting back and repotting the next season, say, in January, so as to get the canes hard and well ripened, there is a greater certainty of success and less trouble than with Vines grown one season and fruited the next.

THE PURCHASER OF POT-VINES examines his canes when bought from the best establishments, he will find this cutting-back system the one carried out, and therefore the most successful. Unfortunately, all do not practise the same system of culture, as at times one sees very fine canes; but if closely examined a gross growth does not mean a heavy crop. I would prefer a smaller cane, short-jointed and well ripened, to a large one full of pith, and when started producing a lot of long shoots with few bunches. Of course, if a large, well-ripened cane can be had, it is best and gives the greatest weight of fruit. The purchaser should secure well-ripened canes as described if hard forcing is resorted to. I have included planting canes in this note, as it is equally important to get these in the best condition for the work as when fruited in pots. Of late years I have noticed larger canes are sometimes used, so that equal preparation is necessary, as Vines planted with the joints far apart and full of pith rarely swell at the base, the bottom of the cane is contracted and therefore unsightly, and in time fails to produce fruit at the lower part of the house, the reverse being the case with the Vine in full vigour, the whole length of stem then bristling with shoots all up from the ground. I would add I do not like the system often practised of rubbing off the eyes of Vines in a young state when, say, several feet of stem is required; I think it prevents the roots growing or swelling at the base, and would prefer to stop after a few inches of growth have been made. Of course, in some cases it may not be convenient, but wherever possible I think it advantageous. This note refers to Vines grown on the two-years' system—that is, Vines struck one season and potted on into 8-inch pots and cut back the next. With Vines grown in one year it is not applicable, but, as I have previously stated, I consider the two-year plan the best. When

REPOTTING OR SHIFTING the Vines into the fruiting pots after being at rest, I advise a thorough shaking out or removal of soil and repotting into fresh compost. By so doing, a much better growth, with short-jointed wood and as hard as possible, is obtained. There is a great difference in Vines potted as advised. Two years ago I tested it, and got much better results from the shaking-out system, and when carefully done and the roots spread out as the potting proceeds there is no danger of injury to the Vines. Indeed, the roots seem

to revel in the new compost, and the cultivator need not fear the consequences if the work is well done. I am well aware such potting or shaking out requires more time and a certain amount of skill, as it would not do to do the work in a slovenly manner, but it is time well repaid in the end. It may be thought that bottom-heat is necessary to start the newly-potted plants, but with careful watering and a suitable temperature the growth will be all that can be desired without bottom-heat. Good potting material is important; this should consist of good fibry loam. I prefer that which has been stacked some time, with a layer of manure between the turves. Some mortar rubble and quarter-inch bones should be mixed with the soil, and during the growing season frequent dressings of Thomson's Vine Manure be given. I need not go into the composition of soils or manures, as each one should be allowed to use what he thinks best. Soils often differ greatly both in quality and texture; some require more feeding or addition than others, some require charcoal or bones, others are not deficient of lime and do not require lime rubble, but in all cases it is important to have the compost mixed some days previously to using to get it of a suitable temperature and in a dry usable condition. In a few instances Vines are cut back the third year, and of course then require much room, but this is not the system usually carried out. If a bit of fruit is required I would advise potting on the first season into 10-inch pots, thoroughly shaking out the next and repotting finally into 16-inch pots. Of course to do this the eyes must be

struck early, the strongest plants selected for the potting in during the summer, and the ripening of the canes attended to, and the Vines started as advised the next January to get them well matured. The system of planting young canes struck from eyes the same season is often carried out here; the roots have little or no cramping in pots, as before the roots get matted they are planted. This cannot be practised in some houses, and in these cases where strong Vines are used they require the same preparation as pot-Vines. I would also adopt the same principle in planting—that is, to thoroughly shake out the old soil and spread out the roots in preference to planting the ball with roots matted all round it. By the last system growth, no doubt, is quicker at the start, but the roots spread out as advised will furnish a better and stronger cane at the end of the season. I have often seen Vines planted with balls intact refuse to swell, and remain in a poor condition if the roots are in an impoverished state, having been in the pots for a long time. When selecting eyes either for pots or planting the same judgment is necessary, as when selected from hard, short-jointed ripened wood a good start is secured; all wood of a coarse pithy growth should be rejected. During growth the use of liquid-manures should be omitted till the pots are full of roots, and excess of manures in the potting-soil causes a rank growth, so that this should be avoided. I prefer it incorporated with the turf the previous season. W.

7180.—**A cool lean-to vinery.**—Black Hamburgh, Black Prince, or the Buckland Sweetwater—any of these would be suitable; but on the whole I should prefer the latter as more likely to do well so far from the glass. You can grow a moderate number of pot-plants in the front stage as well as the Vite successfully, but take care to keep them perfectly clean, healthy, and free from insects, and do not employ more heat during the winter, while the Vite is at rest, than is actually necessary. —B. C. R.

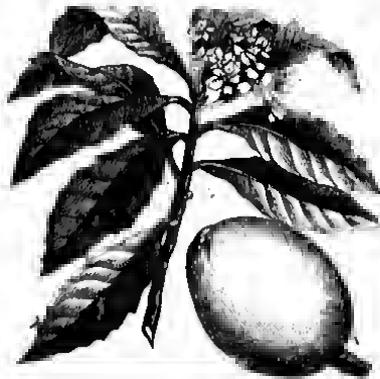
—If by the front staging you mean that which runs along the front of the house, you may like to proceed with a Black Hamburgh Vite on the back wall; but if the staging runs near to the back wall you are not likely to do any good with any sort of Grape. Black Alicante will do better than any of that colour. Its flavour, however, is only third rate. The Dutch Sweetwater is far preferable in regard to flavour, only the bunches and berries are small, but it will do better on a back wall than any other White Grape. —J. C. C.

—The Black Hamburgh will answer the purpose best. If planted against the back wall, it might be permitted to come a short distance down the roof. If you planted a second Vite

(and there appears to be room for two if a part of the roof can be given up), the Alicante would do, and would give Grapes later. Plants are and may be grown in Vineries. There should be no difficulty in your case.—E. H.

THE LOQUAT (ERIOBOTRYA JAPONICA).

ALTHOUGH seldom grown as a dessert fruit, this Japanese shrub is well worthy of culture wherever space can be afforded it in a cool-house, for being nearly hardy it only requires slight protection to keep it safe through the winter; in fact, in mild districts it might safely



Flowers and fruit of the "Loquat."

be grown on open walls in ordinary winters; but, like most of our fruit-bearing trees, it flowers early in the season and would probably require protection from spring frosts as much as from the cold of winter. I once had a large tree planted in an orangery that every year produced perfect fruits, ripening well, and they form an agreeable change in the dessert, as it is very pleasant to the taste. Apart from its fruit, the Loquat is well worth cultivating as a fine foliage plant, the leaves being very handsome, and as an evergreen for a cool-house. It thrives in a soil such as Oranges are usually planted in, and the two may be grown together. It is an excellent subject for covering a wall in a glass-covered corridor, and would doubtless be very fruitful in such a position if it could get light and sun-heat. The flowers are white, borne in bunches at the top of the shoots, and they usually set from three to five fruits in a bunch; each fruit contains a large seed like a Bean, by which means it may be propagated, or it may be grafted on Quince-stocks like a Pear. J.

5188.—**Pear-trees not fruiting.**—Pear-trees are so often in the same condition as yours when trained to walls, that it is a perplexing question to answer in a satisfactory manner as to the cause of their unfruitfulness. I believe the only explanation to be that the position is not suitable for the variety grown in it. As I have known when such trees have been regrafted with another sort that they have been as fruitful as anyone could desire, and when this process fails to convert barren trees into fruitful ones, they should be taken away and some other kind of fruit-tree put in their places.—J. C. C.

—If the root-pruning four years ago did no good it was carried far enough. Root-pruning rarely fails to throw the trees into bearing when properly done. The Jargonelle on some soils is rather a shy bearer. The main roots are probably deep now; these roots must be got at and shortened.—E. H.

—Perhaps the root-pruning was not satisfactorily carried. It is useless doing this if the tap-root, which grows direct from the base of the tree in a downward direction, was not severed. The end of September is the best time for root-pruning, but it would be better to do it now than not at all, or even wait until next year. If the trees are large take out a trench 4 feet away from the stem, and as wide as will admit of a man working in it comfortably. Cut off all roots coming in contact with, and gradually work under the tree at the bottom of the roots until the wall is reached, to make sure the tree has no tap-root. Fill in the trench, treading the soil firmly if it is not wet and heavy

to run together. Perhaps the trees were planted too deep; in that case it is useless going to the trouble of root-pruning; better to replant them. If they are too large for this, raise the roots within a few inches of the surface. Do not mix manure with the roots, but lay it on the surface as a mulching, 3 inches thick, if the tree is replanted, but not if it is only root-pruned. Are the blossoms protected from frost? If not, that would be sufficient to account for the absence of crop perhaps. It is always wise to afford protection to wall fruit-trees when in bloom, either by hanging a double fish-net in front or a temporary protection of evergreen houghs suspended to the front of the wall, just while the trees are in bloom.—S. I.

5192.—**Pear-trees not bearing.**—The flowers are imperfect from some cause. Is the position a dry one? The mention of hot pipes has raised the thought that the roots are at times too dry. I should be disposed to try some liquid-manure. There is weakness from some cause.—R. H.

LATE PLUMS.

PLUMS get into bad repute with those who grow for profit by glutting the market whenever there is a good crop, and the prices going down so low as not to pay the expenses of gathering; but this only happens with the mid-season kinds, like Victoria, that are so excessively prolific that they cannot be consumed all at once; but I never knew a glut of late Plums, and the following kinds may safely be relied on as the cream.

COE'S GOLDEN DRUM is probably one of the richest flavoured and best Plums in cultivation, and no matter how plentiful early Plums may be, there is never any difficulty in getting a good price for these. With us they fruit well as bush-trees, but will repay for a wall, and require hanging at least until October before they are fully ripe to get their best flavour, and they keep well if gathered and stored in a dry, cool place. A good dish of Coe's is a great point in collections of fruit at Chrysanthemum and Fruit Shows usually held early in November.

GRAND DUKK is one of Messrs. Rivers' additions to the list of late Plums, a good grower, and very prolific; a rich-flavoured Plum; makes a good companion dish to Coe's Golden Drum.

IMPERATRICE (blue), one of the good old kinds that require a wall, when it may be kept very late by playing tiffany over the trees to keep off early frost. It is best when partially shrivelled.

RIVERS' LATE, a round black Plum, of medium size, very juicy, and rich flavoured, a very useful kind for kitchen or dessert purposes.

WYDALKE is probably one of the latest of all Plums. I was surprised to see good fruits hanging on a tree after the severe wintry weather we experienced on November 18th, the fruits being still plump, and excellent for kitchen purposes. The tree had yielded an enormous crop. J. Groom, Gosport.

5169.—**Dahlias for show.**—A good selection of twelve show Dahlias would comprise the following: Benligo (a well-shaped flower of a purple-crimson colour), Lunary (yellow, very pleasing), Ethel Britton (blush, with an edge of red-purple to the petals), George Rawlings (rich maroon), J. T. West (yellow, the petals tipped with purple), Harry Keith (rose-purple), John Wyatt (rich scarlet-crimson colour), Mrs. Glasscock (pure-white), Mrs. Chelstone (a lovely colour, silvery-pink, very pleasing), Queen of the Belgians (cream colour, the inner surface of the petals delicate pink), Rev. J. Goodhy (maroon, with purple suffusion), and Wm. Rawlings (crimson-purple, a rich shade of colour).—C. T.

5171.—**Peat Moss-litter for stiff land.**—Yes; on the lower side we have to deal with it, and this is even superior to the ordinary straw-matting, either worked into the ground or applied as a mulch. I have not used it to any extent for hot-beds, but do not see why it should not answer for this purpose also.—H. C. R.

—Peat Moss-litter-manure is good for stiff land, but is not so well adapted for hot-beds, as it contains nothing to bind it together. Will do very well for filling pits for Cucumber and Melon.—E. H.

5188.—**Drooping Fuchsias.**—The old Mrs. Marshall (white and rose), Coreud Garden (white), Mrs. Grote and Danden (all light-coloured singles), with Gen. Roberts (dark single), and Miss Lucy Elms, Fran E. Tojler, and Lord King (doubles, with white or blush colour) are among the best with a drooping habit of growth.—B. R. ILLINOIS AT

FERNS.

ADIANTUMS IN WINTER.

THESE Ferns require a period of rest, and in none is this more evident than in *A. cucullatum*. Plants which have been growing freely during the latter part of the summer and autumn should be well exposed, and when the fronds are well matured the cooler the plants can be kept the better. If gradually hardened off and kept fairly dry in the pots, they will keep well where the temperature does not fall below 40 degs. Fahr., the fronds changing to the pale-green hue which is now so essential, or, rather I should say, which florists consider essential. It is no doubt owing to the fact that they have found the pale-green so much more durable than the deeper green fronds that the change has been brought about. For early spring use another batch of plants should be grown; these should be kept in cold-pits and as dry as possible without injury to the roots. They may then be started in warmth late in the autumn, and under fair conditions will make good fronds, and either for cutting from or as pot plants will come in for use about February and March. Like those for autumn use, these should be hardened off after the fronds are well matured. I find it is of little use to try to get good results from plants which have been kept in a growing state throughout the year; the growth there will make during the last three months of the year will be weak and imperfect, and they will also have become so exhausted that it will be late in the spring before they will make any good progress.

ALL ADIANTUMS should be kept moderately cool and dry at this season, and will then, if given a little more warmth, start away and make good growth as soon as the days begin to lengthen. Where the pots are well filled with roots a little artificial manure may be given occasionally while they are growing. Although *A. cucullatum* still holds first place among Maiden-hair Ferns for decoration, there are several others which are for many purposes preferable. *A. elegans*, which has large and more spreading fronds, is now extensively grown. It appears to be hardier than *cucullatum*. Young plants are a little loose and straggling in growth, but the second year they fill up and make fine plants, growing taller than *cucullatum*. *A. Williamsi* is also a valuable kind for cutting from when grown under cool treatment, but in warmth the fronds run out too long and thin. Of course, for cutting from the fronds should be well matured, but if too old, the pinnules drop off soon after the fronds are cut. I often wonder that *A. cucullatum* does not come more into use for cutting, the large spreading fronds being very effective and also lasting longer than those of most of the Maiden-hairs. In the spring this makes a very pretty plant for decoration. Plants grown in a light open position have a very pretty tint in the young fronds. There are two varieties, one having a pale-bronzy tint with only the slightest shade of red, while the other has a beautiful rose-red tint, and with age the fronds change to a deeper green. Though this is generally known as *scutum roseum*, I believe it is identical with the true *A. tenerum*.

A. LATHOMI, which is closely allied to the above, but has more drooping fronds of a pale shade of green, may be recommended, but is not so easily propagated as most of the *Adiantum*s. Of the smaller growing Maiden-hairs, *A. minutulum* is the most useful. It makes a very compact and pretty plant, and the fronds are of a useful size for button-hole bouquets or any other purpose where perfect little fronds are desirable. This is sometimes confused with *A. Pacotti*, but it is quite distinct, the fronds having smaller pinnules, which do not overlap each other as in *A. Pacotti*, which is sometimes recommended, but is too dense and heavy for most purposes, though it makes a very pretty pot-plant. In winter this requires some care, as it is much inclined to damp off. The plants should be stood up on pots and have sufficient room for the air to circulate among them, and in watering care should be taken not to wet the fronds.

F.

5172.—**A scented Fern.**—This is a native species known as *Lastrea annula*, or by some botanists as *Asplenium annulum*, a sub-variety of *A. apiculatum*. It is, I believe, to be found wild in some parts of the country, and can be obtained from most hardy plant nurseries. —E. C. R.

BIRD'S-NEST FERNS.

THESE plants are easily grown into large, handsome specimens; their roots require good and careful drainage, because if this becomes clogged the chances are that the plants will throw up deformed fronds, which spoil their beauty, and render them eyesores instead of ornaments. The soil must be made sandy, and should consist of light, turfy loam and peat, with some leaf-mould and good sharp sand.

A. NIDUS (*Thamnopteris Nilus*, *Neottiapteris Nilus*).—This is an interesting East Indian species, which is popularly known as the Bird's-nest Fern, from the remarkably peculiar manner of its growth, produces entire fronds about 30 inches in length and 4 inches in breadth, which rise up from the crown, leaving quite a hollow centre at their base, formed by the fronds of equal breadth throughout, growing horizontally at first before taking up their upright course, thus leaving a large, open centre.

A. NIDUS AUSTRALASICUM.—This fine ever-green plant (here illustrated) is a native of New South Wales, and may possibly be only a variety of the preceding species, from which it differs greatly in its fronds being of larger dimensions and of an elliptic lanceolate shape, instead of being of a uniform breadth. Besides the above characters there is one point essentially distinct; the fronds, instead of growing horizontally at first, are produced all round the rhizome and take an upright direction at the first start, so as to leave the crown elevated and exposed, thus making the hollow centre more funnel-shaped. Both this plant and the above species are wonderfully well adapted for vases, for which they make splendid objects. Although requiring stove-heat to grow and develop properly in during the best part of the year, *A. Nidus australasicum* will stand very well outdoors in the summer-time if not exposed to the full sun. Great care should be taken to keep away slugs and woodlice, which are exceedingly fond of the young fronds; the best way to prevent these pests getting at the plants is by placing the latter over a pan of

protection in winter and suitable material for the new roots to start into in spring. Grasses and other herbage also assist in protecting the crowns during the winter. It appears to me that many who try to cultivate hardy Ferns forget that they are depriving them of the protection they find under natural conditions, and, consequently, do not succeed. Of course, it is not necessary to allow Grass and all kinds of weeds to grow up among the Ferns, yet something should be done in the autumn to make up for this deficiency. A good mulching of leaves may be recommended; either new leaves or those half-decayed may be used. I prefer the latter, as they provide more nourishment for the young roots in spring. And besides this, if the plants are much exposed, they should have a covering of dried Bracken or other light material. Bracken is about the best thing that can be used, as it will gradually decay, and by the time the Ferns start into growth the young fronds will be able to push through. Spring frosts are often destructive to hardy Ferns. Many of our British Ferns are worthy of cultivation under glass, more especially the beautiful varieties of the Lady Fern. The exquisite beauty of *Athyrium* (*Asplenium*) *Filix-foemina plumosum* is not excelled, if equalled, in any of the exotic Ferns. When grown under glass care should be taken not to excite them into premature growth. Although a little heat will do no harm in the spring while they are making their growth, giving them warmth during the autumn and early part of the winter will excite them and materially weaken them. Some of the hardy Ferns may be kept in warmth during the winter without suffering much. I find that many of the hardier exotic Ferns will also suffer much if kept too warm during the autumn, though they will grow well in the stove during the spring and summer.

H.

Alder for hedges.—As a hedge plant, the Alder is not an good as the Poplar. It delights in wet, swampy lands, and will grow



The Australian Bird's-nest Fern (*Asplenium Nidus australasicum*.)

water on three inverted pots, so as to prevent the bottom of the pot touching the water, but at the same time leaving a liquid barrier of 2 inches all round to keep off all intruders.

G.

HARDY FERNS IN WINTER.

MANY of our most beautiful hardy Ferns suffer if fully exposed during the winter. When under cultivation it often occurs that they do not get the shelter (on they find in their natural habitats. The leaves from deciduous trees provide both

tolerably even in the water. The plants (for fear should be four years old, not more, because when older they are generally devoid of branches at the bottom. They may be set at a foot apart, and treated in every respect like the Poplar, trimming the fence with a hedge-bill, and keeping it at the height of 5 feet. The Alder will make a strong, branching fence, though not very close, and if pruned regularly as directed, it has a neatness much beyond what is generally believed of it. Few have the courage to keep it in subjection, being a tree of extraordinary substance. —E. C. R.

ROSES.

ROSES FOR PILLARS, ARCHES, AND PERGOLAS.

There are forms of culture where the extra strong Roses show to great advantage—when used for the purposes suggested by the above heading. Roses grown for this purpose are much exposed to the extremes of heat and cold, unless they are in some well-sheltered spot. Although all of the hardier varieties are suitable for sheltered situations, there are a few which are much choicer in colour and scent and that may be safely grown in warm localities. A pretty effect is gained when a well-planned pergola is covered with suitable Roses. We have two points to aim at—a gorgeous display during one month only, or a successive display of less splendour more or less for six months and upwards. Which is it to be? All depends upon the selection and pruning, and more upon the former than the latter. My own taste goes towards a continuous feast, when the full beauty of the several types can be enjoyed. However, as we do not all share the same opinions I will name a few sorts suitable for both results, and in order to assist in their colour arrangements will add their predominating shades. This is well worth a little attention, as the effect is considerably heightened by judicious contrasts. As I have already noted, we must choose our sorts according to the position of the pergola, and as the same remark applies to those growing upon pillars, arches, or walls, I will proceed to name a few of the hardiest varieties: Cheubant Hybrid, Reine M. Henriette, Brunette, Bruette Fridolin, Climbing C. Lefebvre Mme. I. Perière, and Gloire de Margottin, are all reds of various shades. Whites may be found in Miss Clegg, Aimée Vibert, Blanche de Forco, Boule de Neige, and Coquette des Blancs. The following are yellows in shades varying from that of the old Dijon up to an orange or apricot yellow as found in Wm. A. Richardson. Both of these are hardy and may be supplemented by Madame Birard, Bouquet d'Or, Henriette de Beauvean, Climbing Perle des Jardins, Kaiserin Friedrich, Emile Dupuy, Belle Lyonnaise, Gloire Lyonnaise, Duchesse de Meeklenburg, but Rêve d'Or, Maréchal Niel, and the Banksians need a more sheltered position. All of these will do for all purposes named, but for pillar Roses I like to get a few more of the brighter coloured H. Perpetuals, and such ever-blooming Teas as Marie Van Houtte, Anna Olivier, &c. These will soon cover a pillar, and are equally hardy with the Hybrid Perpetuals. Strong growers naturally need more support as regards fertilisers, and the soil should always be rich, either from suitable dressing or naturally. Pruning does not consist of much spring work, except the removal of any dead or frost-injured wood. During the summer a few of the branches which have already bloomed may be cut away to make more room for the succeeding growths, but this will not be so necessary as when upon walls, where we have only one side to consider. The growth over a pergola will also be pleasing in itself, and often prevent much knife work, except to do a little judicious thinning in the autumn when clearing up for the winter.

P. U.

5186.—**Roses and Carnations.**—Unless you can give the house up entirely to the Roses, it will be better not to plant these out, but grow them in good-sized pots, removing them outside for the summer. The Carnations will, of course, be grown in pots, and the Tree or Perpetual varieties will be found more suitable than the ordinary kinds. As regards temperature, the more heat (in reason) is employed the earlier will the Roses produce their flowers—that is, provided the plants have been properly prepared; but if the night temperature exceeds about 55 degs. at night it will be too much for the Carnations, so that this should not be exceeded, if possible.—B. C. R.

—Certainly these may be grown together, but I would not advise your trying to get early bloom of both at the same time. To do this, it would be necessary to provide a much stronger heat for Roses than the Carnations would approve. For your guidance I will describe a small house I have filled with both in all-arc pots. During August and September all

were out-of-doors. In October the Carnations were housed. These consist of the Tree or Perpetual-flowering section. In November, and at present, they produce good flowers, and will continue until February and March. My house had all the air I could afford, and was only partially closed upon bad weather. Even when frosty there was a little top ventilation afforded, with just a dash of fire-heat to keep the air rather dry. My Roses are now pruned and brought into the same house. They stand rather thickly in the centre of the benches, being surrounded with the Carnations. A very gentle fire-heat will be kept up for a short time longer, then gradually increased until it reaches 55 degs. to 60 degs. by the early part of March. By this time the bulk of the Carnation flowers will be secured, and I shall stand the plants into a pit or frame until they can be turned into the open borders in May or June, when they will be layered and grown on for potting up in September, ready to go through the same routine again. By the time the Carnations are moved, the Roses will need all the room and be in flower in a week or two. The fumigation and syringing necessary for Roses while making their growth is just the thing for the Carnations before being removed from the house. The two also work well together as regards heat, a cool temperature being best for the Carnation and also for the Rose while starting into new growth. When the former are out stand the latter farther apart and allow a rise of 10 degs. This, with careful syringing, will give you good Roses in quantity during early spring. In August stand the Roses outside, and do what potting may be necessary. Then place in a pit until the beginning of the year. I know of no two flowers which work together in this way better than Roses and Carnations.—P. U.

5190.—**Forcing Roses for cut blooms.**—In the first place, I do not see how you are to force Roses early with only a flow and return 4-inch pipe in a house 16 feet wide; that quantity of piping is barely enough to keep out frost in severe weather, much less maintain a forcing temperature, as it is not unusual to get 16 degs. of frost in the month of March. I should say the middle of February is as soon as it will be safe to begin forcing. The next point is the way in which you intend to grow the Roses. I gather from the information you send that you are thinking of growing them in pots. But are you aware of the amount of labour that involves the whole year through in watering and other details? In such a case as this either the Roses or Tomatoes should take a secondary position, whichever is likely to pay best. I work my houses on these lines. All my Roses are planted out in borders inside the house, and as soon as the first lot of blooms are over on the Roses the growth is cut down to near the stem, and then the Tomatoes take their place on the roof. You must, however, understand that I do not get a full crop from the latter, because the growth has to be gradually cut away to allow of the young shoots of the Roses being trained under the glass as before. My houses are, however, efficiently heated, and the warmth given to bring the Roses into bloom by the middle of March is sufficient to get the Tomato-plants in flower early in April. I do not know of a more economical way of growing these two subjects in the same house, as you will understand that, except to thoroughly moisten the border in which the roots are growing, my Roses are really not much trouble.—J. C. C.

—The greatest difficulty in occupying the houses with Roses and Tomatoes will be found in getting wool of the former sufficiently vigorous and finished before you need the space for the latter. You want Roses during the first quarter of the year, and Tomatoes in the house by April. If your houses are fit for Tomatoes, they would be more suitable for the strong-growing climbing section of Roses than for those of Mme. Falcot and Catherine Mernet type. To have the former good year after year it would be necessary to keep the young shoots from the base growing freely and vigorously until July at least; therefore, it would be prejudicial to shift them to the open so early, as would be useful if Tomatoes are to occupy this space by April. I note that you have six houses, each 40 feet by 16 feet. Why not devote all of them towards finishing off the Rose growth and as shelter to the Rose-plants for the first

six weeks after being restarted? I would suggest the following routine. Consider your Roses have bloomed by the early part of April, then cut back the wood which bore flowers and remove the whole of the plants to the two houses, growing the young rods up the roof much in the same manner as Vines. You can thus attend to their wants and secure really valuable wood for next season's forcing. The advantage of full ventilation can be afforded for a short time previous to removal to the open as a finish to their ripening. In October they should be housed again and started as steadily as possible. Here they will push into growth of an inch or so by the end of the year, by which time the other houses will be quite clear of Tomatoes and ready to receive their quota of Roses. It is while growths with blooms are produced from each side of the long-simmer growths that this section of Rose requires ample room, and you would be able to fill all six houses to advantage, working young plants of Tomatoes on in the meantime. A steady temperature until the days have turned, and then an increase when your plants are in their flowering positions, will soon give you a valuable return, and avoid the long spell of emptiness experienced when Tomatoes only are grown. I would confine myself to the following six Roses: Maréchal Niel, Climbing Perle des Jardins, W. Allen Richardson, Reine Marie Henriette, Climbing Niphetos, and L'Idéal.—P. U.

—Yes; properly prepared and well-ripened Roses in pots may be flowered and got out of the way by the end of April. The Tea-scented kinds would be most suitable (with Maréchal Niel and one or two other Noisettes), and a temperature of 60 degs. to 70 degs. would be necessary from soon after the turn of the year.—B. C. R.

5193.—**Roses in a small garden.**—It is hardly the correct thing perhaps to advise pegged-down Roses for a small back garden, yet for a position that is so much exposed to rough wind as this inquiry refers to, it is certainly the only form of growth that appears likely to give satisfaction. I think a few strong-growing Hybrid Perpetuals, like Charles Lefebvre, General Jacqueminot, John Hopper, Mme. Gabrielle Luizet, Magna Charta, Jules Margottin, Mme. Charles Wood, Etienne Levat, Duchesse de Vallombrosa, and Prince Camille de Rohan, with their strong growths pegged down on the ground, would suffer less from the effects of the wind than any other form that you can grow them in. If this does not meet with your views, you had better select sturdy-growing H.P.'s, like Baroness Rothschild, and grow them as dwarf bushes. Others belonging to this type are: Captain Christy, Merveille de Lyon, Crismon Belder, Victor Hugo, and Ulrich Brunner.—J. C. C.

—I do not recommend Roses to be grown in a very small garden—at least, not the Tea-scented varieties. Apparently everything in your garden seems to get blown to pieces, and Tea-scented or any other Roses will not stand this kind of treatment. I will, however, give you my experience of Roses in a small garden. I planted a bed of them last autumn in a garden situated similarly to yours, but the wind does not play such pranks as recorded by you. A good loamy soil composed the bed, and in the early summer a liberal mulch of manure was given. Throughout the summer the plants were freely watered when necessary, which was pretty often last year. All the following varieties succeeded well, and I hope this small selection may be of use to you, the plants being dwarfs on the Brier-stock. W. A. Richardson, well known for its exquisite apricot colour. This variety, contrary to my expectations, flowered remarkably well, and the plant is very strong. Of the Hybrid Perpetuals Duke of Edinburgh (crimson, tined with maroon, a full flower), Mme. Isaac Perière (rose-carmine), Boieldieu (cherry-red colour), Eugène Appert (crimson), Mme. Gabrielle Luizet (pink), Mrs. John Laing (pink also), and Lady Arthur Hill (rosy-lilac). These have all succeeded well with me in a very small plot. I may mention that a Gloire de Dijon Rose planted at the same time has made splendid growth. This is a really lovely Rose, and indispensable in the smallest collection.—F. P.

—Your description does not sound very favourable for Roses. Can you not devise some slight protection against the strong south-west winds? A dozen hardy H. Perpetuals will be found in General Jacqueminot, Jules Margottin,

Baroness Rothschild, Annie Wood, Mrs. J. Laing, Ulrich Brunner, Duke of Edinburgh, Charles Lefebvre, Fisher Holmes, Comtesse d'Oxford, La France, Alfred Columb, and Dupuy Jamain. Teas: Marie Van Houtte, Anna Ollivier, Madame Lambert, Homère, Dr. Grill, Ernest Motz, Comtesse Riza du Parc, Souvenir d'un Ami, Goubault, Sunset, Safrano, and Perle des Jardins. If possible get a little clay or stiff soil and mix with your own, then apply whatever manure comes to hand, with the exception of soot.—P. U.

5194.—**Climbing Roses.**—If the long shoots on your climbing Roses are 9 inches apart they do not require to be thinned out. You may, however, take off a few inches of the soft tops at once, and at the same time cut back to the second or third eye the short growths. The plants in pots may be pruned now if they require it. The harder you prune the later they will flower. Probably the younger plants will be all the better for being cut down to within 9 inches of the pot. You had better keep the pot-plants on the floor of the house, and with a view to retarding them keep the house well ventilated both night and day, except in very severe frost—as a matter of fact, a few

varieties of Roses you have. Some of the Noisettes are not suitable for you, especially those that flower in large clusters, like Aimée Vibert. I should prefer to confine my selection chiefly to the Teas, and if given good culture, some of the old ones remain unbeaten for continuous flowering, such as Adam, Alba rosea, President, Letty Coles, and Isabella Sprunt. The greatest difficulty will be in getting flowers during the months of November and December. They are better obtained from plants that are rested in the open air from the end of July to the end of September. Before they are taken outside let them be pruned into shape, if necessary, and given larger pots. Until they are taken under cover again all the flower-buds should be picked off. The plants that are to flower after Christmas should remain in the open air, with the pots plunged in ashes until the end of November.—J. C. C.

— With thirty plants of these it is certainly possible to have bloom all the year round, but not in any quantity. I would arrange them in three batches, and in order to make the following notes more clear, we will suppose that at present they are all established in pots and quite dormant. Select the ripest plants of such

A GARDEN OF HARDY FLOWERS.

The outdoor garden at Edge Hall is remarkable for its fine collection of hardy plants. The hall stands on the side of a hollow watercourse worn in the stiff clays which in Cheshire often lie over the sand rock. The open space round the house is covered all summer with a dense forest of herbaceous plants—every ornamental kind which will thrive in the cold and damp soil on which the house stands being cultivated here. As for the rest of the garden and the many little rockeries on which choice alpines get unremitting attention, much information about them has from time to time been afforded in various gardening papers. The illustration herewith given shows well the beauty and value of bold groups of hardy plants.

Mimulus maculoeus.—I would like to remind readers that although seed of any choice strain of *Mimulus* is very small and may be thought tender, yet it is a very hard seed and rarely suffers from chill or damp. I always found that, sown either in December or January in a shallow pan, literally on the surface, of fine sandy soil and protected by a broad, clean piece of glass, germination even in a cool-house



OUR READERS' ILLUSTRATIONS: The Garden at Edge Hall, Malpas, Cheshire. Engraved for GARDENING ILLUSTRATED from a photograph sent by the Rev. C. Wolley Dod.

days of frost from now to the end of February will do them more good than harm, as it will keep them from starting into growth so early. With regard to the top-dressing of the border and those in pots the present time is very suitable for the operation.—J. C. C.

— You have grasped the right idea when growing Roses in unheated houses—viz., to keep them as backward as possible. As you truly remark, late frost, combined with damp, are often the cause of failure unless kept backward. It is a very good time to do the mulching as you propose. Cut away the side growths, and thin out any of the stronger ones where unduly thick. Next season confine each plant to two shoots, or, at most, three. The ordinary growing Teas may be pruned fairly hard, and then allowed to come on at will, but being subjected to the same cool treatment. I think, and sincerely hope you will be successful, as you are evidently well in the right track at present. Shall be glad to hear next spring.—P. U.

5184.—**Tea and Noisette Roses.**—By skilful management you may succeed in doing what you want, only from thirty plants you would not get any great quantity of flowers any one time. Something will also depend on the

varieties that produce thin or few-petalled flowers—Madame Paleot and Safrano are examples—also one or two of the strong climbers which bloom most freely, say Marchal Niel and Reine Marie Henriette. These will be more amenable to hard forcing than others, and will soon come into bloom under such a temperature as you possess. This batch of ten or a dozen will flower during March, and must be grown on freely during that time and until June or early in July. If grown in the open air steadily for a time, and then encouraged to ripen early, these same plants may be introduced again in October, and should then be in flower during January of the next year. The second batch may be brought into heat about February this first season, but should be started about now after the first year. They will then come in when the late autumn-started plants are falling. Keep the third batch backward, and get them in bloom late enough to still throw a fair quantity until Christmas. With Teas this is not difficult, because they are late and almost perpetual flowerers. As the latter will be growing late, they can rest in a cool pit until late again the following spring. There will be great need for strict cleanliness if Roses are to flourish in the house from one end of the year to the other.—P. U.

or frame would result in ten days, and that it was thus too easy to have literally hundreds of seedling plants to put out in the open ground for summer planting so early as the middle of April. It is but needful to prick out the seedling plants thinly into other pans or shallow boxes when the seedlings are large enough to handle. In a month, perhaps, they will need still more room, and are then best planted out 4 inches apart in a cool frame. Here, protected partially from frost, the plants will make strong growth, and will be large clumps of several shoots ready to plant out in the open ground early in the spring. Really these *Mimulus* are half-hardy.—D.

Labelling plants.—A great deal of annoyance is often caused through the omission to make sufficient note of the whereabouts of bulbs and the smaller herbaceous perennials. I do not admire a lot of conspicuous labels; but neat ones with the names written plainly thereon will prevent the roots being disturbed or otherwise injured when forking over the border. Not only will you derive greater pleasure and interest from knowing the correct name, but a glance will show you where it is allowable to dig and where not. Many a future crop of some favourite has been quite ruined through the neglect of this simple precaution.—P. U.

THE KITCHEN GARDEN.

A FREE USE OF MANURE.

Those private gardeners who have not previously seen but little of what is going on in the market gardens and farms round London and other large towns are invariably impressed with their first glimpse into the ways of those working these. Especially are they surprised at the quality and quantity of manure that is used. As a rule, private gardeners fail to get enough solid manure, and in very many instances have to be content principally with what has previously done duty as hot-bed material. Very poor stuff the latter is, or little better than a mass of humus, and such ought always to be supplemented with fairly liberal supplies of chemical manures, that most generally needed being potash in some form. To all appearances market growers apply their cheaply-obtained and really good animal manure—the principal fertilising properties not being either washed out by rains or dissipated by undue fermentation—at the rate of not less than 30 tons, and not infrequently nearer tons to the acre. The ground being in a good condition for receiving this, it both can and does produce enormous crops in close and rapid succession.

GOOD STABLE-MANURE, such as can be obtained in the neighbourhood of large towns and also any from a mixed farmyard, more especially where the fattening of beasts is going on, is as near perfect as can be mentioned. In this case it appears next to impossible to overdo the ground with this in a semi-decayed state, always provided the cropping is close and heavy. It is very different with the rotten stuff that has to do duty in very many private gardens. This contains but few constituents of a plant-sustaining nature other than moisture, and which humus both holds and absorbs from the atmosphere. In the course of a few years this kind of manure sinks into a clayey nature, especially those of a clayey nature, and this can best be corrected by a dressing of lime instead of manure applied at the rate of two bushels per square rod. The lime must be preferred is that obtained from the magnesia limestone rock, and this ought to be applied direct from the kiln. It can be most simply slaked by being laid in small heaps and covered with soil for a few days, and should then be spread over the surface of the previously dug ground and forked in. The effect of this dressing on manure-sick ground is almost magical. It has the effect of liberating food previously locked up, and enters into combinations with other constituents required for the invigoration and sustenance of vegetable life generally. It was not, however, my original intention to discuss the nature of manures, but rather to touch upon what crops stand most in need of—rich food at the roots. All things considered, the most liberal use of solid manure is advisable in the case of

GLOBE ARTICHOKE and **RHUBARB**, as it is scarcely possible to grow these too strongly. On dry, hot soils and poor ground generally, the former fails badly in a dry season, and at no time are the heads so large and succulent as desirable. For these crops, resort to trenching or double digging, mixing manure freely with both spits, while if the nature of the ground renders trenching impossible, increase the depth of surface soils by means of additions of compost in which strong loam and manures figure largely. In my case Globe Artichokes are of such importance, that I would deny any other crops solid manure in order to let the former have plenty both mixed with the soil and in the form of a mulching. Rhubarb is not nearly of such importance, but pays well for liberal treatment. Onions if wanted of large size must have plenty of solid manure in the soil in addition to soot and other manurial dressings, and even if medium-sized to small roots are preferred, it is advisable to make the ground rich, fineness of soil and thick cropping being the rest. Soot, in addition to being a good fertiliser, is also, to a certain extent, a preventive of Onion-grub. It pays well to well fork in half-a-bushel to the rod now and to apply another somewhat lighter surface dressing just prior to sowing the seed. It is an old custom to sow

ONIONS in succession, to Celery, the latter being sown up to the ground in the best condition for the reception of the former. Such

may be the case in some few instances, but, as a rule, Celery exhausts all the manure placed in the trenches, and the apparently finely divided state of the surface of the ground when levelled is altogether misleading. The surface may be perfectly fine, and just underneath patches of soil closely run together wet and cold be found. It answers my purpose to devote ground previously cleared off early and mid-season Celery to Onions, but advantage is taken of a frosty morning to wheel on a good dressing of manure, rough digging following as soon as practicable. Thus treated, the soil breaks down admirably at sowing time, invariably producing a good crop of medium-sized, firm Onions, and when the latter are cleared off very little further preparation is needed for spring Cabbage. If Carrots, Beet, Salsify, and such like, were to follow Celery, I would yet advise digging the ground deeply after the levelling has taken place, no animal manure being given, however. Contact with the latter and also masses of wet trampled soil buried well below the surface by the levelling process cause tap-roots to fork badly. These, therefore, should have a finely divided deep root-run, and if solid manure is applied it must be buried not less than a foot deep. It is a mistake to be too stingy with manure as far as

POTATOES are concerned. Doubtless market-gardeners somewhat overdo their dressings, contact with so much strong manure having the effect of impairing the quality of the crops. If such is not the case, how else are we to account for the bad quality of the bulk of market Potatoes as grown in the vicinity of large towns? If good, solid manure is applied at the rate of 30 tons to the acre, this being dug in now where the land is of a heavy nature, and not distributed market farmers' fashion along the drills at planting time, the Potatoes will get the full benefit of this, and leave the ground in splendid order for any member of the Brassica family or Strawberries. Gardeners having nothing but poor rotten manure to wheel on to their Potato ground ought to supplement this at or near planting time with either soot, guano, or superphosphates and kainit. Well-decayed garden-refuse, in every five loads of which one load of fresh lime has for some time previous been well mixed, is one of the best manurial dressings that can be applied by way of a change to Potato ground.

PEAS, BEANER AND BROAD BEANS must have plenty of manure under them, or they are liable to fail badly in hot, dry weather. The manure dug in ought also to be only partially decayed, as I have repeatedly found that where old but not very rotten manure has been used, the former especially has been badly attacked at the roots by eelworms. When once the latter make their home in the roots these become greatly swollen, and both root-action and top-growth are quickly paralysed. Wood-ashes mixed with the manure and very lightly sown with the seed is a preventive of insect attack at the roots, and also acts as a powerful fertiliser. Sown too freely with the seed it is liable to cause the latter to decay, and the soil in the drill ought only to be just whitened by dry wood-ashes at sowing time. Kidney Beans will thrive well for a short time on unmanured ground, and produce heavy crops if they succeed a crop for which manure was freely dug in.

CAULIFLOWERS revel in a rich root-run, the strong fresh manure dug or ploughed in by market growers suiting them well. To have them extra fine, or say fit for exhibition, manure should be freely dug in and liquid manure given in large quantities when the hearts are forming. If Brussels Sprouts are given good room and a moderately firm root-run there is not much likelihood of too much manure being applied at the roots, and the same remarks apply to Broccoli generally. Broccoli, Chou de Burghley, and Savoys I prefer to plant in succession to Lettuce, Strawberries, or any other crop for which manure was freely used, a moderately rich, yet firm root-run best suiting this class of winter vegetables. H.

5104.—Size of a Tomato-house.—As to length it all depends upon the quality of plants you require; but a small house might be 12 feet long, 6 feet wide (lean-to house), back 30 feet high; front, 2 feet high, with bottom 30 feet to open. The steeper upright the roof the better it answers. I saw a house this season

of the above dimensions completely loaded from bottom to top with very fine fruit, some ripe and others green. The plants were planted one foot apart, and trained up roof on a single stem.—E. VOKES, *Kingsworthy*.

TOMATO-GROWING IN BOXES.

THERE is no denying that the demand for good home-grown Tomatoes still increases. It is true one sometimes sees a good crop in the open air, but this is often the exception than the rule. This being so, I content that everyone who has a demand for Tomatoes should endeavour to grow as many as possible under glass. During the last four years I have had a regular supply of Tomatoes from under glass from May to the following February. This has been accomplished in a large degree through adopting the plan of growing these in boxes, which have many advantages. First, they can be placed where pots often cannot. Every season I grow a good many in old wine cases. These are placed on shelves of vinerias or other fruit and plant-houses, where often pots could not be used. Early in the autumn I sow a pot each of two or three reliable kinds. As soon as the seedlings are an inch high they are placed in a temperature just high enough to keep them moving. Early in the year they are potted off. When large enough, about the middle of March, two or three plants are put into an old wine case; these cases are placed on shelves of vinerias wherever room can be found. As the days lengthen it is astonishing how they thrive in such positions. From these plants I usually gather early in May, and often afterwards continuously through the summer and autumn. I have a long Peach case. It is high, but only 8 feet wide; the lights push open in front. In this house I used to plant out Tomatoes wherever I could find room for a plant. When treated thus it was seldom I got any fruit to speak of; the generous treatment the Peaches received was too good for the Tomatoes, as they grew all to wood, and what did set was often too late to ripen on the plants. Last year I resolved to grow them in these shallow boxes. In this house I had a splendid lot of fruit, and when the weather became so cold that it was not safe to allow them to remain there any longer, I removed them into a late vinery, standing the boxes on the ground and placing a string strained to some sticks to tie the growth up to. Here they ripen off grandly and continue late. Some few years ago I remember calling at a market nursery near Farnham, Surrey, and here I saw two or three long span-roofed houses that were used in winter for storing bedding plants. In summer these were used for Tomatoes, which were grown in shallow boxes, I believe old egg cases cut in half. I am convinced that it is a mistake to grow Tomatoes in too much rich soil. I use nothing but heavy loam and burnt earth, at planting time just adding a few leaves at the bottom of the box. When the plants have set a crop of fruit, then I begin to feel, continuing it all through the season, changing the manure occasionally and sometimes adding a little fine soil with just a sprinkling of artificial manure. The boxes I use are of various sizes and depth, but the most of them do not exceed 10 inches to 12 inches.

5058.—Early Potatoes and Brussels Sprouts.—The distance apart at which the rows of Potatoes should be planted, depends on the fertility of the soil and the quantity of haulm natural to the variety. Some kinds with very dwarf haulm, such as Sutton's Ring-leader, need not be planted more than two feet apart from row to row. In this case the Sprouts should be planted two feet apart in the rows, other kinds of Potatoes, such as the White Hebron, when the soil is rich should have the rows placed four feet apart. This last season I made a bed of Brussels Sprouts and Potatoes in which the rows of Potatoes were four feet apart. I never had a finer bed of Brussels Sprouts, and as to the Potatoes, I never before grew any nearly so large. Under one root I found two tubers that weighed 3 lb. 10 oz, and 3 lb. 6 oz. respectively. I should state that these tubers were of bad form. The heaviest I had fit for the exhibition-table, was 2 lb. 6 oz. It might interest some readers that "go in for" growing large Potatoes if I say how I grew

them. I bastard trenched the land, putting a thick layer of material from the rubbish-heap on the bottom of the lower spit. When I planted, I used whole tubers about the size of hen's eggs, having first removed all the eyes but one from each tuber. I placed them about three feet apart in the rows. When they were ready for earthing up, instead of doing this, as the weather was so very dry, I put in a layer of rotten manure about 2 inches thick over the whole bed.—L. C. K.

CABBAGES AND THEIR CULTURE.

THE cultivation of spring and other Cabbages, however simple it may appear, concerns the majority of gardeners who have to supply a household. Coming in when other vegetables are scarce, the earliest heads are anxiously looked forward to, and rarely afterwards, where abundance of choicer vegetable are grown, are Cabbages allowed on the dining-table. Not that later batches should be despised in the smaller gardens, as during a genial growing season the quality is anything but unsatisfactory. The smaller side sprouts after the main head has been cut are generally, where growing on well-manured and worked ground, of the highest quality, being very tender and of delicious flavour, and are often preferred by many people to even the main heads themselves. With our improved early varieties the cutting is quite a month or six months earlier than when we had to depend upon the larger-growing varieties. This is not the only advantage, as the sowing is even hurried out a month or three weeks earlier, which is another advantage, as the plants can be put out earlier and become well established before the cold weather sets in. On

CLAY SOILS this is of the greatest benefit, as those who may have to deal with such ground are well aware, as upon the advent of wet weather planting is carried out with difficulty, and often seriously delayed. When such as this happens the plants cannot become established, and upon a spell of frosty weather the plants are often killed outright. As regards the quality of even any of the varieties, there cannot be any comparison between those growing on well-manured and worked ground, and others on soils of the opposite description. Some people think any kind of preparation will be suitable, with the result, if the ground should be in a poverty-stricken condition, that the produce will be very poor in quality, consequent upon the lengthened time the heads took to come to maturity. Under such treatment Cabbages are emaciated, and probably rightly so, but given a generous diet and a well-worked plot, the quality should suit the most fastidious. The middle of July is now looked upon as being a suitable date for sowing for the earliest cutting.



Fig. 1.—Cabbage "Large York."

an extra week or fortnight's limit being allowed in the earliest districts.

SPECIAL DATES FOR SOWING in many instances are hard, and from August 16 to 20 is by many considered the best time for sowing. No doubt this would be correct if the older varieties were relied upon, but not those previously named, or even other good recognised varieties. The value of a bed of spring Cabbages is gauged by its earliness. As a safeguard against accident, plants from a sowing made about August 20 will be secure against any frost we are likely to experience and come in for making good any gaps or even for summer Cabbages. The mistake is often made of not raising nearly enough

plants for planting out, with the result that very small plants have to be used and which are in danger of being devoured by slugs. Seed is cheap, and a seed-bed need not occupy a great extent of ground. I do not favour thick sowing, as I consider this very unwise, and generally the forerunner of mishaps later on in the season. Bolting may be laid more to this source than sowing early. Nor do I favour sowing on poor ground, for the seeds are so slow in germinating and the aftergrowth so slow, as to cause a considerable check. The seeds being sown thinly in wide drills, sturdy plants are forthcoming and in



Fig. 2.—Cabbage "Winningsstadt."

cultivation for making a satisfactory aftergrowth. On sunny soils, especially in old gardens, clubbing is very prevalent, and where preventive measures are not taken, whole breadths, if not exactly cleared off, are considerably weakened by the attacks. In all cases a change of site is beneficial. Cabbages follow well after Onions. In those gardens which are subject to attacks of clubbing the old stems or clumps should all be cleared away and burned, thus destroying great numbers of the larvae.

DUNGHI in this old refuse is often resorted to where manure is scarce, and often where there is sufficient otherwise, but it is of more value when burned and the ash returned to the ground. Slugs and all such marauders as well as the larvae of root-eating weevils have their strongholds thus considerably weakened by this course of action. Good cultivation with a change of site is the panacea for this destructive pest amongst Brassicas. A free use of soot and lime is also a good preventive measure and should be resorted to, this being lightly forked into the ground previous to planting. Dusting the young seedlings with wood-ashes or powdered charcoal is also a commendable practice, and, previous to planting, all excrescences should be pinched off, these invariably lodging a maggot. The precaution of dipping the roots in a puddle formed of soot, lime, and soil in equal parts should also be taken. Any plants left in the seed-bed for future planting should also be lifted and undergo the same process. When ready for planting, the smaller-growing varieties should be set out 18 inches apart in the rows, with the same distance between. In the case of the larger growing sorts 2 feet is necessary. On light soils I prefer planting in deeply drawn drills, but on heavy soils on the level. A free use of the hoe will greatly assist in forming a good plot of Cabbages. Upon the approach of the early spring months, when growth is recommencing, a little guano sprinkled about each plant and hoed in will hasten growth considerably; so will also a light sprinkling of nitrate of soda, this latter being an excellent stimulant. The least sign of a blue tinge appearing in the foliage is a sure signal of assistance being needed. Excellent sorts to grow are Ellam's Early, Large York (Fig. 1), Nonpareil, English Market, Winningsstadt (Fig. 2), and St. Denis (Fig. 3).

5131.—A large Tomato.—I grew the Tomato Pomerosa last summer. From one plant I gathered a fruit weighing 13 1/2 lbs. I did not have the plants sent me till very late in the season; but you must not expect a quantity of fruit this size from a single plant. I grew it in a pot in a cool cucumber-frame. I believe if planted early it would grow very much heavier than the one above stated. Colour, a light-salmon. Fruit contains but a very few seeds. (C. O. H.) One seeds in three fruits.—E. VOYLES, King's Worth.

SEED POTATOES IN WINTER.

A good deal of discussion goes on as to whether we should use whole or cut sets of Potatoes, but my impression is that a good deal more depends on how these are kept during the winter. Potatoes for seed must be kept out of the reach of frost, but need not be excluded from light or air, as is the case with Potatoes for cooking; but the difficulty is to get space for storing a sufficient quantity of seed, where it is safe from frost, and yet not so warm as to excite growth. I keep a quantity of both early and late sorts, and the early kinds, when quite ripe and fit for storing in July, and unless great care is taken they will grow out prematurely, and a good deal of the strength of the tuber will be lost. I have lately sorted them all over, picking out all the sprouts and bad tubers, and then spreading them out as thinly as possible on shelves or floors of stores, keeping them open in mild weather, but covering with mats or litter if very severe frosts prevail. As a rule, I only pick seed Potatoes over once, for there are scarcely any diseased ones at all this year, and the sprouts they make after this date will not be any too much advanced for early planting. It is only when packed together thickly that there is any danger of the sprouting doing much harm, for if spread out thinly they will remain in a fit state for planting for many weeks. Keeping quite dry, as well as quite cool, is of the greatest importance. Anyone having only a small quantity of seed to winter in a small space cannot do better than pack them into shallow boxes, with not more than three or four layers of Potatoes in each, and set the boxes one on the other. They will keep dry, and the air will circulate freely amongst them, and in case of severe frost a mat will cover a good many boxes. J. G., Gosport.

Bush Marrows.—Although these varieties of Marrows are rarely found in ordinary market gardens, yet I have seen them in some small cottage or amateurs' gardens, where they are esteemed because they occupy but comparatively little room and are fairly prolific. No doubt one of the best is the once so highly favoured Custard Marrow, or, as sometimes called, the Elector's Cap. This is small, and most resembles a round pie made in a small basin or a deep saucer. It has thick, pleasantly-flavoured flesh, and should be cooked when the skin is quite tender, as it is not easily removed, owing to the peculiar shape of the fruit. The Geneva Bush Gourd is also prolific, and excellent cooked young. The fruits are round, flattish, and lobed, with green rim. It is a matter for surprise that by intercrossing with Pen-y-llyn, Moore's Vegetable Cream, or some other of the best and most prolific of the

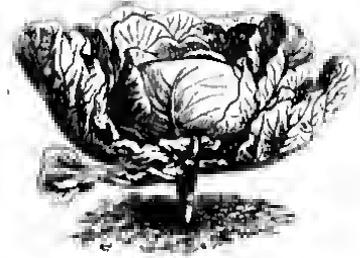


Fig. 3.—Cabbage "St. Denis."

travelling varieties, some intermediate sorts have not been produced that are worthy of general cultivation.—A.

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PLANTING EXPOSED GROUND.

CURVE OF TREES.—Next to the best method of planting exposed and hillside ground, the kinds of trees best suited for withstanding prolonged storms and the greatest amount of cold will be a matter of first importance. What should be aimed at first is to lure the outer boundaries of the plantation composed of trees that have proved most suitable for doing battle with the wind. The southerly and south-western boundaries are usually in this country those that suffer most, but the particular lie of the ground and adjacent hills may have much to do in deciding this important point. However, in any case it is just as well to ensure partial safety by gleaning the woodland from every side, and the best means of so doing will now be considered. The outer line or lines should be composed mainly, if not wholly, of such well-tried and valuable subjects as the Scotch, Austrian, Corsican, and mountain Pines (*P. sylvestris*, *P. austriaca*, *P. Laricio*, and *P. montana* or *P. Fumilio*), interspersed with the common Sycamore (*Acer pseudo-Platanus*), the winged Elm (*Ulmus alata*), the shaggy Hornbeam, Alder and such-like trees; while amongst these, and so as to make the ground thick with vegetation, the common Gorse, Broom, and native Juniper will all help and succeed if the soil is at all good. How these particular trees have succeeded in a plantation that I formed on the flanks of an English hillside, and at nearly 1,000 feet altitude, might now profitably be discussed, for the old adage that experience teaches still holds good in our own time and particularly in tree planting. Amongst the

THREE PINES—*sylvestris*, *austriaca*, and *Laricio*—there is little choice; indeed, they are all excellent trees for the work under consideration. I tried to make a choice of one over the other two, but here the *Laricio* seemed to stand best, while a little further on a fine green-leaved bushy Austrian asserted its right to supremacy for planting on the wild mountain-side. Then the Scotch stood so well out, even when in the very face of the worst storm, that I felt an injustice would be done to place my foreign species ahead of our own native and well-tried tree. There is something in the fact of one tree of a particular species—say, the Austrian—growing better than another of the same kind not a dozen yards away, and where both soil and atmospheric conditions must be exactly similar. To account for such a difference is indeed puzzling, and one might stand at the base of that wild craggy hill and look long and wistfully in trying to solve the mystery why such should be the case. No doubt the peculiar constitution of the particular tree has much to do with it, and this may be placed as a first reason; but there is a second that may not have occurred to everyone, and which for a few years, at any rate, would materially affect the growth of a particular tree—that is, injury to the roots before being planted, and which under ordinary circumstances it must take a long time to put right. There is still another supposition, or perhaps I should use the word affirmation instead, and that is that trees moved under peculiar circumstances, shelter being a prime mover in the matter, must and will be affected somewhat by a change to a totally different altitude probably so much as to nearly 1,000 feet. This may be illustrated by a rather curious fact that came under my own observation in laying out the particular plantation to which I have referred. On the ground, or rather growing on a hillside at some little distance away, so as to ensure full justice being done in all sides, were several plants of the mountain Ash, Birch, Gorse, and Broom. Just as an experiment I had these carefully lifted and replanted in the plantation, whilst alongside these, others from lowland ground were inserted. To-day the difference in the two is very marked, the mountain ferns having kept ahead of the lowland trees, until now they have almost ousted them from the situation. There can be no doubt that acclimatisation has a great deal more to do with plant life than we give it credit for. The sceptical may say that the conveying of the lowland plants for such a distance would materially affect them by loosening and shaking the soil from the roots, but I may just say that the trouble and value of the experiment were such that everyone who has had hillside planting to do must have noticed the difference at

growth between plants raised at high altitudes and those brought from lowland sheltered situations. The difference in growth between a strong

SCOTCH OR AUSTRIAN PINE and one that has been planted on the same high ground is truly remarkable, and leads one to the belief that were it otherwise practically, seed-sowing would be preferable to planting out. The Austrian Pine is a first-class tree for imparting shelter on exposed ground, its big massive branches thickly furnished with wind-defying, shaggy foliage, and adaptability to soil of a very poor description rendering it a most useful and valuable subject. There is an evil which I have heard sometimes spoken about, and that is that the tree is easily uprooted. This I have only found the case where big—too big—specimens have been planted out, but where the tree is used when only 2 feet or 18 inches high, the evil is considerably minimised, if not, indeed, got rid of altogether. There are few trees, coniferous at least, that do not suffer when planted at, say, the height of 6 feet to 8 feet, and this practice is, unfortunately, too common in small gardens and little properties. The Austrian roots shallow, we will grant, but so does the Scotch, and so does every Pine for that matter; but the root-spread is of the widest to compensate for the surface partiality. Then it may be argued that the timber of this Pine is not of such value as to ensure our planting the trees in question in any great quantity, and this is an unfortunate mistake that many fall into. A tree that will grow and live in positions where at times one can hardly keep his feet owing to the keen fury of the wind must not be contemned, for the very fact of its living and thriving on the windward side allows us to plant other trees that are less valuable in the same way to the leeward of it. Once a screen of the better trees has been got up, the interior of the wood may be planted with almost what you like. There can be no question that the Austrian Pine is one of the most valuable trees for shelter-giving with which we are at present acquainted, but that it is either equal to, or superior to, the Scotch or *Laricio* I do not feel inclined to say. W.

CRIMSON SATIN-FLOWER (BREVORTIA COCCINEA).

This name is now applied to *Brodiaea coccinea*, one of the prettiest California plants in cultivation. It is also a sure and free bloomer. It thrives extremely well in dry, well-drained borders, especially where deep planting is resorted to. It is also a most useful bulb for



Crimson Satin-flower.

pot culture, and as it is much showier than many of our spring bulbs, it is always an acquisition for that purpose. As a cut flower it is charming, so handsomely do the flowers hang over the edge of the glass in which they are placed. The leaves are about 2 feet long, narrow, and bright-green. The lower-stalk is about the same height, and bears an umbel of from ten to twenty drooping tubular blossoms, each about 2 inches long; their lower half is bright scarlet, abruptly tinted with yellow, and the recurved lobes are green. It flowers naturally in May and June.

INDOOR PLANTS.

BEDDING PLANTS FROM SEED.

THE time for looking over the stock of bedding plants is now close at hand, and those who have to supply a large quantity from a limited space under glass will find it very much to their advantage to employ a good many that can be raised from seed, as it does away with a good deal of work in the early part of the winter, when the houses are crowded with *Chrysanthemums*, and when all the space is required for other things; but by utilising plants of an annual character that can be grown up to a good size by May, if sown in February the work is greatly simplified, as space can be made in pits, frames, &c., as soon as the days get out, and solar heat comes to the aid of the gardener. The following are excellent well-tried plants—

AURANTHUS MELANCHOLICUS RUBER.—A beautiful foliage plant for summer bedding, with very brilliant colouring; must not be planted out until the end of May.

CRANTHUS MELANCHOLICUS.—One of the most beautiful of silvery-leaved plants. The seed should be sown in pots of light rich soil in February, and placed in a warm pit until the seedlings germinate; then remove to a light shelf, close to the glass, and pot off in 3-inch pots as soon as large enough. They are nearly hardy when full grown.

DAHLIAS (SINGLE) are very showy in the flower garden, and seed sown in February and potted off in March will make fine plants for bedding out in May.

HELIOTRAPE, although generally propagated by cuttings, can in the event of being short of stock be increased readily from seed. After the seedlings are potted off they should be pinched at about 3 inches from the soil to induce a dwarf, bushy habit of growth.

LOBELIA (BLUE AND WHITE) increase readily from seed, which, being exceedingly small, require care in sowing. Fill the pots nearly to the rim with fine soil and sand, then water freely to settle the soil down. Shake the seed on the surface, and cover with a bell-glass. The seedlings will appear in a few days.

NASTURTIUMS OR THROLOZIUMS have of late years been greatly improved, being very dwarf in habit, rich in colour, and very floriferous. If the seeds are kept pinched off they make a brilliant and protracted display. They need not be sown before the end of March, and then only in a cool frame.

PRILLA NANKINENSIS, with a very dark leaf, makes a fine contrast where numerous variegated leaved plants are employed.

FETUNIAS (SINGLE OR DOUBLE) can be raised from seed. Splendid plants for dry seasons. The seed should be sown thinly in pots or boxes of light soils, set in heat in February, and potted off as soon as ready. They flower continuously through the season.

PULMONARIA is a very fine dwarf annual, and makes splendid beds, if sown under glass and pricked off into boxes of light soil, pinching the points out to ensure bushy plants. They should be planted out early.

PYRETHRUM (GOLDEN FEATHER) is one of the plants that cannot be expelled from the flower garden, being excellent for edgings and carpeting under taller growing plants. It may be planted out early in May.

STOCKS of the Ten-Week kinds are beautiful bedders, and should be sown in boxes of rich soil, set in cool frames, in March, the seedlings being pricked off directly they can be handled, or are very likely to dump off.

VERBENAS are very much more robust, if raised from seed than cuttings, and if seed is procured from a good strain, and sown in gentle heat, the seedlings will make fine bushy plants by May. They require pegging down to make them enter the bed regularly before flowering.

TARANTULA, a very small Marigold-like flower of rich golden-yellow, very floriferous. It is used as a substitute for yellow *Calceolaria* in places where they fail, but is more of an orange-yellow than the *Calceolaria*.

JAMES GROOM, Gosport.

Acacia lineata.—This is one of the few *Acacias* which are still fairly well known in private gardens in Britain, its survival after so many have disappeared being due, no doubt, to

its never failing to flower with great freedom even in a small state. Commencing to flower as it does, too, before Christmas, when the Chrysanthemum season is on the wane, its usefulness becomes all the more apparent. Like most of the Acaecias, it has a graceful habit to recommend it. The branches are long and slender and clothed with small linear leaves, to which the specific name refers. It belongs to the section of this genus which is marked by having the flowers clustered in spherical heads. All the flowers of cultivated Acaecias are yellow, and differ only as to shade, some being sulphur coloured, whilst others are almost golden. A. lineata is of a bright and moderately deep shade. To get this species to flower freely the pots should be plunged in ashes out-of-doors in a sheltered but sunny position during the summer months.—B.

WINTER-FLOWERING BEGONIAS.

These do not in some gardens find that favour which they deserve. It is probably caused by the rage existing for what may be termed cut material. They are not the best, I readily admit, for this purpose, but they are not had by a long way. They do not travel so well as many things, therefore that is also in a measure against them. When, however, the flowers can be arranged in water without any delay, they will stand very well. Grown as some grow these Begonias, in too much heat and moisture, is also against them. Even upon the plants then the flowers will not last nearly so long, this ensuing through the susceptibility to damping off; whilst if these plants are used for cutting, the flowers will not stand well. These Begonias require a drier atmosphere with some warmth, it is true, but not nearly so much as stove plants receive on the average. Where Cyclamens, for instance, are now flowering well with a gentle warmth, there these Begonias would thrive far better than in the stove itself. When the plants cannot be accommodated in a house to suit them, then the better plan is to grow them in pits, with a little air on all day in mild weather, and even at night also at such times rather than excite them with too much warmth. The roots must not be allowed to suffer, while, on the other hand, too much water must not be given them. The best safe-guard is well-prepared plants by previous good treatment in the summer, the plants having filled their last shift with roots. Late potting and over-potting are two decided mistakes, both tending towards a too suppy growth rather than flower. Plants more than two years old are not desirable unless they be grown for special purposes, as the covering of the walls in lofty houses, places for which many kinds are admirably adapted, or for training up pillars, where the tall-growing sorts are quite at home. As

SMALL PLANTS to flower well in 4½-inch and 6-inch pots, or at the most in one size larger, the fashionable B. insignis is still one of the very best. In the smaller pots this variety will flower in quite a dwarf state. In the larger the growth will be somewhat stronger, throwing out laterals which all flower profusely. Its colour, too, a pleasing, soft pink, is most attractive. B. Knowlseyana makes a more compact plant in the larger pots, being the more disposed of the two to branch out at the base. The flowers are larger and more of a pinkish-white in colour, but the trusses are generally smaller. This and B. insignis can be readily raised from seed, which should be sowed earlier, and be sown in the spring or from cuttings in the spring. B. semperflorens and B. s. rosea (see cut) both make excellent plants for the winter, either cuttings or seedlings making good plants, too luxuriant growth being specially guarded against. Another capital kind is B. Digswelliana, of dwarf growth, with its flower-trusses produced very freely and well above the foliage. As a decorative plant, this is one of the best for the winter season. B. manicata is one of the best for flowering late in the winter or early in the spring, when it makes a capital plant for the conservatory. Cuttings every spring after flowering, or old ones kept on for large plants for two or three years, give the most serviceable stock. This, too, is a very useful kind for cutting to arrange in slender trumpet-shaped vases. B. Moonlight is of a pleasing colour, and makes a good addition to the winter collection. Under this name I am referring to one which was raised

by Col. Trevor Clarke and grown at Chiswick some years ago. B. prestoniensis is more of an autumn variety than a winter one. It is not much grown now, but some few years ago I well remember nice bushy plants of it being exhibited. Its flowers are of a bright-red colour, very distinct and sweetly scented. Those

BEAUTIFUL VARIETIES of the tuberous-rooted section, embracing the species B. ancotrana and the hybrids raised therefrom, as B. John Heal, B. Adonis, and B. Winter Gem, are all extremely useful, lasting so long in good condition. The duration of the individual flowers is also remarkable; in this latter respect they with-



A perpetual-flowering Begonia (B. semperflorens rosea).

stand the fogs well. Of this section B. Adonis is one of the most profuse-flowering and vigorous growers, whilst as a dwarf plant B. Winter Gem is simply what its name denotes. The culture of these Begonias does not receive that attention it should. As compared with the usual run of Tuberous Begonias, they require more warmth; this of itself is indicated by one of the parents—viz., the species B. ancotrana, which was introduced from Szechua in 1880. What may be termed a cool stove will suit this section of Begonias very well. I am quite of the opinion that it is only the question of a little time before these will be more extensively cultivated. The flower in the early spring note should be made of B. nitida odorata, also known under the name of B. suaveolens. This variety may be safely kept in a moderately warm greenhouse, when, of course, it flowers later. In warmth it can be included with the winter-flowering shrubby kinds. B. nitida itself will flower almost all the year round. I have seen it very fine in the summer, the winter, and spring. B. incarnata purpurea is more attractive, perhaps by reason of its dark, metallic-looking leaves; the flower-trusses, however, but a very long time in good condition. Besides these, there are other kinds which may be used for winter flowering; B. ascotensis, for instance, if bedded out in the summer will, if lifted early, flower well after being repotted. This variety, being a tall grower, is chiefly useful for standing amongst other and dwarf plants. There is also B. Princess Beatrice, a semi-tuberous variety, which can be had in flower in the winter season. G.

5171.—**Poinsettias.**—It is rather too soon yet to cut down Poinsettias. Give the plants six weeks' rest to get the wood firm and well ripened before cutting down; they will break all the stronger.—E. H.

5175.—**Gloxinias.**—These are by no means good window plants, for they thrive best in the moist, warm, and rather close atmosphere of a warm greenhouse or cool stove. In a dry atmosphere they are very liable to be attacked by thrips, and dust is also injurious by choking the pores of the leaves. The only way to do them at all in a window is to defer starting them until the warm weather commences, and keep them as long as possible, or until they become too large, standing on some moist Cocoa-nut fibre in a deep box, with a sheet of glass laid

over, or under ham-lights or cloches. About the end of April would be a good time to start the tubers, placing them singly in small pots of light rich sandy soil.—B. C. R.

—To do any good with Gloxinias in a window the bulbs must be rested during the winter in a dry condition and started into growth early in April; they will then flower during summer, when the natural heat is sufficient.—E. H.

5171.—**Treatment of Vallotas.**—I suppose the common Vallota purpurea or Scarborough Lily is referred to. The secret of getting this beautiful plant to bloom freely and well is to induce a strong growth during the early part of the season, and to ripen it off well in August, and then it seldom fails. The plants should be repotted in March or the early part of April, giving each a pot one or two sizes larger than before. Push them on in a greenhouse temperature, with plenty of water, and at the end of July stand the plants out in the full sun for a month, and give water rather sparingly. These plants do not, however, flower nearly as freely in a large town as in country places.—B. C. R.

—You do not ripen the growth. Encourage growth now, repot if necessary. Do not bury the bulbs much in the soil, and about the middle or end of June place the plants in a frame and ventilate freely even to the extent of full exposure in hot weather, and every strong bulb will flower.—E. H.

5191.—**A span-roofed greenhouse.**—You cannot grow Vines, Cucumbers, Tomatoes, and Strawberries altogether in one house, not to mention anything else. The cleverest man in the country could do no good with such a jumble. If you want to do the Vines justice—and remember that if a thing is worth doing at all it is worth doing well—you must not attempt to grow anything else in the same house (except during the winter, when they are at rest) but a few Ferns, Palms, or Fuchsias in pots. Some Strawberries in pots on a high shelf might be managed after the Vines were started, but even these want all the light and sun they can get, and will do but little good under the heavy shade of the Vine leaves.—B. C. R.

5185.—**Treatment of Tuberous.**—As soon as the bulbs have made roots in quantity plunge in a hot bed. It is best to plunge bulbs of all kinds to allow a little due to root formation before the hard work of forcing begins.—E. H.

5168.—**Lobelia for a basket.**—I do not know of a good blue-flowered Lobelia for a basket; but I may mention, in case you have not got it, that Miss Hope is one of the most delightful varieties of all for a basket. The flowers are not blue, but pure white, and are produced on slender, graceful, pendulous shoots, which trail down over the basket. It is a veritable gem, and will worth growing in every greenhouse.—C. T.

—A good strain of speciosa is suitable.—E. H.
—Lobelia gracilis is decidedly the best for basket work, possessing as it does a long and gracefully drooping habit of growth. It is easily raised from seed, which should be sown in January or February, and may be had in separate colours, as blue, white, rose, &c.—H. C. R.

5123.—**Tuberous Begonias.**—Store the tubers in silver-sand in a dry, but not too warm place, where they will be safe from frost. The best time to pot them is early in the year, using a light, lumpy soil, and place them in a warm frame or greenhouse. Keep them syringed frequently, and do not let the soil be too wet. As the young shoots rise, shade very carefully from the sun, as, if too hot, the foliage will most assuredly get scorched. If in a frame, the plants may be removed to a greenhouse when the shoots are making headway, as a warm, stewing temperature is not required. Stake the stems carefully as they make headway to prevent them getting broken.—F. P.

—Let the Begonias remain as they are till February. By that time there will be signs of growth, and the tubers should then be repotted.—E. H.

5166.—**Creeper for a greenhouse.**—Nothing is better than Gloire de Dijon Rose. This can be pruned in fairly close, and flowers all the year round more or less. Lonicera sempervirens is good where Roses are not approved of. The orange and red blossoms of this latter climber are produced in quantity, and are most useful for lending flowers for vases.—E. P.

5130.—**A garden pit.**—Seeing that you want to grow Melons and Cucumbers in the pit during the summer, and have no fermenting materials, and with the probability that you would like to have these two subjects rather early, you cannot do better than heat the pit with hot water. A small boiler, fixed at one end, and a flow and return 3-inch pipe placed one over the other along against the front wall, with the top pipe up level with the wall plate, will give you sufficient warmth to keep out frost, and enable you to

start growing Cucumbers and Melons early in March. The front wall should be 18 inches or 2 feet above the ground level, and the back wall 1 foot higher than the front. To enable you to keep "Geraniums" in the pit during the winter a ventilator, 12 inches long and 6 inches deep, should be provided in both back and front walls in the centre of each light. For such a purpose as yours a span-roofed pit would be more convenient, with an interior width of 5 feet, and the walls 2 feet above ground all round, with the angle-ends filled up with glass. For such a pit a 3-inch hot-water pipe all round and with a small "independent" boiler fixed at one end, you will get ample warmth. In either case you should provide a movable trellis for the plants to stand on during the winter.—J. C. C.

5118. — **Begonia seed.**—This is the best of all ways of propagating the Tuberosus Begonia, whether the plants are for pots or the open ground. The practice of Mr. Laing, the well-known Begonia grower, is to sow about the third or fourth week in January; and those who have fire-heat at command are recommended to choose this time. Some sow in the summer months, but the seedlings then are apt to damp off. Sow the seeds in shallow pans filled with a soil made up of good leaf-mould, a portion of loam, and sharp silver-sand. Sprinkle over the surface some fine soil to make a good seed-bed, so to say; press it down firmly, and dip the pan in water carefully. Place the pan or pans on a good bottom-heat, and when the seedlings are of sufficient size prick them off into other pans or boxes. They will need transferring two or three times, as the seed, if good, comes up freely. A small, finely-pointed stick of wood will do well for pricking them out with. Early in May commence to harden them off, as they must not be in the least tender when put out in the open. Previously, however, the position in which they are to be planted must be well manured, and dig it up at once, so as to get it thoroughly pulverised and sweetened by frost. This year tuberosus Begonias were not a success—at least, until very late—owing to the unusual dryness of the weather.—C. T.

Watering Palms.—These princes of the vegetable kingdom often suffer from one of two causes. If it be not that of sufficient warmth, it will possibly be that of insufficient moisture at the roots. When the plants are well rooted, as they should be at this season, they will still take a liberal supply of water. To allow them to become dry at the roots is simply a slow process either of killing them or of rendering them so unsightly as to be of but little use. It is in the store where the plants will dry up the quickest, and if so be they are very much pot-bound, they must be looked after daily, seeing at the same time that they are thoroughly soaked. Once watering them is not in many cases sufficient for this purpose, for it may happen that the roots have forced up the soil, so that no average amount of water can be given at any one time. Palms, unlike Tree-Ferns, do not at once show the results of an oversight in watering, but it will appear in due course all the same. There need not be any fear of injury by keeping them watered liberally so long as they are healthy at the roots. Although in most cases any stimulating agent in the form of natural or artificial manures is not advisable whilst but little growth is being made, in the case of Palms it will be found an exception to the rule. These plants require it to sustain them in health and vigour, more particularly when they have drawn out the chief virtues of the soil. For this purpose I have used "Stanley's Manure," a compound of a highly concentrated character. A dusting of this over the surface of the soil about once a week will greatly assist them, a pinch between the thumb and two fingers being enough for the largest plants at one time, others that are smaller being treated in proportion. When this is applied the next watering should be done steadily through a pot with a fine rose upon it. Greenhouse Palms may be treated in a similar fashion, but these will not take quite so much water; nevertheless, do not let them suffer. Where plants for special reasons are retained in extremely small pots, then I would prefer to stand them in pans as a safeguard against drought. Those who may have in their collection plants of *Stenandrium graminifolium*, *Vesuviana splendens*, or any other tropical Palms should

look to it that they do not suffer by a low temperature; for these, 60 degs. at night should be the very lowest.—J.

HOUSE & WINDOW GARDENING.

LEAVES FOR TABLE DECORATION.

DURING the past autumn months I have found coloured leaves most valuable for dinner-table decoration. A few of the best I used were those of *Rosa rugosa*, which were of a very rich yellow hue. On some bushes in a shady situation they were far better than in the sun. The leaves, again, from a Maple I have in the pleasure grounds died off a particular shade of crimson and yellow, and the Silver Maples are also valuable for room decoration. *Ampelopsis Veitchii* has been used with good effect. I had the leaves of some plants of this are far brighter than those of others, although growing side by side. The foliage of *Ampelopsis Hoggii* dies off bright yellow, and may be worth planting beside *A. Veitchii* for contrast. Strawberry-leaves I used



Leaves of a Silver Maple.

with very good results; Keen's Seedling leaves generally turn to a beautiful crimson and yellow, with black spots on them. These I placed two or three together with a single bloom of a *Chrysanthemum* of the same shade of colour in the centre. J.

A FEW USEFUL WINDOW PLANTS.

Most lovers of flowers must have been struck with the superior manner in which plants thrive with one person to what they do with another. There are few sights more pleasing than a cottage window well filled with flowers, and as success depends to a great extent upon a judicious selection, this note may be welcome to some readers of *GARDENING*. Profoundly the most generally useful window plants are the Zonal Pelargoniums, or "Geraniums," as they are more commonly called. These have been immensely improved of late years, and it is possible now to have a great variety of colour with equal freedom in blooming to that possessed by the old *Vesuvius*. Very grand trusses of large blooms are easily secured. The varieties are far too numerous for me to name. All they need is good soil, careful watering, and occasional pinching out of the points. The strongest roots. The Hedgehog Cactus (*Echinopsi-*

cyrosi) and others of the same family will bloom freely. I have also noticed *Epiphyllum truncatum* enlivening a window all through early spring. The grand *Duindo Petunias* which used to be grown by cottagers are by no means so frequently met with as formerly; but there is no reason for this, as they are still among the most suitable. I have heard them objected to on account of being so subject to green-fly, but I do not believe they are a bit more so than in former years. All plants have their enemies, but the window gardener of to-day does not pay sufficient attention to the early application of remedies. With the *Petunia* it will be best to brush the insects off as much as possible, and then syringe with clean water. A great deal towards cleanliness might be accomplished by removing insect pests in this manner. The Giant and Common Musk, the Monkey-flower, Campanulas, Fuchsias, *Frimula obconica*, Arum Lilies (especially the dwarf type now introduced), various bulbs, the Scarborough Lily, *Polyanthuses*, *Pansies*, and many more cheap and easily procured subjects are well adapted for window culture. Among foliage plants we have the Milk or Parlour Palm (*Aspidistra lurida*), the India-rubber-plant (*Ficus elastica*), a large variety of hardy and half-hardy Ferns, &c., which space will not allow of enumerating. The chief points are to select plants of simple cultural requirements, avoiding all which need a warm greenhouse or stove temperature. A most important element towards success is careful and thoughtful watering. At the present time, too, much depends upon the plant being removed from the window at night. When the blinds are drawn, either lift the plants out and stand on the floor or else place a newspaper between them and the glass. Which of these plans is to be adopted must depend upon the weather and also upon the subject you are growing. Give the plants as much light as possible, and syringe them oftener than is generally the practice. A wash freshens them up to a wonderful extent, and keeping the pores open is a greater element towards success than is realised by many would-be cultivators. I would also earnestly warn against the extreme change plants often have to bear when windows are opened upon a brisk, drying day. It is this sudden change in temperature and atmospheric conditions which often affords them an injurious check.

P. U.

Calla œthiopica (Arum Lily) for a room.

—There are few more stately plants than a well-grown *Calla*, and as they do very well in a room-window (without gas) they should more often be seen as a drawing-room decoration than they are. Coming into bloom in December, just when other flowers are falling, they are specially valuable too, and each bloom lasts ten days or more at this time of year in full beauty. Plants that have been well-tended throughout the summer are now very strong, throwing up thick spathe of handsome shining leaves and ivory buds, and these will now need plenty of water. The *Calla* is, in fact, a semi-aquatic plant, and must never become too dry, while at this time of year when it is in full growth it should stand in a saucer of water, or, still better, not-water, in a thin clear state, as it is a hungry feeder. Any neglect in supplying water will result in a bad attack of green-fly, while well-fed plants seldom suffer in this way. The plants may be much helped by a mulch of rich soil around their stems, for they form their large leaves and flowers so rapidly that the soil often sinks an inch or two from the top of the pot after they have started in September, and this should be filled up with more good soil when necessary. A bit of soft sponge and a little luke-warm water should be constantly used to keep them perfectly clean, as their beauty depends so greatly upon the purity of their freely-expanded flowers, and the slightest symptom of green-fly (which often attacks the

smaller foliage near the base before reaching the flower) should be removed with soap and water without loss of time. The plants should be constantly turned round, so as to expose each side equally to the light, and will then grow into very handsome specimens. After flowering—i.e., at the end of May—they are best placed in a half-shady position out-of-doors, and supplied (if kept in their pots) with a mulch of good soil, and plenty of water through the summer. They can, however, be planted in good garden soil, when they give less trouble to keep them watered, in either case being divided and repotted in rich stuff in September.

I. L. R.

1143.—**Cytisus plants in a drawing-room.**—"Daphne" does not say whether gas is burned in the drawing-room in which these plants are placed; if so, that would account for the leaves and buds dropping off. Gas not only dries the air extremely, but gives out highly deleterious gases, which destroy flowers at once, and injure most plants. Those who burn gas must content themselves with foliage plants, such as some of the Palms, the India-rubber-plant, and one or two of the Dracenas, with a few Ficus Ferns, but even these will not look happy if kept long in the fumes of gas. Another possible cause of the flower-buds failing is the cold sharp draught caused by opening windows and doors in the early morning to brush out the room. Plants are best removed into the greenhouse at night, or, if this is not feasible, they should be covered with a newspaper on a side table, to protect them a little from the dust, as well as the icy blasts in the morning. A better plan is to remove them into a bed-room, or a bathroom in which there are hot-water pipes always warm, turning on the hot-water for a few minutes to moisten the air, and they should be allowed to stand here until after breakfast on the following day, being replaced in the bathroom before the gas is lighted. This is an excellent arrangement for Ferns and foliage plants; but where flower-buds are on the point of opening they must have sunshine, or they will fail from that cause. If they can be lifted into a sunny window in the morning they will be much assisted, and they should be placed as near the glass as possible. *Cytisus* plants, and, indeed, all plants in bloom, require plenty of water, and this should be given tepid, whenever the surface-soil in the pots is dry. Never water a wet plant, however, especially if it be a *Primula*, as these damp off easily, just at the point where they emerge from the soil, especially if they have been chilled beforehand. A stand or table, covered by a zinc tray full of fresh Moss (which should always be kept damp), is a good place for room plants if standing in a sunny window; the slight moisture always rising from the Moss prevents the bad effects of dry fire-heat, and helps to nourish the flowers and foliage.—I. L. R.

5187.—**Arum Lilies.**—The window is too cold for the Arum Lily at this time of year, as even in a room in which there is a fire pretty constantly the flower-scape does not unfold satisfactorily. The whole secret of the trouble is that you have not heat enough. This Lily requires a steady temperature of 60 degs. in winter to get the flowers to open properly. The summer treatment is right enough, but another year you may try planting them out earlier or about the end of May. You may then find them showing flower in the autumn before the weather gets very cold.—J. C. C.

—The temperature is too low. Arum Lilies want heat to open their flowers in winter. Should suppose the roots are healthy and sufficiently numerous.—E. H.

—It is simply more heat that is required. At this season the flowers will not expand kindly in a lower temperature than 60 degs. to 70 degs., with plenty of moisture both at the root and in the atmosphere. In a stove or forcing-house they would soon open.—B. C. R.

Saving seeds.—Many people, especially amateurs, save their own seeds, and they wonder why the produce from such seeds deteriorates. The reason is simple enough, as there is no attention given to the selecting of them during the stages of their growth. For example, Peas are picked till only the poorest pods are left. The poorest roots of some vegetables are often saved for seed. Potatoes often are so treated, and that is the reason why the progeny is frequently so poor. Some time ago I

saw a member of a large seed firm selecting his stock of Turnips; he travelled through the immense localities of hulbs, examining carefully those which were to supply the seed which has kept up for long the fame of their establishment.—K.

OUTDOOR PLANTS.

THE PINK.

THIS is one of the sweetest of hardy garden flowers and more easily managed than its near ally, the Carnation. Near where I write Pinks are grown by the acre to produce cut flowers for the markets in the East-end of London. A variety with white fringed flowers is the most popular. The flowers are not more than semi-double if compared with the large full blooms of the show Pinks, but they are produced in great profusion. The plants would grow larger and better flowers if more care was taken with their culture; but the object is to make a profit out of the cut flowers, and this cannot be done, it seems, unless the plants are merely laid in as the ground is ploughed. And this passes for planting, and the farmers are satisfied if they can obtain 1s. 6d. for a dozen bunches. Each bunch is a good handful. I have grown this same fringed white variety in my own garden, and like it better than the varieties with full flowers, which burst the calyx and are quite useless for cutting. The coloured border Pinks are very pretty, and may either be grown as hardy border plants or be specially prepared for forcing. The fringed white is a good one, and

LADY BLANCHE, which I cultivated for twenty years, is the prettiest of the white varieties, but it seems to have much declined in vigour. I do not like the over-full flowers of such a variety as Mrs. Stukins. Lord Lyons, is, I think, the best of the rosy or pink-coloured varieties with dark centres, the older variety of this type, Anne Bolayn, having larger and less pretty flowers. Derby Day is distinct from the above, these three being good type flowers. It is not well to force them an early in a very high temperature, but with care and a little gentle forcing they flower profusely in April and May. April is a good month in which to strike the cuttings. The small side growths strike more readily than Carnation cuttings in a forcing-house or hot-bed, and they must be planted out in boxes soon after roots have formed, and be grown on in frames to be planted out about 1 foot asunder in May or early in June. Keep the hoe at work amongst them in summer, and water when dry, but weather sets in. About the last week in September or early in October the plants may be taken up and placed in 6-inch or 7-inch flower-pots, according to their size. They may be placed close together in cold frames ready to be transferred to a gentle heat at intervals from Christmas. A few plants should be put in every two weeks. It is not necessary to have special forcing-houses for Pinks; they can be placed in an earlyinery or Peach-house when started, and as the flowers begin to expand, place the plants in the greenhouse, where the flowers will open well and remain longer in good condition. Green-fly may attack them, but in other respects they are easily grown, and the aphid tribe may be destroyed by dipping or fumigating. The plants may not all be wanted to force, but they winter well out-of-doors if planted in October. The

Snow Pink is not adapted for forcing, not that the plants are not amenable to culture under this treatment, but their individuality consists in what the fanciers term lacing—that is, the marginal colour, which disappears wholly or in part if the plants are forced; moreover, it will be found that if the plants are kept in boxes and planted out in the spring the lacing is almost sure to be imperfect. The details of the management of lacee or show Pinks may be summarised as follows: It is a good thing to get the pipings in early, say as soon as they can be obtained after the middle of June. I used to propagate Pinks very well at a time when I neither had frames, hand-lights, nor glass structures of any kind. My plan was to prepare a piece of ground in a shady place by mixing with the soil coarse sand and well-decayed leaf-mould. Get the pipings off on a wet day, and when the ground is wet. I do not use a stick to

put them in, but simply press each piping into the ground with the first finger of the right hand. They will form roots out-of-doors, and if wet weather sets in for a time scarcely one will fail. If the weather is dry and sunny, they must be shaded, and sprinkled with water once or twice a day. They strike more readily, of course, if planted in boxes and pined in a gentle hot-bed. When the pipings have formed roots and have grown a little, they must be planted out in a favourable place out-of-doors about 4 inches asunder, to be planted again about the end of September in an open position and in good soil. The soil should be well prepared previously, and be in good condition at planting-time. If it should happen to be very wet and the rain continues, it is a good plan to dig out the soil where the plant is to be placed with a trowel, replacing the wet material with some nice dry compost from the potting-shed. This gives the plants a good start, and a chance to become well established.

GOOD STRONG PLANTS may be set out about a foot asunder. The Pink has a more slender, wiry stem than the Carnation, and is not quite so readily destroyed by wireworms; but this pest will attack and kill many if it is in the soil. The leather-coated grub buries itself in the ground by day, and, venturing out at night, it eats the leaves voraciously, retiring underground when satisfied. It can generally be detected feeding at night with a light, or if the ground is scratched to the depth of an inch or two it may be found, or by the pieces of Pink leaves they have tried to drag under ground. Slugs are also troublesome. Alternate frosts and thaws also throw the plants out of the ground, and it is necessary during winter to look over them several times and make the plants firm by pressing them in with the fingers. They seldom suffer from the effects of climate in Britain north or south, but it is well to raise the ground where the plants are above the surrounding level in wet districts. J.

5176.—**Gladiolus The Bride.**—It is quite possible that this *Gladiolus* is sufficiently hardy to pass through a severe winter unharmed on the south coast, but here, in Somersetshire, it cannot be depended upon to do so, only in very sheltered positions. The cornus do not get injured if planted in the autumn, but as they begin to grow directly they are planted the frost injures the leaves, and, as a consequence, they bloom very sparsely, and sometimes not at all. I have put the bulbs in pots in the autumn, and keep them in a cold frame, and plant them out about the middle of April.—J. C. C.

—You may plant hulbs of this in the autumn for early summer flowering, and unless the position is very cold, or badly drained, the bulbs may be left in the ground throughout the winter, with a covering of coal ashes or similar protection. But this type of bulb is best grown in pots, and is very suitable for gently forcing into flower. At any rate, as regards the open, if the position is warm, the soil light and well drained, and the bulbs protected if thought necessary, they may remain in the ground through the winter months.—F.

—The race of *Gladiolus* from which *The Bride* is derived is hardy enough to stand the winter outside in warm soils, and may, of course, be planted in autumn, being an early blooming kind, that is the natural season for it; but in unfavourable situations it would be safer to pot the bulbs and keep in a sheltered place, plunged in a cold pit, for instance, and plant out in March.—E. H.

5177.—**Michaelmas Daisies.**—The two best dwarf varieties are *Aster acris* and *A. anellus*. The former grows about 2 feet in height, and early in the autumn smothered with lilac flowers. It is a vigorous and handsome variety, not grown half so much as it deserves in gardens. Mixed with *Chrysanthemum Mme. Desgrange*, and a charming effect is got. *A. anellus* has rich purple-blue flowers in profusion, large individually, and creating a wealth of beautiful colour. This grows about 2 feet in height, a little taller than mentioned by you; but such varieties as these must not be excluded. *A. alpinus* is one of the first to bloom, and is a beautiful mountain flower, appropriately called the Blue Mountain Daisy. The flowers are large, and there is a white form. It does not grow a foot in height, and is not troublesome to bloom well. *Hybridus nanus*, grows about 18 inches in height, the growth neat, and forms quite a little bush, smothered with pink

and white flowers. A very fine kind is longifolius formis, the plant growing 2 feet in height, and the flowers of a rose colour in profusion. It is a very useful kind, and you may also select discolor, which attains a good height, the flowers white, passing to a pinkish colour. These dwarf kinds are very fine when massed together, especially *A. amellus*. I may mention that there is a variety called in catalogues *amellus hessarlensis*, but there is no difference between this and the type.—C. T.

The six very best dwarf kinds are *Aster amellus*, the form known as *hessarlensis*, *Aster crispus* and *lewisii*, *A. longifolius formis*, *A. persicolor* (dwarf form), and *A. reniformis* var. *Clara*. These can be obtained true to name from Mr. Barr, of King-street, Covent-garden.—A. H.

5189.—**A steep border.**—The edging of red sandstone gives a good opportunity for growing many pretty things on the margin of the border, and among them the good old *Aralis nuda*, *Yellow Alyssum*, *Anthriscus* in variety, *Thymus serpyllum* and *laingianus*, *Saxifraga hypnoides*, *Phloxes*, such as *amarna* and *subulata* and its varieties, and above all *Campanula pumila* in blue and white forms a thing of beauty the whole summer through.—A. H.

There are plenty of plants suitable for planting in the stone bordering of the border. Tufts of the Mossy Saxifrage and several other forms of Saxifrage, including the London Pride (*S. umbrosa*), which grows and flowers so well in the smoke, *Sedum Sieboldii*, *Honeysuckle* in variety, including the Cobweb *Honeysuckle*. Among early-flowering plants, *Anthriscus* and *Arabis alba* are very pretty. Something might be done with common hardy lilies that would grow through the foliage of other plants, the variegated *Ivies*, for instance.—E. H.

There are hosts of things suitable for such a position—among stones on the edge of a bank of soil, *Anthriscus* in variety, the White *Arabis*, *Alyssum saxatile*, *London Pride*, and a number of other Saxifrage, *Sedum*, *Thillis*, &c., will all do well here.—B. C. H.

Achillea millefolium rosea.—This is also called the Rosy Yarrow. It is a beautiful member of an interesting family, the flowers almost crimson, large, and showy. It will live in almost any soil, grows freely, and has a bushy habit, the height 2 feet. *A. ptarmica* l. pl. is another vigorous species, a most useful border plant, bearing a profusion of double white flowers that are acceptable when cut for decorations. Its proper name is the Double Sneezewort, and it will grow in ordinary soil.—F. P.

Polygonums (Knotweeds).—These are troublesome but beautiful perennials—troublesome for the reason that once established in a garden it requires patience to prevent the plant running into every nook and corner, and making many fair favourites from their rightful position. The most familiar species is *P. cuscutatum*, a native of Japan, and the tender shoots that grow up through the ground are considered a delicacy by the Japanese, hence the name Japanese Asparagus sometimes given to them. It will grow in any soil and any position, but to derive full pleasure from its graceful stems, smothered in summer with clusters of white flowers, it must not be too much shaded. Isolated by itself in clumps, or planted by the waterside, as in St. James's park, the nut-brown stems standing out clearly in the winter months, it has a distinct and fascinating beauty. A variety of it named *compactum* is dwarfier, and the leaves more wrinkled than in the parent form.—F. P.

Plantain Lilies (*Funkias*).—These are delightful Japanese plants, allied to the Lily, and of value for the broad, healthy leafage, in some species accompanied by flowers of great beauty. The most suitable for our purpose is *F. ovata*, which has wide, deeply-coloured leaves, remarkably handsome by reason not only of their rich abundance, but shining, pleasant colour. A very favourite way of growing it is in a tub, and here, even in the dark alley, absolutely fatal to flowers in general, it will increase year by year, growing in beauty as it advances in age. The flowers are individually small, but in the aggregate have a charming beauty, the lilac enduring being at once distinct and pretty. This *Funkia* will endure hardship, and if variety is desired, there is a variegated-leaved form, just as hardy and vigorous as the parent. If increase of stock is required, it is very easy to divide the roots by careful separation.—F. P.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in *GARDENING* free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of *GARDENING*, 37, Southampton-street, Covent-garden, London. Letters on business should be sent to the Publisher. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as *GARDENING* has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be omitted, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, ants, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in *GARDENING* should mention the number in which they appeared.

5211.—**Roof for a wire arch.**—Is the Rose W. A. Richardson suitable for a wire arch?—A. O. M.

5212.—**Whitlavia grandiflora.**—I should like to know if *Whitlavia grandiflora* will make a nice pot-plant?—Puzzled.

5213.—**Andromeda floribunda.**—I would like to know how *Andromeda floribunda* is best propagated?—Miss Brown, Hendon.

5214.—**Humea elegans.**—I have some *Humea elegans* seedlings, about 1 inch high, in a pan now. How shall I treat them?—CONSTANT READER.

5215.—**Tea Roses.**—Will someone kindly tell me the names of six good Tea Roses that will thrive well near the sea, and best time of planting?—ANNON.

5216.—**Grafting a Holly.**—I wish to know if a Variegated Holly can be grafted on to a Green one? At what season should it be grafted?—Miss Brown, Hendon.

5217.—**Rose Charles Lefebvre.**—Will someone kindly tell me if the H.P. Rose Charles Lefebvre is one which can be depended upon for free blooming, also if it is hardy?—ANNON.

5218.—**Glaudiol for show.**—Will someone kindly tell me the most effective way of showing *Glaudiol*-spikes, say, for about 45 varieties? I want to make a stand at my garden.—GAMMEL.

5219.—**Yew from cuttings.**—I should feel much obliged if someone would kindly tell me the common Yew could be grown well from cuttings?—ATULONX, Co. Kildare, Ireland.

5220.—**Plants in a small garden.**—I should be glad to know if the Japanese Maple, Chinese Garden Rose, and *Spiraea Thunbergia* are suited for a small garden?—A. G. M.

5221.—**Dateles, &c., on a lawn.**—Will someone kindly tell me how to free a small lawn from Dateles and other weeds? Are any of the weed-killers sold for the purpose useful?—J. F. G.

5222.—**Pears and Plums.**—Will someone kindly oblige me with the names of the best six Pears and Plums (classer) for succession, and also a good baking Pear?—CONSTANT READER, St. Neots.

5223.—**Planting a branch of a Mulberry tree.**—I have a branch of a Mulberry tree blown down. Is it of any use to plant it? Will cuttings of it grow, and when and how should they be planted?—Miss Grant, Highgate.

5224.—**Allanthurus glandulosa, &c.**—I have purchased plants of *Allanthurus glandulosa* and *Allanthurus manschuricus*. Will someone kindly tell me when the stems should be cut over, as it is recommended to do so annually?—W. H.

5225.—**Destroying mealy-bug.**—Will someone kindly tell me the best way to get rid of mealy-bug on a *Taxodium*? What would be the best dressing to use? Would it be advisable to cut the plant back and let it start afresh?—J. H.

5226.—**Tea Roses in pots.**—I should be pleased if someone would kindly name twelve dwarf Tea Roses, (see flowers), to grow in pots in a cold greenhouse, district, 8 miles north of Manchester? Would it be best to buy them in pots or otherwise?—H. S.

5227.—**Propagating Chrysanthemum.**—How are these varieties to be propagated which do not send up suckers? For instance, I have a plant of *Eldon* Molyneux, which has just gone out of bloom and has no uprising shoot from the plant nor sign of one.—T. D. L.

5228.—**Cutting back Hydrangea.**—It is sometimes recommended, I believe, to cut back plants of *Hydrangea*. I have bought some specimens of *H. paniculata grandiflora*. When should they be cut over, and how near to the ground? Should it, hortense be treated in the same way?—W. R.

5229.—**Hot-bed.**—Having lately taken to use Peat-Moss-litter in the stable instead of straw, please inform me how I can make a hot-bed for a frame? My gardeners say it cannot be done without straw. I have plenty of loam. Would these, mixed with the Moss-fitter from the stable, generate heat?—W. R. H.

5230.—**An old neglected garden.**—Advice wanted for heavy clay soil. What vegetables, flowers, and shrubs are best planted in an old neglected garden with large trees surrounding it? A gardener kept. I want especially advice on planting shrubs under shady trees, and all up gaps?—STONHAM.

5231.—**Anemone roots and worms.**—I and my quantity of small white worms are attacking my

Anemone roots. Could anyone kindly say what they are and suggest a remedy? I would wish to try salt, but am ignorant of the quantity required per yard, and would be grateful for information on the subject?—ATULONX, Co. Kildare, Ireland.

5232.—**Gold fish.**—Will anyone kindly tell me what is the best food for these fish in a conservatory? My basin holds about 10 gallons of water, and the fountain is constantly running to keep the water fresh. I have a variety of fish some worms cut up and coarse animal matter but four have died and are misshapen by swelling in the middle.—N. Y. Z.

5233.—**Herbaceous Calceolarias, &c.**—I have a number of herbaceous Calceolarias in 1-inch pots, and all the hours have turned a variegated colour; and I have also some plants of *Phloxia chinensis* the same, the leaves go white and then die. What is the cause? I have some Chinese Primulas and *Cimicifuga* doing well in the same kind of soil.—Pizzako.

5234.—**Carnation Souvenir de la Malmalson.**—I had a lot of *Souvenir de la Malmalson* Carnations last summer, but most of the blooms were affected with a kind of damp on the outer petals. I cannot account for it, as my house is an airy one, and I am sure I did not keep the plants too wet at the roots. I fed them with some patent-manure. I wonder if that would cause it?—Bourton.

5235.—**Tuberose Begonias.**—I have just procured one dozen Double Tuberose Begonias. The names of them are: *Althildora*, *Sultan*, *Marquis* of *Stafford*, *Mons. E. Fongol*, *Lorna Doone*, *Diamond*, *Mons. Oberis*, *Maurette*, *Virginalis*, *Toison d'Or*, *Mme. Arroul*, *Mme. Comesse*. I should like to know if the above are good varieties, and the colour of the flowers? Should I pot them now, or wait until spring?—HONATA.

5236.—**Propagating pit.**—I have a brick pit in my cold greenhouse, 2 feet 9 inches by 2 feet 6 inches. There is a frame with light over it. I wish to turn this into a propagator. I should be very much obliged to B. C. H., C. T. Y. or any other person, if they will give me instructions how to fit it up with oil-lamp, hot-water pan, and all fittings to make it work successfully. I wish to strike cuttings and to raise seeds in it in the spring.—PROFANATOR.

5237.—**A span-roofed greenhouse.**—I have a span-roofed greenhouse, about 7 yards long, 16 feet wide, and about 8 feet or 9 feet high. Will anyone kindly furnish me with a list of Chrysanthemums, of varied colours and kinds, that would make a good display next winter? How many plants should I grow in the house? Perhaps someone would be good enough to state the colours and the class to which each belongs. Of course, I do not purpose going in for the very high-priced ones.—C. M.

5238.—**Cutting down greenhouse plants.**—In my greenhouse I have a number of plants which need cutting down, including *Fuchsia*, *Geraniums*, *Begonias*, *Heliotropium*, *Abutilum*, &c. When is the best time to do this so that I may be able to strike a lot of cuttings from the year's wood? I have about a 15-gallon water-trough round a globe, which I wish to chain round a tree. Will it stand up to the weight? If so, when and how? What kind of soil will it require, and should it be repotted every year?—C. M.

5239.—**Hoya carnea.**—In a greenhouse I have recently purchased there is a *Hoya carnea*, probably four or five years old. It is planted in an inconvenient place, and I am thinking of moving it and planting it in a box over two 4-inch leading pipes and training it along the roof. Is this treatment advisable, and if I note it during the next two or three weeks is it likely to bloom well in the spring or summer? What kind of soil should it be planted in, and what kind of drainage is necessary? Should it be put down, and how? Some of the shoots may be 5 feet to 10 feet long.—C. M.

5240.—**Propagating Chrysanthemum.**—Will "E. M." or someone else kindly state what is the best course to take when suckers do not grow up from the base of the plants so that they may raise fresh plants for another year? I have about nearly all my cuttings struck, with the exception of those from which I am unable to procure any. I have cut down the plants to within 4 inches of the base, and put new soil on the top; but none appear to grow as yet at present. Will it be of any use taking some of the side slips to propagate from, or will it be waste of time, as I have been informed they make plants but they do not flower?—ANNON'S ENQUIRY.

5241.—**"Bush" Chrysanthemum.**—Will "E. M." kindly give me the names of six coloured and three white Chrysanthemums for growing on the bush system, but only allowing the crown-bud on each branch to bloom? I want them to be Japanese. I have the following: *Source d'Or*, *Mons. Bernard*, *Enter the Great*, *roseum spectans*, *Madison's Bush*, *William Robinson*, *Val d'Adore*, and *Botanica*, *Fair*. These last two are done very well with me in 7-inch pots, so I should be glad if "E. M." would say which four would do in the same sized pots? I should like as much variety of colour as possible, and not too tall-growing sorts, and all to bloom about the same time.—H. H. WALKER.

5242.—**Lily of the Valley.**—I have four pots of German plumps of these, which I have plunged in Cocoanut-fibre in a little frame in a store; there are hot-water pipes underneath the frame for bottom-heat. I maintain a temperature in the house of from 55 degs. to 60 degs. at night, with a rise of 5 degs. to 10 degs. in the day. I covered the tops of the crowns with Moss, which I kept a moist by using water from a syringe. After the Lilies had made about 2 inches of growth I covered the Moss, and placed an empty flower-pot over the crowns for about a week, which brought the flower-spikes up; but I can see no signs of there being any leaves. How is this, and how should I proceed in future, as I have six more pots to force?—Lily.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of new plants or flowers and good fruits and vegetables for drawing. The drawings made will be engraved in the best manner and will appear in due course in *GARDENING*. (Illustrated.)

NEW PHOTOGRAPHIC COMPETITION FOR 1893.

LIST OF AWARDS.

Class I.—FLOWERING PLANTS: The Prize is awarded to Mr. S. W. Fitcherbert, Lansdowne House, Cockington, Torquay, for a series of excellent photographs of many beautiful garden scenes.

Class II.—BEST GARDEN FRUITS: No sufficiently good photographs were sent in to justify awarding the Prize offered. In the extra Prize List below will be found some photographs that have been chosen.

Class III.—BEST VEGETABLES: The Prize is awarded to Mr. Norman Blake, Belford. This is the best collection of photographs of vegetables that has been sent in for any of our Competitions.

Class IV.—AUTUMN FLOWERS AND LEAVES: The Prize is awarded to Mrs. Martin, Bournebrook Hall, Birmingham, for photographs of prettily arranged autumn flowers and leaves.

EXTRA PRIZES.

Miss Armstrong, 5, Clifton-terrace, Monkstown, Dublin. Silver epergne arranged with White Nicotiana; a hanging basket of Passion-flowers and fruit; and a basket of Double Geraniums and Heliotrope.

Lady Eleanor Stopford, Courtown, Gorey, Ireland. Belladonna Lilies; African Tuberosa; and Potato "Imperator."

Mr. F. M. Ramell, 34, High-street, West-end, Sittingbourne. Hociety in a vase; and a bouquet of Water Lilies and Grasses.

The Countess of Antrim, Glencarrig Castle, Co. Antrim, Ireland. Arch of Escallonia; and border of Poppies.

Mrs. Marion Porter, Bloomfield Lake, Sandown, I. of Wight. Grape "Blackland Sweet-water," and Apple "Emperor Alexander."

Miss Alice Worsley, Rolney Lodge, Clifton, Bristol. Pear "Easter Beurré," and Pear "Beurré d'Arenberg."

Miss Ethel Fitz-Roy, Forest Farm, Balcombe, Haywards-leath, Sussex. A Lily Garden; and Nymphaea deudanta.

Mr. E. B. Barrowes, Moreton House, Buckingham. White Sweet Sultan; and White Moccasin-flower.

Mr. H. Keens, 24, Herbert-road, Lewisham. A Giant Gourd; and Great-top Stone Turnip.

Mr. I. Goody, Belchamp, St. Paul, Clere, Suffolk. A Musk Melon; and Japanese Cucumber.

Miss Rawson, Millhouse, Halifax. A basket of Peas.

Mr. Cecil Shaw, 14, College-square, E. Belfast, Ireland. Chrysanthemum "Victorian Murel."

Mr. T. Wight, Trysall Green, Seisdon, Wolverhampton. Cottage-porch, covered with creepers.

Mr. George Capes, Yew Bank, Caistor, Lincolnshire. Border of Chrysanthemum Minor, Desgrange.

Mr. Leonard M. Powell, Bayford Grange, Hertford. Group of Asters and Pyrethrum uliginosum.

Miss Mabel Gaisford, The Grove, Dunboyne, Ireland. Vegetable Marrow "Large White."

NAMES OF PLANTS AND FRUITS.

Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the EDITOR of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C.

Names of plants.—Mrs. Cameron.—The Sedum is Sedum Ewersi; other plant with spotted leaf is Farligium grande.—J. T.—Fern Pteris argyrea.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

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by 12 ft., 170 ft. by 12 ft., 173 ft. by 12 ft., 176 ft. by 12 ft., 179 ft. by 12 ft., 182 ft. by 12 ft., 185 ft. by 12 ft., 188 ft. by 12 ft., 191 ft. by 12 ft., 194 ft. by 12 ft., 197 ft. by 12 ft., 200 ft. by 12 ft., 203 ft. by 12 ft., 206 ft. by 12 ft., 209 ft. by 12 ft., 212 ft. by 12 ft., 215 ft. by 12 ft., 218 ft. by 12 ft., 221 ft. by 12 ft., 224 ft. by 12 ft., 227 ft. by 12 ft., 230 ft. by 12 ft., 233 ft. by 12 ft., 236 ft. by 12 ft., 239 ft. by 12 ft., 242 ft. by 12 ft., 245 ft. by 12 ft., 248 ft. by 12 ft., 251 ft. by 12 ft., 254 ft. by 12 ft., 257 ft. by 12 ft., 260 ft. by 12 ft., 263 ft. by 12 ft., 266 ft. by 12 ft., 269 ft. by 12 ft., 272 ft. by 12 ft., 275 ft. by 12 ft., 278 ft. by 12 ft., 281 ft. by 12 ft., 284 ft. by 12 ft., 287 ft. by 12 ft., 290 ft. by 12 ft., 293 ft. by 12 ft., 296 ft. by 12 ft., 299 ft. by 12 ft., 302 ft. by 12 ft., 305 ft. by 12 ft., 308 ft. by 12 ft., 311 ft. by 12 ft., 314 ft. by 12 ft., 317 ft. by 12 ft., 320 ft. by 12 ft., 323 ft. by 12 ft., 326 ft. by 12 ft., 329 ft. by 12 ft., 332 ft. by 12 ft., 335 ft. by 12 ft., 338 ft. by 12 ft., 341 ft. by 12 ft., 344 ft. by 12 ft., 347 ft. by 12 ft., 350 ft. by 12 ft., 353 ft. by 12 ft., 356 ft. by 12 ft., 359 ft. by 12 ft., 362 ft. by 12 ft., 365 ft. by 12 ft., 368 ft. by 12 ft., 371 ft. by 12 ft., 374 ft. by 12 ft., 377 ft. by 12 ft., 380 ft. by 12 ft., 383 ft. by 12 ft., 386 ft. by 12 ft., 389 ft. by 12 ft., 392 ft. by 12 ft., 395 ft. by 12 ft., 398 ft. by 12 ft., 401 ft. by 12 ft., 404 ft. by 12 ft., 407 ft. by 12 ft., 410 ft. by 12 ft., 413 ft. by 12 ft., 416 ft. by 12 ft., 419 ft. by 12 ft., 422 ft. by 12 ft., 425 ft. by 12 ft., 428 ft. by 12 ft., 431 ft. by 12 ft., 434 ft. by 12 ft., 437 ft. by 12 ft., 440 ft. by 12 ft., 443 ft. by 12 ft., 446 ft. by 12 ft., 449 ft. by 12 ft., 452 ft. by 12 ft., 455 ft. by 12 ft., 458 ft. by 12 ft., 461 ft. by 12 ft., 464 ft. by 12 ft., 467 ft. by 12 ft., 470 ft. by 12 ft., 473 ft. by 12 ft., 476 ft. by 12 ft., 479 ft. by 12 ft., 482 ft. by 12 ft., 485 ft. by 12 ft., 488 ft. by 12 ft., 491 ft. by 12 ft., 494 ft. by 12 ft., 497 ft. by 12 ft., 500 ft. by 12 ft., 503 ft. by 12 ft., 506 ft. by 12 ft., 509 ft. by 12 ft., 512 ft. by 12 ft., 515 ft. by 12 ft., 518 ft. by 12 ft., 521 ft. by 12 ft., 524 ft. by 12 ft., 527 ft. by 12 ft., 530 ft. by 12 ft., 533 ft. by 12 ft., 536 ft. by 12 ft., 539 ft. by 12 ft., 542 ft. by 12 ft., 545 ft. by 12 ft., 548 ft. by 12 ft., 551 ft. by 12 ft., 554 ft. by 12 ft., 557 ft. by 12 ft., 560 ft. by 12 ft., 563 ft. by 12 ft., 566 ft. by 12 ft., 569 ft. by 12 ft., 572 ft. by 12 ft., 575 ft. by 12 ft., 578 ft. by 12 ft., 581 ft. by 12 ft., 584 ft. by 12 ft., 587 ft. by 12 ft., 590 ft. by 12 ft., 593 ft. by 12 ft., 596 ft. by 12 ft., 599 ft. by 12 ft., 602 ft. by 12 ft., 605 ft. by 12 ft., 608 ft. by 12 ft., 611 ft. by 12 ft., 614 ft. by 12 ft., 617 ft. by 12 ft., 620 ft. by 12 ft., 623 ft. by 12 ft., 626 ft. by 12 ft., 629 ft. by 12 ft., 632 ft. by 12 ft., 635 ft. by 12 ft., 638 ft. by 12 ft., 641 ft. by 12 ft., 644 ft. by 12 ft., 647 ft. by 12 ft., 650 ft. by 12 ft., 653 ft. by 12 ft., 656 ft. by 12 ft., 659 ft. by 12 ft., 662 ft. by 12 ft., 665 ft. by 12 ft., 668 ft. by 12 ft., 671 ft. by 12 ft., 674 ft. by 12 ft., 677 ft. by 12 ft., 680 ft. by 12 ft., 683 ft. by 12 ft., 686 ft. by 12 ft., 689 ft. by 12 ft., 692 ft. by 12 ft., 695 ft. by 12 ft., 698 ft. by 12 ft., 701 ft. by 12 ft., 704 ft. by 12 ft., 707 ft. by 12 ft., 710 ft. by 12 ft., 713 ft. by 12 ft., 716 ft. by 12 ft., 719 ft. by 12 ft., 722 ft. by 12 ft., 725 ft. by 12 ft., 728 ft. by 12 ft., 731 ft. by 12 ft., 734 ft. by 12 ft., 737 ft. by 12 ft., 740 ft. by 12 ft., 743 ft. by 12 ft., 746 ft. by 12 ft., 749 ft. by 12 ft., 752 ft. by 12 ft., 755 ft. by 12 ft., 758 ft. by 12 ft., 761 ft. by 12 ft., 764 ft. by 12 ft., 767 ft. by 12 ft., 770 ft. by 12 ft., 773 ft. by 12 ft., 776 ft. by 12 ft., 779 ft. by 12 ft., 782 ft. by 12 ft., 785 ft. by 12 ft., 788 ft. by 12 ft., 791 ft. by 12 ft., 794 ft. by 12 ft., 797 ft. by 12 ft., 800 ft. by 12 ft., 803 ft. by 12 ft., 806 ft. by 12 ft., 809 ft. by 12 ft., 812 ft. by 12 ft., 815 ft. by 12 ft., 818 ft. by 12 ft., 821 ft. by 12 ft., 824 ft. by 12 ft., 827 ft. by 12 ft., 830 ft. by 12 ft., 833 ft. by 12 ft., 836 ft. by 12 ft., 839 ft. by 12 ft., 842 ft. by 12 ft., 845 ft. by 12 ft., 848 ft. by 12 ft., 851 ft. by 12 ft., 854 ft. by 12 ft., 857 ft. by 12 ft., 860 ft. by 12 ft., 863 ft. by 12 ft., 866 ft. by 12 ft., 869 ft. by 12 ft., 872 ft. by 12 ft., 875 ft. by 12 ft., 878 ft. by 12 ft., 881 ft. by 12 ft., 884 ft. by 12 ft., 887 ft. by 12 ft., 890 ft. by 12 ft., 893 ft. by 12 ft., 896 ft. by 12 ft., 899 ft. by 12 ft., 902 ft. by 12 ft., 905 ft. by 12 ft., 908 ft. by 12 ft., 911 ft. by 12 ft., 914 ft. by 12 ft., 917 ft. by 12 ft., 920 ft. by 12 ft., 923 ft. by 12 ft., 926 ft. by 12 ft., 929 ft. by 12 ft., 932 ft. by 12 ft., 935 ft. by 12 ft., 938 ft. by 12 ft., 941 ft. by 12 ft., 944 ft. by 12 ft., 947 ft. by 12 ft., 950 ft. by 12 ft., 953 ft. by 12 ft., 956 ft. by 12 ft., 959 ft. by 12 ft., 962 ft. by 12 ft., 965 ft. by 12 ft., 968 ft. by 12 ft., 971 ft. by 12 ft., 974 ft. by 12 ft., 977 ft. by 12 ft., 980 ft. by 12 ft., 983 ft. by 12 ft., 986 ft. by 12 ft., 989 ft. by 12 ft., 992 ft. by 12 ft., 995 ft. by 12 ft., 998 ft. by 12 ft., 1001 ft. by 12 ft., 1004 ft. by 12 ft., 1007 ft. by 12 ft., 1010 ft. by 12 ft., 1013 ft. by 12 ft., 1016 ft. by 12 ft., 1019 ft. by 12 ft., 1022 ft. by 12 ft., 1025 ft. by 12 ft., 1028 ft. by 12 ft., 1031 ft. by 12 ft., 1034 ft. by 12 ft., 1037 ft. by 12 ft., 1040 ft. by 12 ft., 1043 ft. by 12 ft., 1046 ft. by 12 ft., 1049 ft. by 12 ft., 1052 ft. by 12 ft., 1055 ft. by 12 ft., 1058 ft. by 12 ft., 1061 ft. by 12 ft., 1064 ft. by 12 ft., 1067 ft. by 12 ft., 1070 ft. by 12 ft., 1073 ft. by 12 ft., 1076 ft. by 12 ft., 1079 ft. by 12 ft., 1082 ft. by 12 ft., 1085 ft. by 12 ft., 1088 ft. by 12 ft., 1091 ft. by 12 ft., 1094 ft. by 12 ft., 1097 ft. by 12 ft., 1100 ft. by 12 ft., 1103 ft. by 12 ft., 1106 ft. by 12 ft., 1109 ft. by 12 ft., 1112 ft. by 12 ft., 1115 ft. by 12 ft., 1118 ft. by 12 ft., 1121 ft. by 12 ft., 1124 ft. by 12 ft., 1127 ft. by 12 ft., 1130 ft. by 12 ft., 1133 ft. by 12 ft., 1136 ft. by 12 ft., 1139 ft. by 12 ft., 1142 ft. by 12 ft., 1145 ft. by 12 ft., 1148 ft. by 12 ft., 1151 ft. by 12 ft., 1154 ft. by 12 ft., 1157 ft. by 12 ft., 1160 ft. by 12 ft., 1163 ft. by 12 ft., 1166 ft. by 12 ft., 1169 ft. by 12 ft., 1172 ft. by 12 ft., 1175 ft. by 12 ft., 1178 ft. by 12 ft., 1181 ft. by 12 ft., 1184 ft. by 12 ft., 1187 ft. by 12 ft., 1190 ft. by 12 ft., 1193 ft. by 12 ft., 1196 ft. by 12 ft., 1199 ft. by 12 ft., 1202 ft. by 12 ft., 1205 ft. by 12 ft., 1208 ft. by 12 ft., 1211 ft. by 12 ft., 1214 ft. by 12 ft., 1217 ft. by 12 ft., 1220 ft. by 12 ft., 1223 ft. by 12 ft., 1226 ft. by 12 ft., 1229 ft. by 12 ft., 1232 ft. by 12 ft., 1235 ft. by 12 ft., 1238 ft. by 12 ft., 1241 ft. by 12 ft., 1244 ft. by 12 ft., 1247 ft. by 12 ft., 1250 ft. by 12 ft., 1253 ft. by 12 ft., 1256 ft. by 12 ft., 1259 ft. by 12 ft., 1262 ft. by 12 ft., 1265 ft. by 12 ft., 1268 ft. by 12 ft., 1271 ft. by 12 ft., 1274 ft. by 12 ft., 1277 ft. by 12 ft., 1280 ft. by 12 ft., 1283 ft. by 12 ft., 1286 ft. by 12 ft., 1289 ft. by 12 ft., 1292 ft. by 12 ft., 1295 ft. by 12 ft., 1298 ft. by 12 ft., 1301 ft. by 12 ft., 1304 ft. by 12 ft., 1307 ft. by 12 ft., 1310 ft. by 12 ft., 1313 ft. by 12 ft., 1316 ft. by 12 ft., 1319 ft. by 12 ft., 1322 ft. by 12 ft., 1325 ft. by 12 ft., 1328 ft. by 12 ft., 1331 ft. by 12 ft., 1334 ft. by 12 ft., 1337 ft. by 12 ft., 1340 ft. by 12 ft., 1343 ft. by 12 ft., 1346 ft. by 12 ft., 1349 ft. by 12 ft., 1352 ft. by 12 ft., 1355 ft. by 12 ft., 1358 ft. by 12 ft., 1361 ft. by 12 ft., 1364 ft. by 12 ft., 1367 ft. by 12 ft., 1370 ft. by 12 ft., 1373 ft. by 12 ft., 1376 ft. by 12 ft., 1379 ft. by 12 ft., 1382 ft. by 12 ft., 1385 ft. by 12 ft., 1388 ft. by 12 ft., 1391 ft. by 12 ft., 1394 ft. by 12 ft., 1397 ft. by 12 ft., 1400 ft. by 12 ft., 1403 ft. by 12 ft., 1406 ft. by 12 ft., 1409 ft. by 12 ft., 1412 ft. by 12 ft., 1415 ft. by 12 ft., 1418 ft. by 12 ft., 1421 ft. by 12 ft., 1424 ft. by 12 ft., 1427 ft. by 12 ft., 1430 ft. by 12 ft., 1433 ft. by 12 ft., 1436 ft. by 12 ft., 1439 ft. by 12 ft., 1442 ft. by 12 ft., 1445 ft. by 12 ft., 1448 ft. by 12 ft., 1451 ft. by 12 ft., 1454 ft. by 12 ft., 1457 ft. by 12 ft., 1460 ft. by 12 ft., 1463 ft. by 12 ft., 1466 ft. by 12 ft., 1469 ft. by 12 ft., 1472 ft. by 12 ft., 1475 ft. by 12 ft., 1478 ft. by 12 ft., 1481 ft. by 12 ft., 1484 ft. by 12 ft., 1487 ft. by 12 ft., 1490 ft. by 12 ft., 1493 ft. by 12 ft., 1496 ft. by 12 ft., 1499 ft. by 12 ft., 1502 ft. by 12 ft., 1505 ft. by 12 ft., 1508 ft. by 12 ft., 1511 ft. by 12 ft., 1514 ft. by 12 ft., 1517 ft. by 12 ft., 1520 ft. by 12 ft., 1523 ft. by 12 ft., 1526 ft. by 12 ft., 1529 ft. by 12 ft., 1532 ft. by 12 ft., 1535 ft. by 12 ft., 1538 ft. by 12 ft., 1541 ft. by 12 ft., 1544 ft. by 12 ft., 1547 ft. by 12 ft., 1550 ft. by 12 ft., 1553 ft. by 12 ft., 1556 ft. by 12 ft., 1559 ft. by 12 ft., 1562 ft. by 12 ft., 1565 ft. by 12 ft., 1568 ft. by 12 ft., 1571 ft. by 12 ft., 1574 ft. by 12 ft., 1577 ft. by 12 ft., 1580 ft. by 12 ft., 1583 ft. by 12 ft., 1586 ft. by 12 ft., 1589 ft. by 12 ft., 1592 ft. by 12 ft., 1595 ft. by 12 ft., 1598 ft. by 12 ft., 1601 ft. by 12 ft., 1604 ft. by 12 ft., 1607 ft. by 12 ft., 1610 ft. by 12 ft., 1613 ft. by 12 ft., 1616 ft. by 12 ft., 1619 ft. by 12 ft., 1622 ft. by 12 ft., 1625 ft. by 12 ft., 1628 ft. by 12 ft., 1631 ft. by 12 ft., 1634 ft. by 12 ft., 1637 ft. by 12 ft., 1640 ft. by 12 ft., 1643 ft. by 12 ft., 1646 ft. by 12 ft., 1649 ft. by 12 ft., 1652 ft. by 12 ft., 1655 ft. by 12 ft., 1658 ft. by 12 ft., 1661 ft. by 12 ft., 1664 ft. by 12 ft., 1667 ft. by 12 ft., 1670 ft. by 12 ft., 1673 ft. by 12 ft., 1676 ft. by 12 ft., 1679 ft. by 12 ft., 1682 ft. by 12 ft., 1685 ft. by 12 ft., 1688 ft. by 12 ft., 1691 ft. by 12 ft., 1694 ft. by 12 ft., 1697 ft. by 12 ft., 1700 ft. by 12 ft., 1703 ft. by 12 ft., 1706 ft. by 12 ft., 1709 ft. by 12 ft., 1712 ft. by 12 ft., 1715 ft. by 12 ft., 1718 ft. by 12 ft., 1721 ft. by 12 ft., 1724 ft. by 12 ft., 1727 ft. by 12 ft., 1730 ft. by 12 ft., 1733 ft. by 12 ft., 1736 ft. by 12 ft., 1739 ft. by 12 ft., 1742 ft. by 12 ft., 1745 ft. by 12 ft., 1748 ft. by 12 ft., 1751 ft. by 12 ft., 1754 ft. by 12 ft., 1757 ft. by 12 ft., 1760 ft. by 12 ft., 1763 ft. by 12 ft., 1766 ft. by 12 ft., 1769 ft. by 12 ft., 1772 ft. by 12 ft., 1775 ft. by 12 ft., 1778 ft. by 12 ft., 1781 ft. by 12 ft., 1784 ft. by 12 ft., 1787 ft. by 12 ft., 1790 ft. by 12 ft., 1793 ft. by 12 ft., 1796 ft. by 12 ft., 1799 ft. by 12 ft., 1802 ft. by 12 ft., 1805 ft. by 12 ft., 1808 ft. by 12 ft., 1811 ft. by 12 ft., 1814 ft. by 12 ft., 1817 ft. by 12 ft., 1820 ft. by 12 ft., 1823 ft. by 12 ft., 1826 ft. by 12 ft., 1829 ft. by 12 ft., 1832 ft. by 12 ft., 1835 ft. by 12 ft., 1838 ft. by 12 ft., 1841 ft. by 12 ft., 1844 ft. by 12 ft., 1847 ft. by 12 ft., 1850 ft. by 12 ft., 1853 ft. by 12 ft., 1856 ft. by 12 ft., 1859 ft. by 12 ft., 1862 ft. by 12 ft., 1865 ft. by 12 ft., 1868 ft. by 12 ft., 1871 ft. by 12 ft., 1874 ft. by 12 ft., 1877 ft. by 12 ft., 1880 ft. by 12 ft., 1883 ft. by 12 ft., 1886 ft. by 12 ft., 1889 ft. by 12 ft., 1892 ft. by 12 ft., 1895 ft. by 12 ft., 1898 ft. by 12 ft., 1901 ft. by 12 ft., 1904 ft. by 12 ft., 1907 ft. by 12 ft., 1910 ft. by 12 ft., 1913 ft. by 12 ft., 1916 ft. by 12 ft., 1919 ft. by 12 ft., 1922 ft. by 12 ft., 1925 ft. by 12 ft., 1928 ft. by 12 ft., 1931 ft. by 12 ft., 1934 ft. by 12 ft., 1937 ft. by 12 ft., 1940 ft. by 12 ft., 1943 ft. by 12 ft., 1946 ft. by 12 ft., 1949 ft. by 12 ft., 1952 ft. by 12 ft., 1955 ft. by 12 ft., 1958 ft. by 12 ft., 1961 ft. by 12 ft., 1964 ft. by 12 ft., 1967 ft. by 12 ft., 1970 ft. by 12 ft., 1973 ft. by 12 ft., 1976 ft. by 12 ft., 1979 ft. by 12 ft., 1982 ft. by 12 ft., 1985 ft. by 12 ft., 1988 ft. by 12 ft., 1991 ft. by 12 ft., 1994 ft. by 12 ft., 1997 ft. by 12 ft., 2000 ft. by 12 ft., 2003 ft. by 12 ft., 2006 ft. by 12 ft., 2009 ft. by 12 ft., 2012 ft. by 12 ft., 2015 ft. by 12 ft., 2018 ft. by 12 ft., 2021 ft. by 12 ft., 2024 ft. by 12 ft., 2027 ft. by 12 ft., 2030 ft. by 12 ft., 2033 ft. by 12 ft., 2036 ft. by 12 ft., 2039 ft. by 12 ft., 2042 ft. by 12 ft., 2045 ft. by 12 ft., 2048 ft. by 12 ft., 2051 ft. by 12 ft., 2054 ft. by 12 ft., 2057 ft. by 12 ft., 2060 ft. by 12 ft., 2063 ft. by 12 ft., 2066 ft. by 12 ft., 2069 ft. by 12 ft., 2072 ft. by 12 ft., 2075 ft. by 12 ft., 2078 ft. by 12 ft., 2081 ft. by 12 ft., 2084 ft. by 12 ft., 2087 ft. by 12 ft., 2090 ft. by 12 ft., 2093 ft. by 12 ft., 2096 ft. by 12 ft., 2099 ft. by 12 ft., 2102 ft. by 12 ft., 2105 ft. by 12 ft., 2108 ft. by 12 ft., 2111 ft. by 12 ft., 2114 ft. by 12 ft., 2117 ft. by 12 ft., 2120 ft. by 12 ft., 2123 ft. by 12 ft., 2126 ft. by 12 ft., 2129 ft. by 12 ft., 2132 ft. by 12 ft., 2135 ft. by 12 ft., 2138 ft. by 12 ft., 2141 ft. by 12 ft., 2144 ft. by 12 ft., 2147 ft. by 12 ft., 2150 ft. by 12 ft., 2153 ft. by 12 ft., 2156 ft. by 12 ft., 2159 ft. by 12 ft., 2162 ft. by 12 ft., 2165 ft. by 12 ft.,

BEAUTIFUL COLOURED PLATES OF FLOWERS

FOR SCREENS & SCRAP BOOKS.

From drawings by the best flower painters, finely reproduced in colour. Per dozen, 2s. 6d.; per twenty-five, 5s.; per fifty, 9s.; per hundred, 15s.; post free. Well assorted or customers' own selection. Set of 400 (each different), £3, post free. P.O.O. to T. SPANSWICK. Specimen Plate, post free, 3d.

Abutilon vexillarium
Aleocarpus decorticans
Aerides Lawrencei
Aethionema pulchellum and *Anemone vernalis*
Aponia hexuosa and *Kennedyia coccinea*
Allamanda grandiflora
 do. *violacea*
 do. *Williami*
Alistomeria, hybrid
Amaryllis Belladonna
 do. *Nestor* and *splendens*
Amorpha canadenensis
Andromeda fastigiata and *Veronica pin-gullifolia*
Androsace lanuginosa
Anemone alpina sulphurea
 do. *Fannini*
 do. *japonica*, pink and white
 do. *Japanese*
 do. *memorosa* (forms of
 do. *Pulsatilla*, the *Pasque Flower*)
 do. *ranunculoides* and *A. thalic-troides*
Angraecum caudatum
Antigonon breviflorus
Anthurium atroroseum
 do. *Bothschildianum* and *vars.*
Antirrhinum, group of
Aquilegia Stuarti
Arctostaphylos
Arenaria balearica
Aristolochia elegans
Aster acris
 do. *Amollus* and *A. linariifolius*
 do. *Stracheyi*
Aurearia Golden Queen
Auricula, groups of
Azalea Deutscha Perle
 do. *Heine*
Beaulordia splendens
Beaumontia grandiflora
Begonia Haageana
 do. *John Heal*
Begonias, two tuberous
Bemisia fragifera
Berberis vulgaris asperius
Besleria elegans
Bignonia speciosa
 do. *Tweediana*
Bilbergia vittata
Blandfordia Cunninghami splendens
Bomarea conlorta
 do. *iroutee*
 do. *oculata*
Boronia heterophylla
Bougainvillea spectabilis
Boutanilla, President Cleveland and B. Mrs. R. Green
Brier, Austrian Coppes
Briars, Scotch
Browellia Jamesoni
Buddleia Colvillei
Burtonia scabra, villosa and *Johnsonia lupulina*
Casulipinia japonica
Ceanothus Veitchi
Cyanthus, hybrid
Cyclocolarias, a new race of
Callicarpa purpurea
Callistemon rigidus
Calochortus flavus
 do. *Kennedyi*
Caltha leptosepala and *Alyssum mon-tanum*
Camellia reticulata
Cancillias, two new Japanese
Campylopus pusille var. *ocposita*
Canna Louisa Thibaut and *Victor Hugo*
Carnation Harmony
 do. *Keiton Rose*
 do. *M. Bergendi* and *Mlle. Rousseil*
 do. *Queen*
 do. *Tres Mrs. A. Hensley*
Carpenteria californica
Casasetum Bungeoides
Castleya Percivaliana
Celaena cretica
Cerola siliquastrum
Cerans Lemairi
Cerinth retorta
Chimonanthus fragrans
Chionodoxa Lucilla var. *gigantea*
Chrysanthemum America and *C. Lady Brooks*

Chrysanthemum Eleine and *Soleil d'Or*
 do. a single
 do. (single) *Jene* and its yellow var.
Chrysanthemums, Japanese Anemone-
 do. *flowered*
 do. *two hardy*
Cineraria aurita
Cistus crispus
 do. *lornosus*
 do. *ladaniferus* var. *maculatus*
 do. *purpureus*
Clarkia elegans fl.-pt.
Otteniata Stanleyi
Clerodendron Kämpferi
 do. *trichotomum*
Clinanthus Dampieri marginatus
Coburgia trichroma
Cologyne cristata maxima
Convolvulus mauritanicus
Cornus Kousa
Cosmos bipinnatus
Crataegus lanacostifolia
Crinum Powellii
Crocuses, group of autumn
Crossandra undulatifolia
Cyclamen Coum and *C. Atkinsi*
 do. *repandum* and *Rosa alpina*
Cypripedium acule and *C. pubescens*
 do. *Chamberlaini*
 do. *Dominianum*
Cytisus nigricans
Daphne Oenkwa
 do. *Mezereum autumnale* and *Cy-donia japonica Moerlosei*
 do. *Mezereum* var.
Dendrobium Phalaenopsis Schraderia-num
 do. *thyriflorum*
Dianthus alpinus and *Frodium macre-dentum*
 do. *neglectus*
Dictamnus Fraxinella var. *alba*
Dietes Huttoni
Digitalis, spotted variety
Dimorphotheca graminifolia
Diss racouosa
 do. *Veitchii*
Echium calithyrum
Elaeagnis parvifolia
Elaeocarpus cynceus
Emicromon chionantha
Epidendrum macrochilum album
Eremurus Bungei
 do. *robustus*
Erica hyemalis and *E. h. alba*
 do. *propendens*
Erigeron aurantiacus
Erysimum pumilum and *Sedum spatulifolium*
Erythronium Dens-canis
Eucalyptus leucocylon
Eucharis amazonica
Forsythia suspensa
Franciscana calycina grandiflora
Fritillaria aurea
 do. *Melegria* var.
Fuchsia dependens
 do. *triphylia*
Genista tinensis
Gentiana bavarica and *Aquilegia glan-tulosa*
Gerbera Jamesoni
Gemera cardinalis
 do. *longiflora*
Geum miniatum
Gladioli, new hybrid: 1, *La France*; 2, *L'Alsace*; 3, *Masque de Fer*
Gladiolus sulphureus
Gloriosa superba
Gloxinia
Griffithia hysanthina
Habenaria militaris
Heberia rhodopensis and *Campanula turbinata*
Hebrothamnus Newellii
Hamelia arborea
Helenium autumnale pumilum
Heliathemum algarvense
Heurocalis Dumortieri
Heuchera sanguinea

Hibbertia dentata
Hibiscus Hugeli
 do. *Rosa-sinensis fulgens*
 do. *Trionum*
Hunnebania fumarifolia
Hyacinthus aureus
 Hybrid Sweet Briars
Hypericum oblongifolium
 do. *olympicum*
 do. *triflorum*
Illeceum floridanum
Impatiens Hawkeri
Ipomoea Horsfallii
Iris aurea
 do. *hiatricoides*
 do. *hiatricoides*
 do. *ochroleuca* and *I. Monsper*
 do. *palida*
 do. *parviflora*
 do. *pavonia* and *I. pavonia ocrulea*
 do. *variana*
 do. *virginiana*
Ismene Andreana
Ixora Westi
Kempferia rotunda
Kniphofia aloides var. *glaucescens*
 do. *caulescens*
Laila alba
Lathyrus grandiflorus
Leucheneiltha biloba major
Lewisia rediviva and *Micromeria Pipe-*
rellia
Lilium canadense, red and yellow forms
 do. *Henryi*
 do. *japonicum*
 do. *nepalense*
 do. *nepalense* var. *ochroleucum*
 do. *speciosum rubrum*
 do. *superbum*
 do. *Szovitzianum*
 do. *Stunbergianum Alice Wilson* and *Van Houttei*
Limnorchis Humboldtii
Linaria alpina and *Phyteuma bunble*
Linum arboreum
Lonicera sempervirens minor
Luella gratissima
Magnolia conspicua
Malva lateralis
Marica caerulea
Maxillaria Sanderiana
Mittonia spectabilis and var. *Moreliana*
Mimosa lobata
Moutan, new hybrid
Mulinia Clentiana
 do. *occurrens*
Mysostidium nobis
Narcissus Broussonetii
 do. *triandrus* var. *albus* and *N. cyclaminus*
Neulium speciosum
Nemesia strumosa var.
 New Narciss: 1, *Albatross*; 2, *Seagull*;
 3, *Seedling Phœnix's-eye*
Nymphaea Marliacea (Canary Water Lily)
Odontoglossum Harrysnum
 do. *Wattianum*
Olearia insignis
Oncidium Crœsus
 do. *Jonesianum*
 do. *Phalaenopsis*
Oncocyclus irisee: 1, *Gatesi*; 2, *Lorteli*;
 3, *Jupina*
Oreithyllum nutans
 do. *pyramidale*
Orobancha canescens
Oxalis Bowleana
Oxera pulchella
Oxytropis Lambertii and *Acantholimon glumaceum*
Paeonia albiflora Adrian
 do. *decora elatior*, *P. lobata*, *P. anemoniflora*
 do. *Moutan* var. *Reine Elizabeth*
 do. *Venis*
 do. *Whitleyi*
Peony, single white *Moutan*

Panicles (tulted) Duchess of Fife and *Hartree*
 do. *Quaker Maid* and *Jackanapes*
Pansy (tulted) Violetta
Papaver orientale
Paspalum ornatum *Constance Elliott*
 do. *maenosa*
 do. *Watsoniana*
Peulowia hyperika
Phloxopis gloriosa
Phlox Drummondii (some good vars. of)
Phyllocaetus delicatus
Pinguicula grandiflora and *Viola pedata*
Pink Her Majesty
Polygala Chamæboxus purpurea
Primrose College Garden seedling
 do. *Oakwood Blue*
Prinula floribunda
 do. *imperialis*
 do. *minima* and *Epilobium oboer-datum*
 do. *Sieboldii*, white and light var.
Prunus Pissardi
 do. *trilobus*
Ranondia pyrenalis and *Omphalodes Lucilla*
 do. *pyrenaica alba*
Ranunculus Lyalli
Reinwardtia tetragynum
Rhododendron Ceres
 do. *keeweenaw*
 do. *multicolor hybrid*
 do. *nilagiricum*
 do. *racematum*
Rhododendrons, Hybrid Java: 1, *luteo-roseum*; 2, *Primrose*; 3, *Jesuiti-florum carminatum*
Rosa indica var.
Rose Anna Gllivier
 do. *Comtesse de Nadallac*
 do. *Innocente Pirola*
 do. *Jean Perret*
 do. *Lourette Messimy*
 do. *Mme. de Watteville*
 do. *Mme. Nabonnand*
 do. *Marquis de Viveno*
 do. *Marie Van Houtte*
 do. *Mrs. Paul*
Rudbeckia purpurea
Ruellia macrantha
Saccolobium bellinum
Sarracenia, now hybrid
Saxifrage Boydii
 do. *Fortunei*
Scabiosa caucasica
Senecio grandiflora
Senecio macroglossus
Smilacina oleracea
Suowdrops and winter *Aconite*
 do. eight kinds of
Solenum Sesfortianum
Stanhopia ptycoeras
Sternbergia lutea and *S. angustifolia*
Stigmaphyllon ciliatum
Streptocarpus Galpini
 do. *vars* of
Streptocarpus, hybrid
Stenaria pseudo-Camellia
Sweet Peas, Hill, Stanley, Mrs. Eckford, Orange Prince, and *Corothy Tennant*
Tea Rose Corina
Thalictroium anemonifloras and *Saxifraga ocella*
Thunbergia grandiflora
 do. *laurifolia*
Tulted Pansies: 1, *Ravenwood*; 2, *Edina*; 3, *Roths*
Tulted Pansies Sylvia and *Bessie Clark*
Tulipa vitellina
Tulips, old garden
 do. *southern (T. australe)*
Tydea Mme. Heine
Urcolina pendula
Vanda teres
Wahlenbergia pumillorum
 do. *sexicola*
Waldsteinia triloba
Xerophyllum asphodeloides
Zauschneria californica
Zephyr Flower (Zephyranthes Atamases)
Zephyranthes candida
Zygopetalum crinitum

GARDENING ILLUSTRATED.

No. 774.—Vol. XV.

Founded by W. Robinson, Author of "The English Flower Garden."

JANUARY 6, 1894.

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ROSES.

FORCING ROSES.

It is not often that we meet with Roses that are being forced for early blooms growing in the same healthy and pleasing manner as plants that are not started until February. And yet there is little reason for this, provided one commences with properly matured plants and continues to treat them on the right lines. Perhaps there are few plants more disappointing than early forced Roses when fully grown. Partially ripened plants soon push into new growth, but it is almost always of a weak and puny character. Needless to say, it is impossible for such to produce blooms of satisfactory quality. To secure good Roses under the strain of early forcing, it is absolutely necessary to commence with well-matured wood and established plants. When either of these essentials is wanting the results are certain to be disappointing. There is a further essential in forcing Roses successfully; that is, to start them gradually and with as little unnatural excitement as possible. If started in too hasty a manner, the sap in the wood is excited and put into premature activity. This should not be until the roots are able to produce a further supply. If you exhaust the sap in the wood by the production of a new leaf-growth, you must expect a check of greater or less severity according to the state of the roots.

Too much impatience in starting Roses and too high a temperature in the earlier stages are the chief causes of so many partial failures. Nor should one attempt to force weakly plants, as unless they have a good constitution it is hardly possible for them to produce blooms of any merit, especially when under the strain of early forcing. There is also a great deal in making a judicious selection of varieties, always choosing those that are naturally free-flowering. It is also wisest to select kinds that are not too double, as they will expand more freely, and are much less liable to damp in the centre or to produce what are styled gummy buds. Many Roses that are practically useless during the summer, owing to their flying open so rapidly and possessing few petals, make the finest of all Roses for winter blooming. During this time they will not expand too freely, and will retain a close and pleasing shape for a long time. Of all flowers perhaps Roses in winter are the most appreciated, and with a little care and consideration it is by no means difficult to have them. I will not give a selection of suitable varieties, as they are now very numerous; suffice it to say that all free bloomers, of not too double and globular character, are well adapted for early or winter forcing. I have known many batches of good pot-Roses spoil for early forcing by being pruned and then stood in the forcing house at once. A very little thought will show the folly and unadvisedness of this. Summer does not burst upon us in a day. And yet that is practically what such treatment amounts to. All Roses intended for early forcing should be

pruned without delay if not already done. By stamling them in a close pit for a month or six weeks previous to removing them to the forcing house, you get the eyes plump and forward, and the sap about equally in action with the roots. A very little

ARTIFICIAL HEAT is needed during the first month of forcing, letting the temperature increase gradually, and never exceeding 65 degs. to 70 degs. The latter is quite high enough for Roses under the most highly forced conditions. Great care and attention will be necessary in the application of water, and perfect cleanliness must be secured. Drought at the roots, a few insects, or a slight attack of mildew make great havoc among early forced Roses. As the plants retain a fair amount of leafage, liquid-manure is very beneficial and in many cases almost a necessity. Much better results will be secured if Roses are not forced until the days are well turned. Those possessing only a few ornamental greenhouses that are doing duty for numerous collections I would not advise to force Roses at all. Their best plan would be to wait until they come on in a more natural manner, simply affording them the heat and protection accorded to ordinary greenhouse plants.

R.

5211.—*Rose for a wire arch.*—"A. O. M." may safely plant William Alba Richardson upon an arch. It is a strong grower, as a rule, but a plant will sometimes linger about one size for two or three years. When such is the case plant another specimen. I mention this freak of W. A. Richardson because more than one has desecrated it as a climber simply because their own specimen did not happen to do well. For the past five years I have tried to account for this peculiarity, but without the least result so far. Neither soil or stock seem the cause; if they are, it has baffled me to decide in what way. I have left a plant unsheltered and placed another by its side, and although in the same soil and upon the same stock, the second plant has grown away rampantly. I find a similar peculiarity in *Marechal Niel*; and this, with *emker*, are at present imperfectly understood.—P. U.

— This Rose does well as a standard in the West of England, but I do not remember having seen it trained on an arch. In a fairly good climate I should not mind risking it. The growth, however, is rather slender, so that the wind would probably do it more injury than cold. Trained to stakes about 4 feet high in the form of a hedge it does well with me on a sheltered border. The plants are in their own roots, and make splendid growth.—J. C. C.

— W. A. Richardson will do very well on an arch if not exposed to cold winds, as also will *Gloire du Dijon* and most of the *Dijon* Teas. *Cheshunt Hybrid* is a beautiful covering for an arch.—R. H.

5217.—*Rose Charles Lefebvre.*—Yes, this is one of the hardiest and most reliable bloomers we have. In a former query you ask about *Tea* Roses by the sea, so I presume this Rose is intended for the same position. There is a climbing variety of it which will produce a quantity of deep velvety blooms in great contrast to the *Teas* I previously recommended.

It may be of service to name half a dozen good dark velvety-red Roses as a counterfoil to the *Teas* already mentioned in Query 5215: *General Jacqueminot*, *Fisher Holmes*, *Mme. V. Verhier*, *Prince C. de Ruban*, *Dr. Ballion*, and *Duke of Edinburgh*.—P. U.

— Yes, this is a really splendid variety, hardy and vigorous in growth, and remarkably free-flowering, the blossoms being of a rich velvety crimson colour. It is frequently included in the "best dozen" of this class.—H. C. R.

5215.—*Tea Roses.*—A good six varieties for your garden would be *Anna Ollivier*, one of the most beautiful of all *Tea*-centred Roses, the flowers very full, and a rosy shade, touched with flesh, and hard, whilst the plant is vigorous in growth. *Devoniensis* is a very fine flower, creamy-white, large, full, and of beautiful form; it is an old but first-class variety. *Mme. Hoste* is a well-known *Tea* Rose, the flowers of a pale yellow shade, deepening in the centre, and of very fine form; it is in every sense of the word a valuable kind, hardy, a good grower, and blooms very freely. *Mme. Lambert* is one of the most useful of all, a hardy, free, and distinct kind, the flowers varying in colour, usually of a rosy shade. *Marie Van Houtte* is one of the most popular of all *Tea*-scented kinds, the flowers being produced freely, and of a rich canary yellow colour, deepening in the centre, the petals margined with a bright-rose shade. Another old variety is *Souvenir d'un Ami*, raised in 1846, the flowers, as doubtless you well know, being shaded with rose and salmon, large, double, well-shaped, and borne freely, whilst the leafage is extremely fine. Those mentioned are by no means new, but all indispensable in a small collection.—C. T.

— If "Anxious" had been more particular and told us his situation respecting exposure to wind from the sea, his query could have been more definitely answered. I know many gardens in Brighton and Eastbourne where Roses do well, others where they are failures; in fact, it was only courting failure to plant them in such. It does not matter how near the sea your garden is so long as the unbroken winds do not play direct upon the Roses. Very few gardens do face the sea-breeze; but I have seen many attempts to grow climbing Roses upon the exposed fronts of houses. This is utter folly; the sea-breezes are too much for them. But if in a sheltered back garden, then the following six Roses will do very well: *Anna Ollivier*, *Marie Van Houtte*, *Sufrano*, *Dr. Grill*, *Mme. Lambert*, and *Perle des Jardins*. "Anxious" does not state if they are wanted as climbers or not. Six good climbers would be *W. A. Richardson*, *L'Idéal*, *Climbing Perle des Jardins*, *Gloire du Dijon*, *Cheshunt Hybrid*, and *Mme. Bernard*.—P. U.

— *Gloire du Dijon*, *Honore*, *Souvenir d'un Ami*, *Reine Victoria*, *Marie Van Houtte*, and *Mme. Lambert* are all Roses of robust growth that thrive well near the sea. October is probably the best month in which to plant these, certainly if the soil is moderately light and warm, and the position not too exposed or cold.—B. C. U.

5226.—*Tea Roses in pots.*—There are so many good *Tea* Roses suitable for growing in pots that no two people are likely to mention the same varieties. My choice, however, would be *Niphopha Luciole*, *Mme. Falot*, *Marie Van*

Hortto, Grace Darling, Safrano, Perle des Jardins, Letty Coles, Catherine Mermet, The Bride, Mme. Lambert, and Anna Ollivier. You do not say how large your greenhouse is, or the size pots you intend growing them in. My advice to all amateurs, however, is that you continue giving the plants two sizes larger every year until they reach those 12 inches in diameter, even if a less number of plants be grown, as large plants are not only less trouble in watering, but in comparison to small ones a much greater number of flowers are obtained. A strong plant of Niphetus in a 14-inch pot will flower more or less from early spring to late in autumn.—J. C. C.

— You will find it best to purchase plants in pots. These will give you a good crop the first year, which plants potted up from the open would not. I would suggest you purchase them in 6-inch pots, and send the following eighteen names, with permission to the florist to send which he has best plants of: Anna Ollivier, Mme. Lambert, Rubens, Mme. Filent, Niphetos, Jean Ducher, Edith Gifford, Catherine Mermet, The Bride, Sunset, Perle des Jardins, Mme. de Watteville, La Boule d'Or, Françoise Krüger, Dulce Bella, Comtesse de Nakhillic, and Mme. Hoste.—F. U.

GARDEN WORK.*

Conservatory.

With the lengthening days will come the need for more water at the roots of plants in flower or in active growth. As the days lengthen the soil will strengthen, is an old familiar adage that will perhaps be exemplified this season, and this will render necessary more frequent watering to keep up the requisite temperature and moisture for the plants. A watchful eye is kept, will stimulate the production of insect pests, and all this tends to prove that a gardener has very little leisure for anything beyond his daily round of duties. Perhaps it is as well that it should be so. Men or women with duties to perform are always better and busier in harness. Forced flowers are coming freely now, and will include lilies in considerable variety. Fuchsias are charming now, and are so easily grown that everybody should have them. They are grown in a light window, the first lot, now in flower, were potted in August, and they have been growing in a house where fires were only used occasionally, when the nights were cold and damp. It is very important to keep them near the glass, as light is essential for the formation of a sturdy habit. Begonias should now be placed in the flowering pots. Good loam, freely enriched, will do them well. The pots must be well drained, and the soil removed in freely. Firm potting induces a sturdy habit, and increases the number of flower buds. Strong shoots should have the terminal bud rubbed out. All plants, when they begin to grow freely, are the better for a little pinching to secure a bushy habit. Tall lanky shoots need staking, and tend to nakedness of the base. Young Fuchsias that were struck last August, and which have been kept in a cold winter, will be ready now for 6-inch pots, in which they will bloom early, or if larger later-flowering plants are required, they may have a shift early in March into 7-inch pots, still keeping them in a house where fire-heat is regularly being given the syringe freely over them on the sunny days. As soon as the berries fall from Solanums, shrubby luck, and put in cuttings if more stock is required, or sow seeds. *Leontodon gracilis*, when well grown, is a very effective plant, and is so very easily managed, strong plants lifted from the border and placed in pots that will just hold the roots will flower well the same season, though it would hardly be advisable to force hard, or the flowers will be small. For early forcing the plants should be established in pots, and this refers to many other subjects. But *Diodes* should be lifted from the beds with balls untraced, and force well without any preparatory treatment, and the same may be said of *Azaleas*; the roots form a dense ball, and moving does not give any check. Do not overwater Primulas. A collection of the Double Primulas will be effective now. They are not difficult to grow if they receive cold-frame treatment all summer.

Unheated Greenhouse.

Even when furnished with hardy, or nearly hardy, plants alone, there may be flowers. A collection of *Heliochloa* (*Christmas Roses*) will be interesting now in most people. The *Christmas Rose* is known only by its common representative, *Heliochloa*, but improvements have been effected in this family, as in most others which have come under the hands of the hybridist. There are several varieties of *Heliochloa* with larger flowers, and which are better adapted for pot or intermediate than the type, and besides there are *Heliochloa* with red flowers, or, at least, in which red predominates. The owner of the unheated house might do worse than get a collection of *Heliochloa*. In the summer they could be placed outside to make room for the *Tuberous Begonias*, *Lilies*, *Fuchsias*, &c. There are several varieties of *Laurustinus*, which flower freely in winter in tubs or large pots, and the Naked-flowered *Jasminum* would be bright and useful.

Stove.

The principal work here just at present is to thoroughly clear out weedy-logs and other insects. If this is not done now, by and-by the work will so increase it will be impossible to do it. The only way to make sure work is to hunt them up, not only on the plants, but in every crack and crevice about the house, and when all the plants have

been cleared with the sponge and whatever insecticide is used, go over the paint and walls, and if the house contains a plugging bed, clear that out also, and refill with fresh lichen, or leaves, or sawdust, or whatever is used. The deciduous and other creeping plants which are partially dried off during winter may soon be pruned back in ripe wood, and as soon as there are signs of growth ripen. No store is properly furnished without an *Allantaria* or two, and they flower best when trained near the glass. They will do very well in a large pot, or in a basket on a side-shelf over the hot water pipes, or other moist chamber, or in the *Lipidifera*, *Clerodendrons*, *Banquo*, *Villars*, and *Stephanandra*, all of which will need somewhat similar treatment; but they will not be much exceeded at night for the present. The house will still be gay with *Dreidias*, *Chorodanis*, *Begonias*, *Euphorbias*, *Primulas*, &c.

Ferns under Glass.

Sow spores now in pans or boxes, and place in a dark corner, where the sun will not reach them. It will be an advantage if the pans or boxes are covered with squares of glass. If kept constantly moist, without much watering, the good seeds will grow. In a house devoted to ferns, the seedlings spring up everywhere, in coal-ash beds or freely as anywhere, showing that if the seeds are good, and they fall on a moist medium, they are sure to grow. In another part of the same house the ground has been covered till the clay is reached, and here, on a thin stratum of ashes, the *Ferns* come up as vigorously as anywhere. One of the most useful *Ferns* for rooms and general furnishing is *Pteris* (*Pteris*), and this also comes freely from spores. It will be well after the first soil for potting. Good loam should form the main staple.

Bedding Plants.

Any plants required to furnish a large stock of cuttings should be placed in heat. But the majority of bedding *Pelargoniums* will do in a cool-house for the present, well ventilated, and not watered too freely. *Geraniums* will go for a long time without watering when the temperature is low. *Cactaceae* are well rooted now in the cold frames, and may have the lights opened in every day.

Cold Frames.

Damp is all we have to contend against up to the present, and this may be met by increasing the ventilation. Hardy plants, such as *Thompson Stocks*, *Double Wall-flowers*, *Polemoniums*, *Antirrhinums*, and other things, may have the lights opened wide every day, when not freezing or raining. *Violets*, also, must be freely ventilated.

Window Gardening.

Asparagus plumosus is a very unamiable room-plant, and is not difficult to keep in good condition, and when the fronds lose colour, if the whole plant is cut down to the ground a new beautiful growth will spring up immediately. Very few plants now will require watering more than twice a week, unless they are placed in a warm position, but the foliage must be kept free from dust.

Outdoor Garden.

The early-planted *Campanulas* will now be well established, and frost, if it comes, will not disturb them injuriously. Those planted late often get killed by frost before they are well established, and the drying effect of the frost does much harm. During frosty weather the late-planted things will be much benefited by a mulch of old garden soil. Up to the present the wind has not had much effect, but there is now a strong wind, and water which has been the planting operations on heavy soil rather sticky work, in planting any thing we wish to succeed, it is a good plan to have a heap of dry stuff in the compost-heap, so as to have a shovel or two to shake in among the fibres, and then gently shake the tree or shrub to settle it before treating it. When the soil is very wet, the bedding may be left till the surface has dried somewhat. *Wesley* or *Mosses* walks should be formed, and then made firm again. This is the cheapest and best way of renewing the surface of worn or heavy walks; if convenient, a little fresh gravel may be placed on the surface at the finish, grading may be done now. It is very important that positions for *Roses* should be drained if the soil is heavy and damp. Among evergreen hedges *Yew* is both cheap to plant and easily kept in order. It is not suited for a boundary fence, because it is poisonous to sheep and cattle, but for an ornamental fence or division line in a garden it is very suitable, and may be used in a great variety of ways. It is a kind of shelter for *Yew* hedges, cold winds never enter, and *Roses* and other flowers may be seen in the highest state of perfection. A garden without shelter is often in a dilapidated condition.

Fruit Garden.

Cut all late *Grapes* and bottle them in the *Wine*-room, which should be kept at an even temperature of about 45 degrees. Give a look round once or twice a week to remove decaying berries, if there are any, but *Grapes* will not rot so much in the *Wine*-room, if the conditions are suitable, as they will hanging on. The *Vines*, especially if plants in pots are kept in the house. When the *Grapes* are all gathered in the *Vines* should be pruned, the base bark removed, and the rods washed with a strong lime-water. Every gardener has his favourite mixture; those who have used any of the following Compound, 1 lb. of lime, 1 lb. of kail, 1 lb. of sulphur, and 1 lb. of wood-ash. The last of these may either be painted, or the paint should be cleaned with soap and water, and the wall surface white-washed, and when the inside borders are laid-dressed the house will be ready for work again. This annual cleansing is very necessary in the case of all forcing-houses, and it is a great mistake to begrudge a little paint. Garden assistants, if they are worth their salt, can, if need be, do the inside painting. The trees in the orchard-house should be pruned and dressed now, as the lady will very soon be on the move. Such a statement which has been said and written against pulled trees, the demand for them is increasing, and I hope may continue to increase, for it is a most interesting way of growing them, especially for amateurs, who do not require to have large quantities of fruit at once. Keep a steady temperature of 60 degs. to 65 degs. in the early *Peach*-house. Eggs in pots will do with 50 degs. to 55 degs. *Vines* breaking into leaf should have 55 degs. to 60 degs. This refers to slight temperatures only. The rise in the early *Wine*-room, from 45 degs. to 55 degs. At this early season very little air is required, and the sun has but little power.

Vegetable Garden.

If Peas and Beans have not been sown, the first favourable opportunity should be taken to get in a few rows of the early *border*. *French* and *English* roots also for lead before sowing, and neither mice or rats will touch them. Those who have no special favourite sowing *Peas* may try the *American Wonder* and *William I*. The *Edward* than *Beau* is very good for the small garden, and the *Early Long-pod* is better than the *Mazagan*. Where there is plenty of glass, *Peas* and *Beans* may be started in pots or in some other way. *Beans* transplant very well out of boxes. *Saw* *Chimneys* in plant in *Wine*-houses. Get in the digging, trenching, and sowing as soon as land becomes vacant. Get all early seed *Potatoes* sown by placing them in a light position. Those intended for pre-planting should be placed in heat. Make up hot-beds to meet all forcing needs, and they will be heavy now. *Mushroom*-beds also should be made up in succession. As soon as a bed is exhausted, out with it, and fill the place with fresh material. Happy the gardener who has a good *run* *Mushroom*-house, as so much can be done with it. *More* *Seakale* and *Rhubarb* should be worked out in succession. *Thin* *roots* also for sowing. *Late* *Rubies* will soon launch in the genial temperature of the *Mushroom*-house. *Mint* and *Turrago* will soon be wanted in quantity now. See that stock enough is at hand for forcing. Sow a few seeds of *Sweet* *Marjoram* and *Basil*; it will come in profit. Have a good deal of *Parsley* where it can be easily sheltered. This has been a good sowing for early *broccoli*. Those plants not so protected had better be lifted, a few of the bottom leaves removed, and then laid in somewhere where the weather can be given. E. HOBBS.

Work in the Town Garden.

It is very seldom indeed that we get such a mild Christmas as the one just past, and, considering the high price of fuel of all kinds, it is extremely fortunate that it is so. But though the weather is more like that of spring than winter, this is not altogether favourable to plant the most delicate, and the most delicate plants are now as trying to make things as well, and in order to prevent serious damage from this cause it is necessary to use a good deal of fire-heat—almost as much, indeed, as if the weather were moderately frosty. In unheated houses and gardens the damp is extremely trying, and in order to keep *Geraniums* and others of this class in health it is necessary to keep the pipes almost always warm, opening the radiators twice at the same time on mild days, and closing a little on air on the cold days. In the night is warm and still. Under present circumstances, also, it is advisable to clean and set away the stock of bedding and other plants frequently, removing all dead or decaying leaves, and in the case of *Geraniums* even the stipules also ought to be taken off as soon as they turn red, as they are very apt to collect damp and mildew, and not infrequently cause the loss of a branch, if neglected. Such plants as *Chinese Primulas*, *Campanulas*, and *Cactaceae*, however, enjoy the damp mild atmosphere, and are now growing nicely. There will now be a little more daylight again, and this reminds us that a fresh routine of work for the coming season will have to be begun. The effect of the lengthening days is not so quickly visible on indoor plants in large towns as in open country places, though a good deal depends upon the position of the house, and also upon the temperature. Except in the very unheated suburbs, and where there is plenty of heat available, I do not, however, advise any retreating, but, to be more before, at the end of the month, a few of several kinds will have to be sown very shortly. Such plants be placed in heat to supply cuttings, and so forth. January is the best month in which to sow *Tomato*-seed for an early summer crop, though except in very open and dry places the end of the month will be time enough, and in sunny places the middle of February is better than attempting to start too soon. Most of the *Tuberous Begonias* should also be got in from the middle to the end of the month, as the plants will do well, and will be ready for use in the month. *Hollyhocks*, *Delphiniums*, *Lupines*, and *Thyris* sown now will also flower this season. B. C. R.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary from January 6th to January 13th.

Finished laying *Peaches* in hot-house. Stirred up and watered the borders where dry. Cut all the *Crocus* *Chuan* and *Lady* *Down's* *Grapes* for the *Wine*-room. Pruned the *Vines*. Should give all the air possible for some time. Sowed *Tomato* seeds of different kinds. I often wish there were a better variety of *Tomatoes*. This friend says you must grow this, and another bothers one about another. A 1 soil, and then we have our own favourites, which, having been found reliable, cannot be discarded; and so in the end we had ourselves in possession of more kinds than we care to have. The old bed, when well selected, comes very nearly smooth, and it is a very free sower. Then, again, a good true strain of *Carters* *Market* *Favourite*, such as *Jack* *last* year, wants a good variety to beat it. *More* *French* *Primulas* tried when it was first introduced, and still retain it, and perfection, of course, need to be grown for the main crop, though it is not suitable for early work. Sowed a few *Melons*, *as* they are still putting in cuttings, as they come ready, of *Chrysanthemums*. The worst feature of the *Chrysanthemum* craze is the necessity to grow so many varieties, as so not to leave out those which are really good, and at the same time to introduce a few new varieties. When a person's mind becomes muddled in the matter of flowers, he is sure to be overstocked with varieties. There are certain bad times for striking cuttings of the different varieties, and that best time is not the same everywhere; and this has to be found out, or an referring, of course, only to exhibition sorts, and to find this out means that several plants of each sort must be grown, and the date when the cuttings are taken marked on the label. All this is of interest only to oneself or to others under like circumstances. Put in a lot of *Violets*, some *Russet* *lily* *varieties* and others of the *lily* *varieties*. The best is for planting *Wesley* *or* *Mosses* *walks* in the present season, and it will be strong enough to go out in June, and will fill a long row in the *Wine*-room. Moved a lot of plants

* In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than those indicated, with very few exceptions.

from which cuttings are required into heat to warm them up; also moved to forcing-house a lot of Spruces and other things but cut flowers and to come on for the conservatory. Planted Potatoes on hot-bed, the variety being Sharpe's Victor. Filled a warm pit with Strawberries in pots to bring them on, as I want ripe fruit by the end of March. Sowed early Peas and Beans on south border; shall also sow some in pots to make sure of a crop. Shifted on young Fuchsias that were struck last August, and which have been growing on slugs. Made a new plantation of Raspberries, chiefly Superlatre, Home's, and other large sorts. This is a day of big things, and everybody likes big Raspberries. Planted a trellis with some of the best of the Lancashire Gooseberries. Those who neglect these lose a good deal. All they want is to be trained thinly on a trellis in the sunshine, so as to get them well ripened. Trained Heaths and other specimens of hard-wooded plants. I do not believe in filling the pots with sticks, but supports are necessary for specimen plants when they get large. Azaleas also have been gone through, and what tying is required has been done. Looked through the Fern-house; rearranged, picked dead and discoloured fronds. Some plants which have been used a good deal for cutting have been cut down.

5220. — **Hot-bed.** — The gardener is quite right; the Peat-Moss-litter from the stable is not

FRUIT.

STANDARD PEAR-TREES.

One of our very best Pears is Marie Louise, and so good a variety ought also to be included in quite limited collections of either bush, pyramid, or standard trees. It is the freely or naturally grown pyramids and standards that give the best results, and I need hardly add that the latter should be on the Pear-stock. On poor soils the growth is scarcely vigorous enough, a fairly strong loam best suiting the variety. Unless this can be given, the trees are apt to become stunted and flower far too freely to be productive, there being such a thing as having too much blossom. The season before last the trees generally flowered most abundantly, but the flowers being stronger than usual there were fewer failures to set owing to any inherent weakness, though severe frosts worked sad havoc among the trees. In the case of the tree

to the top of a good dressing of solid manure. There are various other manurial dressings that might be substituted, but I have most faith in manure obtained from mixed farmyards. Not unfrequently the best-flavoured fruit, if somewhat scrubby in appearance compared with that produced by wall-trees, is obtained from pyramids, standards, and espalier-trained trees, but this would be less often the case if the former were kept better attended to at the roots. Marie Louise keeps better than most varieties after it is ripe, the natural season extending from the middle of October to the second or third week in November. This can be improved upon or lengthened considerably by gathering the fruit at different or say at fortnightly intervals, ripening that first picked in heat, and keeping some on the trees as long as they will hang. Marie Louise d'Uccle, which also does well as a standard, is quite distinct from the variety under notice, and, though more productive, is inferior in point of quality. Other good kinds for standards are the following: Hesse, Williams' Bon Chrétien, Josephine de Malines, Swan's Egg, and Pitmaston Duchess. W.

5221. — **Pears and Plums.** — Six in not very large selection of Pears, but the following are all good, commencing with the well-known Williams' Bon Chrétien in August, Beurré d'Amanlis in September, Louise Bonne de Jersey, October; Marie Louise, October and November; Winter Nelis, November and December; Doyenné du Comice, December. The Plums are, for the most part, in season in September, but you may commence with Rivers' Early Prolific, the fruit of medium size, deep purple in colour, and juicy; Orleans, rich purple, very richly flavoured, August; Coe's Golden Drop, a well-known and delicious variety, end of September; Pond's Seedling, and the Green Gage-flavoured Reine Claude de Bay, in September; also the popular and free-bearing Victoria, which, when fully ripe, is excellent for the dessert. You cannot do better as regards baking Pears than select Uveitale's St. Germain, a very large and solid fruit, useful only for baking. — C. T.

— Six good Pears for dessert for succession: Clapp's Favourite, Williams' Bon Chrétien, Beurré Superfin, Louise Bonne de Jersey, Marie Louise, Pitmaston Duchess, and Doyenné du Comice. Six good Plums: Green Gage, Coe's Golden Drop, Kirke's, Jefferson, Transparent Gage, and Belgian Russet. The Victoria, if not overcropped, is good enough for dessert. Catilae is a good stewing or baking Pear, and most of the dessert Pears will bake well when green. The Swan's Egg Pear, which makes a large orchard-tree, is a good baker. — R. H.

— The following Pears and Plums will be found to give a succession of fruit, ripening in the order here given: Jargonelle, August; Williams' Bon Chrétien, September; Louise Bonne de Jersey, September; Brown Beurré, October; Marie Louise, November; Doyenné du Comice, December. Plums: Green Gage, August; Early Prolific, August; Jefferson, September; Kirke's, September; Purple Gage, September; Coe's Golden Drop, October. — S. P.

5222. — **Planting a Mulberry-branch.** — It depends on the size of the branch whether it will grow or not. If it is not more than 6 inches in circumference there is no doubt but what it will grow. I once knew a branch of the Mulberry to grow that was used as a stake to support another kind of tree, and it developed into a fine, handsome specimen. If such large branches will send out roots it is pretty safe to conclude that small ones would do so if they are taken off at once and 9 inches of the stem buried in the ground. — J. C. C.

— Trunk-lice cut from old Mulberry-trees, planted firmly in the ground in the shade of a wall, will form roots if well watered and mulched, and this is the only way of getting young trees that will bear early. Mulberry-trees are obtained from cuttings and layers. — R. H.

5223. — **Destroying mealy-bug.** — Cut the Tacsonia back to firm wood, and dress it with a strong solution of Gishurst Compound, 3 oz. to the gallon. It is not difficult to kill mealy-bug on the Tacsonia now, but other things in the house are probably infested, including the woodwork, the ericaceae in the walls, and even the soil in the border, and unless the work of cleansing the collection is thoroughly done there will be plenty of bugs next year. — R. H.



Standard Pear-tree "Marie Louise" in flower.

suitable alone for making a hot-bed, as it gives a great heat for a few days and as suddenly declines. Mixed with leaves at the rate of one third of Moss to the remainder of tree-leaves it will do very well, but if I had plenty of the later I should not use the Moss at all, as the leaves alone will give a longer and steadier heat without it. You may, however, use the Moss-litter from the stable as a manure for all garden crops, and the sooner it is dug in the ground the more good it will do. — J. C. C.

— Yes, a mixture of equal parts of Moss-litter-manure and tree-leaves will make a very good hot-bed. — H. C. R.

— Moss-litter-manure and leaves will make good hot-beds. They are more difficult to construct because neither the leaves or manure bind together well, but with patience it can be done. Cuttings of evergreens are often plentiful at this season, and a few of these may be worked on round the outside of the surface-roots, returning the soil on

figured there are no apparent signs of want of vigour, yet the blossom was most abundantly produced, the tree when photographed presenting a most beautiful sight, and that, too, in spite of the comparative smallness of the flowers of this variety. When standard Pear-trees are in the happy condition shown in the engraving something is necessary in most cases to be done towards sustaining their vigour. Where good loam is available, it pays well to add one half hundredweight of half-inch bones in every braked up cartload of it, and to place this in a trench well within reach of the roots. Especially are such additions to the border necessary where it is desirable that the trees should continue to grow strongly without their productive powers being impaired. The next best thing to do is to dig the surface-roots, returning the soil on

FERNS.

TWO GOOD HARDY FERNS.

SCALE FERN (*Ceterach officinarum*).—In reply to "Fern-lover" and "Filius," this is a distinct and beautiful little native Fern (see Fig. 1) admirably adapted for rock or alpine gardens, as it thrives best when planted between the chinks of rocks or stone walls. It is a Fern that, unlike most other varieties, dislikes a confined, damp position; hence it can be planted in the most exposed places with good effect, and, with a little careful attention to its simple requirements at the outset, with almost certain success. The chinks and crevices wherein it is proposed to plant this *Ceterach* should be filled with a mixture of sandy peat and pounded limestone. It might be associated in such positions with some of the little flowering Sedums, and various other plants for walls and stony places.

MALDEN-HAIR SPLEENWORT (*Asplenium Trichomanes*) (Fig. 2).—A perfect little gem is this evergreen among British Ferns, and one that should be grown in every collection. It grows naturally in the crevices of walls or rocks, I have never met with its two or three varieties wild, including incisum and cristatum, although I notice them sometimes offered for sale; this little species is well suited for Warlian-cases on account of its size, and, contrary to the usual rule, shade is not essential, although preferable. B.

The Bird's-nest Ferns.—These are markedly distinct Ferns, and when well grown are splendid ornaments either in the fernery or when seen amongst other plants. There are two distinct varieties of this Fern, one having comparatively narrow fronds with the growth more spreading. The other has much broader fronds and is of a more erect growth. The first-named is entituled as *Thamnopteris undulata*, the other as *T. nidus*, both being also found under the genus *Asplenium*, to which in all probability they belong, one being a form of the other, but markedly distinct. The last-named (*T. nidus*) is by far the better kind to grow. It is whilst still in a small state quite an ornamental plant with its broad, massive-looking fronds. I have grown it as an exhibition plant in from the small state until the fronds measured quite 6 feet in length. It does best in the warm-house, a stove being much safer in the winter than a greenhouse. Shade is also needed, whilst slugs and snails, as well as black thrips, must be very closely watched for and destroyed. A peaty soil and moderate potting suit it best. The soil should be rough (as used for Orchids), with some charcoal and broken crocks when it is not full of fibre; a liberal supply of water is also needed. —F.

Anthurium Andreanum.—This *Anthurium* has never attained the degree of popularity that was anticipated at the time of its introduction, but, for all this, it must by no means be passed over, for it is a wonderfully showy flower, and one that will remain bright and fresh for months. While its flowering season can scarcely be described as limited to any particular period of the year, where a few plants are grown some of them can be depended upon to flower during the winter, and just now I have several examples in bloom which will remain fresh till spring. The loose, somewhat scaunt habit no doubt detracts from the popularity of this *Anthurium*, but with regard to this feature, individuals vary greatly, some being far more tufted in growth than others; still, the finest flowers are as a rule borne by the stoutest growing forms. It ripens seed freely, from which young plants can be readily raised, while it has also been employed by the hybridist, and, in conjunction with the white-flowered *A. ornatum*, has given us a race of pinkish-throated ferns, which, though pretty and useful for their free-flowering qualities, are not nearly so showy as a good form of the typical *A. Andreanum*. One of the best coloured flowers of this *Anthurium* that has ever come under my eye was shown last spring from the grand collection

that Sir Trevor Lawrence has gathered together. It was awarded a first-class certificate by the Royal Horticultural Society under the name of *A. Andreanum sanguineum*. One of the first hybrids in which *A. Andreanum* played a part was *A. ferriereense*, which still remains among the best of its class. —P.

THE AURICULA—SHOW AND ALPINE.

This pretty spring flower begins to get very interesting soon after the new year comes in, especially if a good collection of the best show



Fig. 1.—Scale Fern (*Ceterach officinarum*).

varieties is grown, for if the plants are grown in a heated house the leaves slowly unfold soon after Christmas. There is considerable difference even amongst the best cultivators as to the treatment of these choice alpine plants. I was once talking to a good grower and successful exhibitor of Auriculas, their winter treatment being the theme, and my friend seemed quite surprised when I stated that I liked to expose the plants to a good hard frost. His treatment was the very reverse of this, for he hurried his plants into a heated house as soon as frosts set in, and did not like them to be exposed to a lower degree of cold than about 35 degs. Fahr., this overcareful treatment making them quite greenhouse plants. I find when the plants have been exposed in cold frames to a rigorous winter we have very little of the woolly aphid, seems rather tender, and cannot endure being frozen for a week or two at a time. I fancy if Auricula fanciers were to return to the old-fashioned way of frame culture entirely, never allowing the plants to go into a greenhouse, we might have less bother with this troublesome parasite. The great advantage of a heated house for Auriculas consists in the facility with which the plants can be protected when they are in blossom. The flowers of these garden



Fig. 2.—Malden-hair Spleenwort (*Asplenium Trichomanes*).

favourites are more fragile than one would suppose. They suffer sadly from damp, and frost is ruinous to them. From an ordinary garden frame frost may be kept out by duffle mats, but these encourage rather than defy damp; whereas in a heated house or pit the blossoms are not in the least injured either by the damp or the cold. About the middle of January, or at least not later than the first week in February, I place my plants in a pit heated sufficiently to keep the frost out, but I do not mind the temperature falling so low as the freezing point, as this I find does no injury to the plants

delicate flowers when the air is dry, for I am careful to see that the atmosphere is dry when a low temperature is expected. At this season of the year the plants require very little water indeed, and it is usually applied to them early in the day, so that the paths, &c., may be dried up before the house is shut up in the afternoon. Artificial heat should be applied very carefully and only to keep out frost. An important part of the cultivation of the show Auriculas need to be the surface-dressing, which was always considered an essential part of their culture, and no good grower would venture to leave this out of the year's work. I regularly surface-dressed my plants for years, and generally found that few or no roots were found in it at the time the flower-trusses were fully developed. I examined plants in other gardens near Manchester where very much richer dressings were used, and found the results the same; so it was gradually dropped, and the plants seemed to do just as well without it.

GREEN-FLY is the most troublesome parasite we have to deal with amongst Auriculas; it is more partial to the green-leaved varieties, not caring to attack those with the furina densely powdered upon the leaves, although they are not exempt from it. The fine grey-edged variety *George Lightbody* is most frequently attacked, but *Prince of Greens*, *Ber. F. D. Horner*, and other green-edged varieties are much injured unless the pest is destroyed on its first appearance. It is well to fumigate the plants in the house as soon as they have made a little growth, and this will destroy any that may yet be invisible to the naked eye. The trusses and leaves are apt to become drawn up in a heated house, therefore see that plenty of air is admitted, but care should be taken to shelter the plants from frost winds from whatever direction they may blow. The trusses must also be shaded from bright sunshine, which would soon curl up the petals, especially those of the selfs, which, curiously enough, are much more susceptible of injury from sunshine or cold winds than those of the grey, green, or white-edged varieties. In the early spring months the seedlings just pushing out of the ground demand attention. It is better to place the seed-pans in the house with the flowering varieties, as they come up more freely and grow more rapidly, but they do not make very much growth at first, and require some patience to prick out the tiny seedlings which may have just made their first leaves after the two seed leaves. A dozen of these minute plants may be put into a 3-inch pot. The soil must not be suffered to become dry, or the plants may disappear. The offsets put in last autumn will also require to be potted off; some of them are so small that they must be planted in 2½-inch pots, and it is well to repot the whole of them in February whether they be large or small, as they start away more freely in the new soil, which should be a little lighter than that used for the flowering plants.

ALPINE AURICULAS of the choicer named varieties do better in pots and treated very much the same as the show varieties, but the flowers are altogether less liable to injury from cold winds or frost. They are nearly all well adapted for planting in the rock garden or for the front lines in herbaceous borders; they like well-drained, good soils, moist in summer. The potting-soil for Auriculas is not quite so important as some fanciers would lead people to believe. I have tried them in the most approved composts of the old growers, and find that they were much in error in the use they made of rich, stimulating manure. The plants, if overfed, are generally short-lived. They thrive admirably in the same soil I use for *Penstemon*, *Pelargonium*, and plants of that kind, such as four parts of good loam, one of decayed cow or horse-mannure, one of leaf-mould, and a sufficient allowance of coarse white sand. The flower-pots should be well drained, and the plants may be repotted once a year during the summer months. Great attention should be paid to watering, taking care to keep free from drought. J 1

OUTDOOR PLANTS.

LEONOTIS LEONURUS.

This rare and curious plant is a native of South Africa, and although the precise date of its introduction to this country cannot be given, it is probably nearly two centuries ago; at any rate it was grown by Philip Miller in the Botanic Garden at Chelsea in 1712. Although when well grown it is a very handsome plant, it does not appear to have ever been much cultivated, and until Mr. Lynch re-introduced it from Ghent about twelve years ago and flowered it in the Botanic Garden at Cambridge, it was apparently entirely lost sight of in this country. Plants of it are now flowering in the large temperate-house at Kew. Until cultivation here it is of herbaceous growth, although very old plants would doubtless become woody at the base. The flowers are produced in whorls from the axils of the leaves towards, but not quite up to, the tips of the previous summer's shoots; they are very brightly coloured, being orange-scarlet. The Leonitis, like the Dead Nettle of our waysides, is a member of the Labiate family, and the flowers have the same two-lipped structure. In this instance they are given a singular appearance by being covered on the inside with short hairs. Each flower is about 2 inches in length, and about forty or fifty of them are borne in a single whorl. The mere growing of this plant is the simplest matter, but, in the neighbourhood of London at least, it is not always so easy to flower. Coming into bloom at a time when fogs become frequent, and being very susceptible to them, it is not unusual for a plant instead of being in flower to be denuded both of leaves and blossoms at this season. But in districts with a clearer atmosphere this danger has not to be feared, and there is no reason why this species should not become as generally known as its beauty and interest entitle it to be. Plants may be grown on from cuttings each year, or they may be kept for two years, but after that period the stock should be renewed. Plunged in a slight bottom-heat, cuttings taken in spring root as readily as Verbenas. They should be potted on as required until they fill 10-inch pots. It is quite necessary to place them out-of-doors in a sunny position during the summer if sturdy-flowering growth is to be obtained, housing them in a cool, light greenhouse towards the middle of September. Strong shoots 3 feet or 4 feet long should be sought after, these producing larger and more numerous flowers. There is, indeed, a danger, in endeavouring to secure bushy, well furnished plants, of stopping the shoots too often, and thus rendering the growth so weak as not to be able to flower at all. Like many of the sun-loving plants from the Cape of Good Hope and Australia, this species succeeds to perfection in the French Riviera, and it is also said to be quite a popular garden plant in Turkish gardens near Constantinople. Both the generic and specific names refer to the conspicuous hairiness of the flowers. B.

Christmas and cover the beds with litter to protect from frost, or else start the bulbs in small pots in cold frames in November, and plant in March or April. I may add that a rather dry position, such as at the foot of a wall where no stagnant water can accumulate, is the best place for this sort of plants, or else the beds should be raised well up above the ordinary level, so that it is impossible for water to lay on or about the bulbs. "F. S." should try a few both ways and compare the results.—J. Groom, *Guport*.

HERBACEOUS PEONIES.

In reply to several queries, to grow these well they must have plenty of room for the spread of their foliage, and a great depth of soil for their roots. A good, moist loam, particularly when enriched by the addition of cow-manure, is the soil best suited to them. They can be planted at almost any time from October to April; but, generally speaking, the best time is in the spring, just as the crocus are sowing, when a division may be made by cutting them through, as they increase in the same way as Dahlias, the Peonies being very like them in the formation of tubers, which some of them produce in quantity, and grow to quite a large size. The most suitable situation for these herbaceous Peonies is at the back of flower-borders, or in front of shrubs, as there they get shelter



White Peony (*P. alba*).

and show off to the greatest advantage. They also look well as isolated plants on lawns; but wherever placed they must have support by being staked and tied, as their big blooms are a great weight, and bear the shoots down to the ground. Instead of cutting these off when the plants have finished flowering, as is often done, they should be left to ripen and die away naturally, the foliage being necessary, as long as it remains green, to feed and finish the crocus. The common *P. officinalis* is the typical European kind, and from it the hybrid sorts have chiefly been obtained, and *albiflora*, *sinensis*, and *edulis*, Chinese species, the forms of the latter being particularly fine. The European varieties flower early and the Chinese late, so that the flowering season is considerably prolonged. Amongst the hybrid varieties there is an extensive variety of colours—white, pale-yellow, salmon-flesh-coloured, and a numerous intermediate series between pale-pink and the brightest purple. Among the oldest varieties the following are the most remarkable—viz., *grandiflora* (double white), *Louis Van Houtte*, *papaveriflora*, *rubra triumphans*, *sulphurea plurissima*, *rosea superba*, *Zoi*, *Mdme. Calot*, *Christa Patria*, and *Prince Troubetskoj*. Some of the most beautiful among those of a more recent date are: *Archimede atrorubra*, *Virgo Maria*, *Mdme. Lemoine*, *L'Espérance*, *Très belle de l'Exposition de Lille*, *Jeanne d'Arc*, *Madame Verdier*, and *Mdme. Lemoine*. Amongst others most worthy of notice may be named *Mdme. Lebon*, *Mdme. Lemoine*, *Henri*

Laurent, *Mdme. Jules Elic*, *multicolor*, *Stanley*, *Charlemagne*, *Mdme. Geissler*, *Bernard Palissy*, and *Van Dyck*. Besides these, there are many other commoner varieties—for example, the varieties of *P. officinalis* (such as *anemoneflora*, *rubra*, and *Sabina*), and the varieties of *P. albiflora*, *perogrina*, *paradoxa*, and especially the small-growing *tennifida*, with feathery foliage and large red blossoms. There is also a large double variety of this species; these, as well as the varieties, are perfectly hardy and need no care in winter to preserve them from frost, however severe. Y.

521.—**Daisies on a lawn.**—The surest way of getting rid of Daisies is to dig them out. Weed-killers are not suitable for lawns; they are intended for killing weeds on walks. Lawn-sand is sometimes recommended, but so far as I have seen it used, it acted more as a stimulant to the Grasses than to directly kill the Daisies. Poverty in the soil in many instances is the cause of the Daisies spreading so much, and in such cases a stimulant is beneficial.—E. H.

—Why, as I have frequently mentioned before, not spud out the Daisies, or use an old knife to remove them? The gets rid of them once for all, and no danger exists. But you will find various remedies advertised for killing Daisies on lawns. When spudded out a hole or patch may be left, which can be easily filled up with a new piece of turf.—C. T.

522.—**Plants in a small garden.**—All the plants, or rather shrubs, mentioned may be grown in a small garden—at least, in a garden of fair size. It all depends what you mean by a "small garden." The backyard of a "suburban residence," for instance, would not do for them, I admire your choice. The Japanese Maple and its forms are very beautiful dwarf shrubs, for the colour of their leafage, deep-crimson in particular, a glowing, effective shade, whilst they are quite hardy, much more so than is usually supposed. The Chinese Guedler Rose (*Viburnum plicatum*) is best when planted in a bold mass, the shrub being comparatively dwarf, and charming when wreathed with the ivory-white flowers that stand out conspicuously against the deep-green wrinkled leafage. *Spiraea Thunbergi* is a useful shrub, the leafage turning to a splendid crimson colour in the autumn, whilst the flowers are pure-white, and produced very freely.—C. T.

—If you live in a district free from smoke you could not plant anything prettier than the Japanese Maples; but they require to come immediately under the eye to enjoy the full extent of their beauty, and they should not be associated with any other plants or flowers that are remarkable for brilliant colours. For the front line of a well-kept shrubbery border they are exceeding pleasing. If you get the true *Spiraea Thunbergi* you cannot have a better plant for a small garden. There is, however, such a confusion of names amongst the *Spiraeas* in English nurseries that I do not know where to get the one you mention. To make sure of getting what I wanted, I have imported a lot this autumn from Holland, which I knew at once as being correct by its wiry, arching growth and long, narrow leaves. The Chinese Guedler Rose, if I remember rightly, is not a very choice subject, although the flowers are sweetly scented; the height, however—about 3 feet—would suit your purpose. The Spanish Gerse world, I am sure, please you, as it is dwarf in growth, and continues in flower a long time; and as would the various forms of *Permettya*, which bears various-coloured fruits.—J. C. C.

—Certainly the shrubs named are suited for both small and large gardens.—E. H.

The Japanese Anemone, and its variety *Homirio Jobert*, or *Alba*, which bears white flowers, are amongst the most useful plants to grow to give flowers for cutting. They both attain a height of over 3 feet, but not near towns. If it is found that they succeed well plant more of them, the white variety in particular, as this will supply more than one hundred of flowers to fill the *epergie*. Give them a wet soil and open position. It is essential not to starve the roots, and a mulch every winter will be advisable to maintain their vigour. In the summer copious supplies of water are required, and when the heat years for more of such precious treasures, it is a simple matter to divide the roots, every bit taking, in due course, a respectable plant. Away from the town this

5176.—**Gladiolus "The Bride."**—"F. S." is doubtful about taking my advice to plant bulbs of this Gladiolus at once. Let me assure him that his bulbs will certainly be greatly weakened, if not quite spoiled, as far as next season goes if he keeps them out of the soil until the danger of frost is past. My reason for planting in the autumn is from observing that my bulbs left in the soil all the summer start to grow above ground about November; mine are now six inches high, and that even if the tips of the leaves get browned by frost they continue to grow away on the return of milder weather, and flower much stronger than those planted in spring. "F. S." will doubtless have observed that this variety not only flowers much earlier in the open ground than *G. Brauchleyensis* or any of the hybrid kinds, but it also goes to rest much sooner, so that its season of active growth has fully come in November, and trying to "improve in Nature" by keeping the bulbs out of the soil for months after they ought to be growing is a very doubtful experiment. I do not wish to mislead growers in northern districts that they can grow the same things fully exposed that they can in the south coast, but I think they will get little success with *The Bride* out-of-doors if they do not plant by

Anemone will develop into finer proportions; the rose-coloured flowers of the type will deepen, and the white of the variety become clearer. *A. japonica* is one of the richest gems sent to us from the land of flowers. It is well to form, besides a clump in the beds, a distinct mass in another spot in the garden, in order to cut from, then leaving the specimen clump to bloom in its own way. I think so highly of this fine Anemone that it would come into my list of the best twelve hardy perennials.—AMATEUR.

VERBENAS.

OWING to a very destructive disease appearing among these old favourites some years ago, we very seldom see the gorgeous displays which used to be quite common. Like other diseases,



Flowers of hybrid Verbena.

this seems far less prevalent among seedling plants than those raised from cuttings, and as the seedlings will bloom quite as free when treated as tender annuals, I propose giving a brief outline of the method successfully practised by me. It is possible to get seed to produce flowers of various colours, and they come fairly true, so that we can plan for beds of scarlet, white, purple, and several intermediate shades. Should an interloper show among them it can be pulled out without any serious disarrangement of the bed, for the surrounding plants can be pegged down to cover the space at once. Sow the seed by the end of January, either in pans or boxes. Use a sandy compost of leaf-soil, sow thinly, and place in a warm greenhouse temperature. Prick the seedlings off into other boxes as soon as they can be handled nicely, and when settled in the new soil pinch out the points. A distance of 2½ inches between the seedlings will do very well. We shall now be well into March and soon have a spent hot-bed at liberty. Nothing better can be found for the Verbena. Place a little more rich loam upon the bed, and very slightly fork over a little of the manure so that a rich light mixture is obtained. The stopping of the seedlings will have formed them into little bushes, which may now be planted into the frame about 4 inches apart each way. Shut up warm for a few days after having settled the soil around them with water, and then keep them growing freely, but still affording a fair amount of air. Pinch them back once more, and, as the warm days of May approach, remove the lights entirely during fine weather. Healthy, starchy growth will be the result of this treatment. Verbenas are not so tender as many bedding plants, and may be transferred to their quarters during the middle of June at the latest. Fifteen inches to 18 inches apart is a suitable distance, and if they are thoroughly watered a short time previous to being lifted from the frame, they will come out with splendid balls of roots, in much better condition for quick, healthy growth than if they had been confined to pots. There is also the great advantage of avoiding the most injurious check which neglect as regards water would cause, than which I know of nothing more detrimental to satisfactory growth in the Verbena. Planted in a deeply-moved and rich soil they are more certain to please than any other subject at the same cost and trouble. They will run all over the bed, and yet Digitized by Google

bounds, while the profusion of bloom from the end of June until frosts are prevalent is most pleasing. The chief enemy of Verbenas is green-fly, but these may be killed by fumigation while in the frame, and also by a little care in dusting the affected parts with Tobacco-powder. I quite believe that Verbenas enjoy Tobacco in comparison to other plants. Unchecked growth will almost invariably be clean and healthy, so that early measures are particularly advisable. Generous treatment, care that they do not suffer from want of water, and freedom from insect pests are all easily assured if a little attention is given them. When outside, they will need no more labour, except to water if an exceptionally dry season prevails. At such times, liquid-manure applied cautiously will be well repaid in the greater show of bloom. P. U.

5230.—An old neglected garden.—The first thing to do is to thoroughly work the soil, incorporating plenty of lime, road-scrappings, and similar substance with it to lighten it, and at the same time to enrich it. It is impossible to get good results unless the soil is in condition, and the frosts and rains of winter will sweeten it. Of vegetables you can get all the profitable kinds, Runner Beans, &c., and as you write that a gardener is kept, he will know what to get; besides, you have your own "fancies," so to say, in this respect. Infructuous plants of many kinds may be planted in the spring, and recently several lists have appeared in GARDENING, so no further mention of suitable plants is necessary. If you wish to go in for shrubs the following are good kinds, but will not do in a shady place: Hardy Azaleas, in many colours, which are, however, better for a rather shady position, screened from cold winds; Cotton-easters, *Cytisus praecox*, the White Spanish Broom, *Daphne mezereum*, *Dentzia gracilis*, very pleasing in a light soil; *Escallonia macrantha*, the flowers of which are reddish-erimson, and the leaves deep-green and glossy; Mahonia, Pearl Bush (*Exochorda grandiflora*), the shrub about 10 feet in height, and bearing a profusion of white flowers; *Garrya elliptica*, more often seen on a wall than as a bush, but welcome in the latter form; it flowers in winter when the weather is mild; *Hibiscus syriacus*, flowering in late summer and autumn; there are several varieties, but I care little for those with flowers of dull colours; *Hydrangea paniculata grandiflora*, which produces immense heads of white flowers, a very valuable dwarf shrub; *Lycocystis formosa*, *Magnolia manshurica*, flowering early in the year, the flowers white, cup-shaped, and borne in the leafless branches; *Olearia Maastii*, *Philadelphus microphyllus*, a beautiful dwarf "Mock Orange," producing a wealth of white fragrant flowers; Flowering Currants, the Rose Acania (*Rubus hispida*), *Spiraea arifolia*, the beautiful dwarf-growing *S. japonica* or *S. callosa*, and *S. Lindleyana*, *Lilacs*, the Gueddar Rose, and the Chinese form (*Vilfarum plantatum*), and *Weigelas*.—C. T.

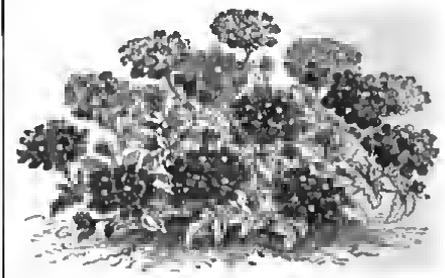
I should regard such an undertaking as yours as one of the pleasures of a lifetime. Few things can be more interesting than the renovation of an old garden where fine trees already exist. You have the body of the picture, so to speak, already completed, and all you have to do is to fill in the foreground; and if you do this judiciously you will not have long to wait for results. If I had the work to do I should first take notice of the kinds of shrubs that had made the best growth in the soil previously, and for future planting confine the selection chiefly to the same, as it is only on such lines that you can hope to succeed. There is a good number of evergreens that do fairly well under trees, when the soil is of a friable character, but all will not thrive in a heavy clay garden such as you describe. The common Green Holly and English Yew are as reliable as any for your purpose, so is also the green-leaved *Enonymus* and *Malus Aquifolium*. The White and Yellow Broom will probably succeed if you attend to them well until they get established. Where the soil is the lightest you may try the Aucubas and Portugal Laurel. In any case you must be prepared to break up the old soil before planting to a depth of 9 inches, so that will not injure the roots of the large trees materially, and to incorporate with it some fresh earth, so as to give the new plants a fair start. With regard to flowers, only strong-rooting subjects will be

likely to thrive, and if you want Roses you had better select the dwarf standard form, as the Brier-stock is the best of any for a clay soil.—J. C. C.

— Give the old garden a good clear up, and trench up the borders and quarters 2 feet deep. Apply manure if necessary. Perhaps a dressing of lime will do good. When put into a proper state of cultivation old gardens will grow good crops of all kinds of vegetables. There are no better shrubs for planting under trees than Hollies, Yew-trees, Boxes, Aucubas, and the Oval-leaved Privet. Where the shade is dense St. John's Wort, Periwinkles, and Ivies will hide the bare ground. Hardy evergreen Ferns may be planted in the shady spots. Do something to deepen the soil before planting.—E. H.

A few shrubs that would thrive best under the circumstances described are the Common, Caucasian, and Round-leaved Laurels (of these the last two are at once hardier and more handsome than the first), Aucubas, common Hollies, Box, Sweet Bays, common Rhododendrons, Lilacs, Privet, Syringas, common and Tree Ivies, and *Berberis Aquifolium*, and others. Among things of lower growth, the Rose of Sharon (*Hypericum*), Periwinkles of sorts, the small-leaved Ivy, Creeping Jenny (*Lysimachia*), Lilies of the Valley, the Yellow Fumitory, Hardy Ferns, &c., are extremely useful, especially among rockwork, &c. Such herbaceous plants as the Spiraea, Primroses of sorts, Anemones of many kinds, including the Japanese, *Aquilegias*, *Myosotis*, *Doronicums*, *Digitalis*, *Iris*, *Eurotheras*, *Funkias*, *Asters*, *Genus*, *Lychnis*, *Helianthus*, *Doronicums*, will also thrive. Of vegetables, Kale of sorts, Rhubarb, Seakale, Leeks, Lettuce, Endive, and Jerusalem Artichokes will succeed better than most others.—B. C. R.

Planting perennials.—For some plants, particularly such as flower in the early spring months, it will be obvious that to plant these the moment they are in flower, or expected to flower, is altogether wrong, as not only does it completely spoil the season's blooming, but it likewise overtakes the energies of the plant at a wrong season, while if the planting be done when growth and flowering are completed, the strength of the plant may be all directed to one important particular—namely, that of becoming established. Nor is this all, for invariably in the autumn there is time for such work to be done well, but in the springtime there is a greater demand upon one's time—so much so that the work is often done hurriedly and too often thoughtlessly, and has to be done over again. Just such an instance occurs to my



Dwarf Verbena for bedding. (See article "Verbena.")

mind. A newly-made border of herbaceous plants was planted last spring. It was about 150 feet long and 8 feet wide. Unfortunately the plants came to hand at a busy time, but as the border was ready, the plants were unpacked and planted in the course of an hour or so, or rather they were put in small holes and a little earth placed round them, and the owner boasted of the rapid way in which the work had been done. The result of all this was that this border was an eyesore all the summer, and only the strongest and most vigorous plants made any attempt to grow. Singularly enough I paid a visit to this very garden the other day, and found it all topay-turvy, and a couple of men digging up the 3-foot-high plants from near the Grass verge, and changing their places with those whose stature was only some 6 inches, and which on the hurry and bustle had been planted at the very back of the border.—E.

FLOWERS FOR PROFIT.

No doubt many readers of GARDENING grow flowers for the double purpose of pleasure and profit, and perhaps a few notes on kinds that do yield a profit may be acceptable to many. The unfortunates are such as grow entirely in the open air, or at the most do not need any special appliances or knowledge to bring them to perfection.

ASTERS (CHINA) are most beautiful late summer flowers, and to have them in perfection the seed should be sown in pans or boxes in March, setting them in cold frames. They will need pricking off singly into boxes or frames, so that they may make fine sturdy plants by the end of April, when they should be planted out in beds about 1 foot apart. They may be lifted and sold either in pots or with a good ball of earth to the roots, or as cut flowers they sell readily.

CALIA ATROPICA.—This sells readily at all church festivals. Plants do best as single crowns, potted in 6-inch pots and grown in low houses, or pits close to the glass, and for flowering at Easter they require very little artificial heat, it being the natural time for their flowering.

CHRYSANTHEMUMS (early and late).—The early varieties like Madame Desgrange sell readily as pot plants, or as cut flowers, there then being a dearth of good white flowers. About August or September they flower very freely planted in the open-air beds.

LATE VARIETIES that flower during December are more profitable than mid-season kinds. They must be kept very cool and freely ventilated, so as to get them at their best for Christmas markets. Kinds that naturally flower late are preferable to those cut down late in the season, as this weakens the plants very much. White, yellow, and the very dark crimson sell the best, decided colours being most effective in floral decorations.

CARNATIONS are very popular flowers, as they are much in request for button-hole bouquets. When the soil is naturally well-drained Carnations succeed admirably, and are longer lived than in heavy soil, but a good stock of young plants should be layered every year to make up for losses, old plants going off after severe winters, while young stock plants escape. Free Carnations for pot-plants to flower in winter and spring are profitable. A kind called Grenadier, that is readily increased from seed, is very useful.

LILY CANDIDUM.—The common White Lily is a good market flower, the long spikes, if cut before the blooms get fully expanded, selling readily to florists and flower hawkers. I transplant the roots about every fourth year, August is the best month for the operation, the roots being then dormant.

LILY OF THE VALLEY is such a universal favourite that even when the flowers are most plentiful a sale can be effected. The best way to make Lily of the Valley pay is to grow good large beds, and lift a portion every year, picking out all the flowering crowns for pots or boxes, and planting all the smaller crowns out in rows on rich soil, where they quickly develop fine crowns; the portion left undisturbed will give a good supply of bloom for gathering from the open air. They sell best tied up in bunches, with a few leaves mixed with about a dozen bloom spikes.

MARGUERITES.—Both white or yellow kinds have of late been very popular as cut flowers. They sell freely in the early months of the year. From old plants grown in cold-houses during winter, and in the open air good strong plants should be put out in May. The white varieties are the quickest coming into flower, but the yellow, which grow more strongly, make up for loss of time by producing an enormous quantity of fine blooms late in the season.

NARCISSUS of several varieties, such as Pheasant's-eye, Double White, and others, although imported in great quantity, are ever before home-grown ones become ready from the open air, and sometimes realise better prices than those forced under glass. Beds of bulbs succeed well planted between rows of fruit-trees, as the shelter is favourable to them in early spring.

Roses in open-air beds are much grown as a market flower, but the aim of those who expect profit should be to grow varieties like the Gloire de Dijon that flower more or less the whole season, for during June there is sometimes such a glut

of Roses that very low prices are obtainable, but by the end of July or August very much higher prices prevail. A good lot of Souvenir de la Malmaison and other good autumnal bloomers pay as well as any under glass. Marechal Niel, Niphetos, William Allen Richardson, Gloire de Dijon, &c., are extensively grown. Great quantities are sold at Easter, and there is always a demand for button-hole Rose-buds.

SWEET PEAS tied in bunches are good things to grow. Deep cultivation and picking the blooms as fast as they expand, so that none go to seed, are the main items to make them profitable.

VIOLATS of the single kinds are a speciality with many market growers in the South of England. They require transplanting every year in April in to extra good deeply-cultivated soil, and plenty of water in dry seasons. Red-spider is their greatest enemy; it is easier to keep it away than to cure it if once established.

JAMES GIBSON, Newport.

USE OF OIL-JARS.

THE great handsome jars used for bringing the finest oil from Italy to London may be made good use of in the garden. We saw a pair in



Italian oil-jars used for half-hardy flowers.

Mrs. Earle's gardens at Woodlands, Cullinm, used with very good effect—one on each side of the garden door. The best things to put in them would be half-hardy plants, like Myrtles, large Heliotropes, or Oranges, which could be taken intant into the cool greenhouse or conservatory at the approach of frost. — *The Garden.*

INDIAN MALLOW AND THE AFRICAN HEMP.

THESE are two very useful greenhouse shrubs that are not sufficiently known to the amateur, although both are cheap, easily grown, and of considerable beauty; the Indian Mallow (*Abutilon*) having been grown in this country for upwards of fifty years, and the African Hemp (*Sparmannia africana*) coming from the Cape of Good Hope in 1700. Both need the same treatment, and will form one of the best winter-flowering subjects it is possible to have. In the Indian Mallows we have a vast range of colour: Emperor, Violet Queen, and purpurea, are three good purples of different shades, while good reds may be found in Chrysom Banner, Fire King, and Scarlet Gem. Some of the yellow ones are also showy and clear, Canary Bird, Queen of the Yellows, and Curlew being the best with me; whites need only consist of Boule de Neige, and with delicate

rose-florum, and Princess Marie from the rose-coloured section, we have a grand collection of varieties. The Sparmannia has a peculiarly distinct flower. The petals are white with a little maroon at the base, the stamens are also maroon-coloured, and the anthers heavily laden with showy golden pollen. Both of the plants now under notice are perpetual flowering, but as we value an extra show of bloom in the winter, I propose describing my method of culture with this object. Cuttings of young wood may be struck with other greenhouse subjects in the spring, and grown on in rich loamy soil until July, when they may be stood outside in the sun until the end of September. Pinch out the growths occasionally, or a lushy habit will not be secured. They both commence flowering directly, and it needs determination for the amateur to remove the flowering joints; but this will be fully repaid by the greater show during winter, when each shoot will carry immense numbers of blooms until spring. A temperature of 45 degs. to 50 degs. is sufficient, but if a greater flush of bloom is required it may be had by giving a slight increase and a little liquid-manure. In early spring withhold water somewhat, cut them back, repeat

the operation as before. By treating them thus you are certain to have a grand winter display, and as both are unique in character, they are a pleasing addition to our winter flowers. They are readily grown as standards of four to six feet. It only being necessary to confine them to one shoot until the required height is reached, and then head them to form a top. I have seen grand standards grown in a single season, and they look very well among late Chrysanthemums.

P. U.

5113. — **Sun-dials.** — To set a sun-dial so as to obtain from it accurate time is not difficult, but it requires some preliminary trouble and careful adjustment. First have the dial levelled carefully with a spirit-level, then see that the gnomon is properly angled—i.e., set at an angle to the plate proper to the latitude in which the dial is situate. This angle is the same as the latitude; for instance, in lat. 54°, the gnomon must have its upper edge at an angle of 54° to the plate. This is to be found by a protractor, and as a protractor is usually small, I advise that the angles be extended from it on a piece of card-board so as to obtain greater accuracy. Having angled the gnomon aright, the next thing to do is to orientate it, otherwise to point it due north; I did this with a magnetic compass, remembering that the needle at present points 2½° W. of N. When I had carefully arrived by this means at an orientation, I tested its accuracy by holding a perfectly straight-edged 4 foot piece of wood to the upper edge of the gnomon, and trying on a starry night if the straight-edge pointed at the North Star. All this being accurately done, the dial will tell solar time; but solar time differs from earth time, in a variation which alters daily, and the two times agree only four times a year. This difference between clock and sun can be found in "Whittaker's Almanac," and if a card be hung near the dial, with a table on it of these differences, "Quærit" will have an accurate means of setting his timepieces to the minute. His dial, after all has been done, may be 2" or 3" wrong, but he can find how much the error is, and keep a note of it. Of course the time it shows is local, not Greenwich time, and to obtain this latter, another little memorandum must be recorded on his card. — T. D. LAWSON.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruits and vegetables for illustration. The drawings, if possible, will be engraved in the best manner, and will appear in due course in our next issue.

THE KITCHEN GARDEN.

WINTER BROCCOLI.

Good Winter Broccoli are invaluable where a continuous supply of vegetables is required; for, although where efficient means of protection are at hand Cauliflowers or Snow's Broccoli may be had in good condition up to Christmas, there is still a long interval before the so-called early spring kinds can be relied on to come into use. Veitch's Autumn Broccoli is, as is now well known, a most useful early-winter vegetable, for if planted in succession it continues to produce heads from November onwards. I generally set out a large quarter of this and Snow's After Early Peas. I do not dig, but merely level the ground and draw deep drills 2 feet 6 inches apart, making the holes with a crow-bar 2 feet asunder in the rows; strong plants are then inserted with the roots a good depth in the ground, and one good soaking of water starts them into active growth. They do not suffer from drought in solid ground nearly so much as in loosely dug soil, as the evaporation is reduced to a minimum; the growth is also more solid and robust, and better calculated to withstand sudden variations of temperature. I also make later plantings in a similar manner, but in smaller quantities, as in mild autumns they continue to grow very late; in fact, Snow's Broccoli has often come in too soon than too late; but in cold weather Broccoli heads may be kept in good preservation by laying and covering with Fern fronds or litter, which I consider preferable to lifting and storing in pits or houses, as a confined atmosphere soon deteriorates the flavour. Walcheren Broccoli (here figured), when of a good stock, is one of the best winter vegetables in cultivation. There are now also several other good late kinds in cultivation. The names can be seen in any good vegetable catalogue.

FORCING POTATOES.

Futoku Potatoes are much appreciated by many, not that the quality can be considered so very good when secured very early, but they come in for a dish when the prefix early gives them the passport. Of course, anything like a regular or daily supply of very early Potatoes is seldom looked for, as if so, long lengths of heated pits would be needed. For producing these very earliest dishes I have now for some years relied exclusively upon those grown in pots. The pot culture of Potatoes is very simple, and they grow to a usable size, and if not earlier, at least quite as early as any planted out in heated pits, and the quality is generally better on account of their being enabled to be dried off at a time when this process is the most desirable—i.e., a week or so before being required for use. By also growing them in pots it sets the frames at liberty for later crops. If

THE SETS are not far advanced, or at least not sufficiently so to need immediate planting, the best course is to start them in boxes. The sets should be laid in a single layer on leaf-soil, with a little of the same material sprinkled amongst them, and if kept fairly moist and also placed in a warm structure the sets will not be long in making a strong and sturdy growth. For early pot work 9-inch or 10-inch pots are quite large enough. Free drainage is very essential, for if this should become at all choked the haulm will turn yellow and collapse before the tubers have barely formed. The soil also must be fairly rich, light, and open. I use three parts light loam, one part leaf-soil, and some old Mushroom-bed material with a little charcoal. When ready for the tubers the pots are taken to the structure it is intended to grow them in and there prepared. The pots are about half filled with soil, placing two sets in each pot, covering them with 2 inches of soil, which will allow

for a little top-dressing later on. If the soil is in a fit state no water will be needed until the tops are through the soil, and then only but very little. During the early stages it is much better to allow the soil to become fairly dry before giving water. The main essential for a free, healthy growth is keeping them well exposed to the light, with neither too high a temperature nor too moist. Ours are placed in the Peach-houses or vineries which are being started, and where they remain until they become too warm or shaded, when they are shifted into another. Later on, as the haulm grows, it will be necessary to place two or three small sticks around the sides of the pot and tie with matting.



Broccoli "Walcheren." Engraved for GARDENING ILLUSTRATED from a photograph sent by Mr. Norman Blake, Bedford.

THE BEST VARIETY I have tried for pot-work is Sharpe's Victor. Mona's Pride, when it can be had true, is also good, the quality of this being preferred by many. Sharpe's Victor, however, on account of its short top and early tuber-forming, is a reliable kind. Beds formed with fermenting material are liable to lose heat very quickly during cold weather—that is unless the temperature is well maintained with linings. The low brick frames or pits heated with a flow and return pipe are the best. Not that fermenting litter or leaves should be dispensed with in these cases, as a body of quite 18 inches or even 2 feet should be packed into the frame in order to cause a genial heat. Ten inches or a foot of light and fairly rich soil should also be provided for the Potatoes. Drills 4 inches in depth should be struck out a foot or 15 inches apart, in which place the tubers 6 inches asunder. In the meantime between the rows of Potatoes a few rows of Radishes may be sown, or rows of Lettuce planted. Early Paris Market Lettuce may be set out 6 inches apart, when the plants would grow and be fit for use before being smothered up with the tops of the Potatoes. A little ventilation more or less, according to the weather, is very essential to ensure a sturdy and healthy growth. Planted-out Potatoes may easily be kept too wet, and there is also the danger of keeping them too long without water. The soil must be kept fairly moist, and this anyone can easily gauge by greasing a handful of soil just beneath the surface. I have seen people keep the soil so dry that upon a spell of bright weather occurring in March the tops have collapsed when the tubers should have been swelling off. In the majority of instances, however, the forcing of Potatoes has to be carried out by the aid of hotbeds. In my own case I have plenty of deep brick frames for vegetable forcing, and by filling these with fermenting material there is not the likelihood of the heat being so quickly blown out during cold, windy weather. A.

5076.—An Indian vegetable. — The botanical name is *Hibiscus esculentus*, and if it is called Damia. More than I de

not know. I succeeded pretty well this summer in an unheated frame with that other admirable and (in England) undeservedly neglected Indian vegetable, the Dringal or Purple Egg-plant, so I would be glad to try "Lady's Fingers" next summer. I should, however, expect it will want fire-heat in the earlier part of summer, which I cannot give it. The Egg-plant, though a vigorous-growing plant, would have done better, and I completely failed with Capsicums for want of it.—D. S. S., Guernsey.

—Birdce, known as OKRA in West Indies. (1) Remove seed and boll like Peas, and serve with pepper and butter on buttered toast. (2) Boll whole, and serve as before. (3) Curry. The fruit may also be used to thicken soup. *Hibiscus esculentus* is the Latin name. If "R. N." should care to spare me a seed, will he say whether from India or West Indies?—SCROZOR-GENERAL CATTLELL, Sull-mount, Cork.

SOWING VEGETABLE SEED UNDER GLASS.

A GOOD deal may be done, by the aid of glass, to heaten various crops, even without artificial heat, for as soon as the new year arrives we invariably get brighter, even though it may be colder weather, but in closely glazed houses, or frames a good deal of solar heat may be enclosed, which is enough to excite vegetation in seeds, and by the time they are well above ground there is a great lengthening of the hours of sunlight, and careful cultivators who make the most of solar heat can manage, by the aid of external coverings, to keep the seedlings safe until they can be trusted in the open air. The following may be sown at once—

BROAD BEANS, sown in small pots or boxes, soon vegetate, and if carefully hardened off, may be planted out in sheltered borders about the end of March. The Early Longpod and Beck's Dwarf Green Gem are good sorts for the first sowing.

BROCCOLI SPRIGS.—One can hardly get the plants too early, for, unless they have time to make a strong growth, the Sprouts will not be so large, or ready soon enough to fetch the highest price in the market. A box of seed sown now, and pricked off into other boxes as soon as fit, will give plants enough for the first crop.

CAULIFLOWER.—When the supply of autumn-sown plants is deficient, no time should be lost in sowing a box of early Snowball, and pushing the plants on so as to get them put out in April. They will be fit for use very soon after the autumn-sown crop.

CELERY for the earliest crop should be sown at once, as it takes a good while to get plants fit for putting out, and they do not germinate so rapidly as some seeds; but as solar heat increases they will grow more rapidly, and as soon as large enough to handle must be pricked out singly in boxes, about 3 inches apart. Well prepared plants have a great effect on this crop.

CARROTS.—Young crisp Carrots are greatly prized early in the season, and to get a good supply a frame should be filled half full of fermenting manure, and trodden in tight to ensure gentle and lasting heat. On this place about 6 inches of fine rich soil, and sow the seed in drills 1 foot apart. They will soon germinate if kept close, but must have plenty of air on all favourable occasions until they are ready for use.

LETTUCE.—A box of Cos and Cabbage kinds should be sown at once, as they make a quick accession to the autumn-sown plants, and at no time of the year are Lettuces in greater demand than during the early spring and summer months.

MUSTARD AND CRESS are always welcome. A box of each sown about once a week keeps a good supply.

PEAS, if sown in small pots or on pieces of turf, will be considerably advanced. They grow rapidly, but require full exposure on all fine days to harden them well before planting.

RADISHES come on splendidly if sown in a cold frame, and are then beautifully crisp and tender, with or without bottom-heat. The French Breakfast is a capital sort, also Wood Scarlet Frame Radish.

TOMATOES should be sown early, for unless the plants are strong when put out, they will not be in time to perfect a crop before the early frost stops their growth. Sow early, and grow the plants on in cool quarters to get sturdy plants. They will do far better when planted out than those rushed up in strong heat later on.

J. GROOM, Gosport.

INDOOR PLANTS.

BLUE LOBELIA.

This plant is indispensable where bedding-out in the usual form is pursued, for it is so dwarf, and such a continuous bloomer, and of the most intense blue, that no substitute is likely to be found for it; and to have a good supply of strong plants in spring is the aim of all gardeners, and many are the plans adopted for attaining that end. As Lobelias are easily raised in any quantity from seed sown in heat quite early in spring, and grown on in pots or boxes until the time for planting out arrives, this plan is very largely followed; but as the plants must get more heat to push them on to planting-out size than what is necessary for plants grown from division of the old plants, or cuttings struck in the autumn, it hardly needs any argument to prove that the colder plan will produce the strongest plants, and is the one I always adopt in preference to that of raising seedlings. The way I like to get a stock is to put in boxes off a good lot of the latest struck plants after bedding-out is finished in June; these are set out-of-doors, and allowed to grow freely until August, when their tops are clipped closely off, about 1 inch above ground. They are kept moderately dry until they start to grow again, but by the end of September they will be covered with healthy young shoots, and may then be shaken out of the old soil, divided, and divided into boxes of fresh soil. They may be left out-of-doors until the middle of October, when they should be placed in a cool-house or frame—in fact, the cooler they are kept, the healthier and sturdier they will be—and in February they may be divided again. Every little piece will make a good plant, for as soon as they get rooted and start to grow the points of the shoots should be pinched out to induce dwarf, bushy plants. If this be repeated two or three times a stock of dwarf, bushy plants will be assured. J. GIBSON, Gosport.

THE TUBEROSE.

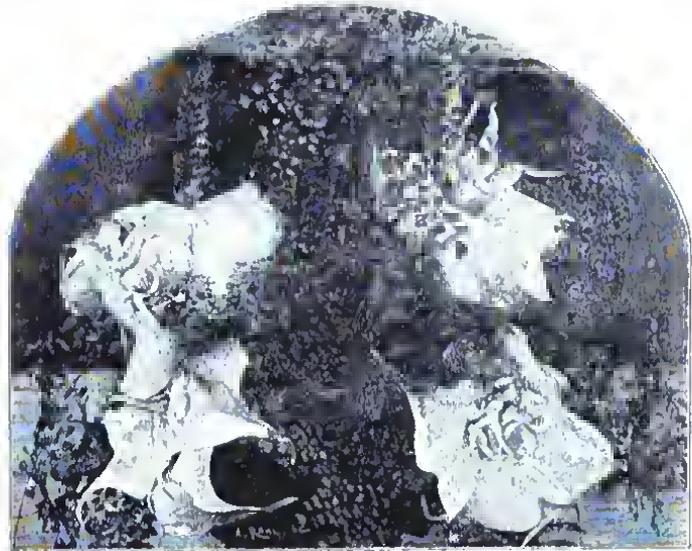
The December importations of this bulb should no longer be lost sight of. If the first batch has not yet been potted attention should be given to the work, for it is these which will prove very useful when in flower as a change to the earliest Gardenias and Rose-hinds for cool flowers and sprays as well as for bouquet work. For the Tuberose I have a liking myself for the tall pots as used by some Hyacinth growers; these pots give depth, which in the case of this bulb is of importance. In potting, I prefer to keep the bulbs nearly covered, as in the case of Hyacinths, making the soil fairly firm. This latter may very well consist of good turfy loam and leaf-mould, or, failing this, some spent Mushroom-manure worked through a coarse sieve; coal-scrappings can also take the place of silver sand if this latter commodity is scarce or troublesome to obtain in quantity. A moderate warmth may at once be given, but no undue excitement until the roots be well advanced, otherwise the foliage is drawn up weakly and the bulbs in a measure weakened also before the spikes appear. After one good watering to settle the soil no more is needed for some little time, the surface being meanwhile covered with a light dressing of Cocoa-nut-fibre to save watering. A dry place wherein to stand the pots should be avoided; a gentle bottom-heat, as from leaves only, in a pit devoted to the early forcing of shrubs, &c., would, on the contrary, be a suitable plan, but then even too much moisture from the syringe should be guarded against. By potting up a fair number a succession can be had later on, for it seldom happens that they all come into flower at one time. As the spikes appear these plants can be drafted to a house or put with additional warmth. Those not potted up at once should not be left in too cold a place, nor be exposed to a drying atmosphere. The better way to keep them is either in Cocoa-nut-fibre or sand where a temperature less than 45 degs. is not the rule. Rather than expose the bulbs I would put all up at once and regulate the succession afterwards. For pots of the size named above one bulb is sufficient, but if ordinary 8-inch pots are used instead three bulbs can be placed therein. Should the bulbs on arrival be found to be

shrivelled, not handling plump, they may with advantage be soaked in warm water for an hour or two; this will be far better than watering freely before roots are formed. When well rooted plenty of water is required, with frequent doses of liquid-manure, or soot-water will answer in its place. A weak solution of this latter will also greatly help to check any development of the red-spider, an insect to which the Tuberose is very subject. For this reason it is never advisable to have it in vineries, or amongst Cannibers or Melons even. The free use of the syringe is for this insect on the Tuberose the best deterrent. H.

DATURA (BRUGMANSIA).

Amongst flowering greenhouse plants that grow to a large size the Brugmansias stand conspicuous. Strong and vigorous in habit, they require a considerable amount of root-room unless the object is to restrict their size, a course of treatment to which they submit better than most plants that grow large naturally. They produce large funnel-shaped flowers, varying in colour from the white B. Knighti, the double-flowered form of which is here figured, to B. bicolor, the flowers of which are sanguine-red. They can be grown so as to bloom well in pots or tubs, but they are seen to advantage when planted out so as to form a standard, or, still better, where there is room for the growth to extend, as at the end of a large greenhouse or conservatory, where the light they get through the glass, to which the shoots are in close contact, matures the wood and induces the freest disposition to bloom. If in such a position provision can be made to plant them in an outside border as Vines are usually planted, taking the stems inside, but down, and there is enough room for the head to extend, the effect they produce when covered with their large flowers is very fine. Brugmansias increase freely from cuttings made of the points of the shoots, about 3 inches or 4 inches long, taken off in spring. They should be

4 feet 5 feet in height; the first season the growth should be directed so as to form this erect stem, and to get them up to a handsome size without loss of time. In the autumn when growth has ceased give less water, using no more through the winter than is sufficient to keep the soil from getting quite dry; during this time warmth such as is kept up in an ordinary greenhouse will suffice. About the beginning of March turn them out, remove all the soil, and put them in 12-inch or 14-inch pots, cutting the point of the stem back to induce their breaking several shoots so as to form a head. When they push into growth remove such shoots as are not well placed. Keep the plants in a greenhouse through the spring and summer with plenty of light and air, syringing overhead daily; they may be expected to flower about the beginning of August and September, when they can be placed in a conservatory, where they will be attractive for some weeks. Brugmansias are gross feeders, and must have plenty of water whilst growing, and during the time they are in flower. Through the winter treat as before; each spring turn them out of the pots, remove as much of the ball as can be done without disturbing the roots, replace it with new, and give larger pots or tubs as the plants increase in size. Every spring before growth begins the branches should be well cut in so as to keep the heads within a size proportionate to the place they are to occupy. When they are to be planted out it is better to grow them for the first year in pots, turning them out the following spring before growth begins, and cutting back the stem to induce the formation of shoots. These latter must subsequently be stopped and trained as required to furnish the space destined to be covered. Red-spider, aphides, and most of the other leaf parasites that prey on plants, will thrive on Brugmansias; much will be done to keep red-spider and aphides down by the regular syringing already advised. If merely bug or scale make their appearance, sponge and wash with insecti-



OUR READERS' ILLUSTRATIONS: Double Lobelia (Brugmansia) Knighti. Engraved for GARDENING ILLUSTRATED from a photograph sent by Miss Armstrong, 5, Clifton Terrace, Moolshahid, India.

put singly in small pots filled with sand and loam, and placed in heat, where they make roots in a few weeks. Then they should be moved into pots two or three sizes larger, with good ordinary loamy soil, to which a moderate quantity of rotten manure is added. After the plants get in growing freely treat in every way as for ordinary greenhouse stock, giving a moderate amount of air in the day with plenty of water and a free use of the syringe daily through the growing season. By the end of June they should have made enough progress to require moving into 8-inch or 10-inch pots. The usual way of having them is in the

forms. The undermentioned are all the kinds: B. bicolor, flowers red; a large grower; Peru. B. floribunda, orange-coloured flowers; South America. B. Knighti, a very handsome white-flowered kind. B. surcouleana, has immense, drooping, white, trumpet-shaped flowers, which it produces freely; a native of Peru. B. Waymanni, a dwarf-growing, white, and purple-flowered kind; from South America. B.

223.—Herbaceous Calceolarias, &c. —Now and then even a healthy plant will develop a slight variegation in the foliage, but when the leaves of an entire batch become

thing wrong at the root. Either the soil is of an unsuitable character or too much or unwholesome water has been given to the plants. I should advise you to keep the plants rather dry (but not so much so as to cause any of the roots to perish) for a time, and then to dissolve just enough soot in the water to give it a blackish tinge to, say, every other application, and a very little lime also would probably not be amiss. If anything will cure them it is this. The quality of the water supplied to pot-plants has a much greater influence on their health and vigour than many would credit, and accounts for numerous failures. This is one reason why growers in and near London and other cities are able to secure such good results—the water from the mains, though generally a little hard, is always pure and of the same quality. Chinese Primulas are very robust and vigorous subjects, but it is strange that the Cinerarias are not similarly affected, these being of a decidedly sensitive, if not exactly delicate, character.—B. C. R.

RAISING TUBEROUS BEGONIAS FROM SEED.

AMATEURS very often fail in raising plants of this section of Begonia from seed, because they sow too early in the season before they have sufficient heat to bring along the young seedlings. It is not difficult to get the seed to vegetate in a propagator or on a hot-bed even in January, but it is useless at that time to get the young plants up, unless there is a suitable warm structure to place them in as soon as they want more room. Anything less than 70 degs. of heat is not enough at any part of the season, and it is more necessary early in the year than later. If the seed is sown and placed in less warmth than I have stated it will rot before it has time to vegetate. Anyone having a stove or forcing-house may sow at once. But where there is not this convenience they had better wait until the middle of March or early in April. Another source of failure is leaving the seedlings too long before they are pricked off. Waiting until they are large enough to handle is time wasted, as the seedlings make but slow progress when left in the soil in which the seed was sown. The fact is, the surface soil gets sodden and caked over that the plants cannot grow. A stranger to the work no doubt would think that they are not fit to move as soon as you can see them. That, however, is just the right time to move them, and if the handling is done with a pointed stick and the little things gently pressed into some fine warm soil, they will grow away rapidly. Bottom-heat is not necessary after they are pricked off, but they must have a close warm-house, and be shaded from bright sun. I do not, however, advise anyone who is not well up in their treatment to sow the seed before the beginning of March, even if they have the most suitable appliances, as the dry air of a forcing-house is not quite the thing for these Begonias when so young. Plants obtained from seed sown early in March and pricked out in a cold frame about the middle of June will make handsome little specimens by the autumn, and give a good quantity of flowers. J. C. C.

5238. — Cutting down greenhouse plants.—If it is intended to strike cuttings from the new wood the plants named should be cut down at once, and placed at the warmest end of the house. Another way would be to leave the cutting down till March, and then use the ends of the shoots as cuttings. If the Passion-flower is cut back to where the wood is firm will be sufficient. Loam and leaf-mould will grow Passion-flowers. They need not be repotted every year. Use stimulants when the plants are growing.—E. H.

— If the greenhouse is well heated you may cut down all the plants mentioned towards the end of this month (January), and if you keep them as warm as possible subsequently, and frequently syringing overhead, they will soon break into new growth all over, and the young shoots so obtained will make the best of cuttings. In a cool temperature a month later would be better. The Begonias, however (supposing the winter-flowering or evergreen kinds are referred to), need slightly different treatment. Of these cuttings formed of the growth

made during the autumn and winter should be taken in February or the beginning of March, and inserted in a brick hot-bed, the old plants being thrown away. As regards the Passion-flower, if you cut it down, you will lose one or two seasons' bloom; the best plan would be to retain and train up a few of the strongest shoots, and thin out the weaker ones altogether. Plant it in good but not rich sandy loam, with good drainage, but not before the beginning of May. The plants will do far better turned out into a border of soil than in a pot, but if this cannot be done, plant it in a large box. Any pruning or cutting back may be done in March.—B. C. R.

5239. — Hoya carnea.—This plant may be grown well in a good-sized box, or even in a pot, as it requires comparatively little room, and with plenty of warmth and moisture during the season of growth will grow freely in a very small quantity of soil. But there is no need to place it over hot-water pipes, and, indeed, I should prefer to stand the box or pot on the solid ground in any out-of-the-way corner. A light porous mixture of loam, leaf-mould, peat, sand, and brick or mortar rubbish in nearly equal parts suits this plant best. Keep it almost dry during the winter, and give plenty of water and weak liquid-manure during the growing season.—B. C. R.

5240. — Cutting back Hydrangeae.—February is perhaps the best month in which to head back the growth of these plants, the treatment being similar for both the varieties mentioned. Cut back the strong shoots that have flowered back to a plump eye near the base of each, and remove any weak growths altogether. Growth should afterwards be encouraged by means of a genial temperature and frequent overhead syringing.—B. C. R.

5241. — Tuberosus Begonias.—Marquis of Stafford is a fine crimson-flowered variety, of a capital dwarf and erect habit of growth. Virginialis (white) and Mme. Comesse (salmon) are old sorts now hardly worth growing, and Mme. Arnould (rosy-pink), though a good kind, with a fine erect habit, is also by no means new. The others I do not know, but should doubt their being first rate. If you have a well-heated house or pit, or a hot-bed, you may pot and start the tubers early next month (February), if only an ordinary greenhouse, a month later will do nicely. In the meantime keep them safe from frost and moderately dry in Cocoa-nut-fibre.—B. C. R.

5242. — Propagating-pit.—At a sufficient depth below the sash to allow of 3 inches of Cocoa-nut-fibre being placed in it, in which to plunge the pots or pans of seeds or cuttings, &c., you must fix a piece of finely-perforated tin, galvanised iron, or zinc, duly supported by cross-bearers. Below this must be a chamber 6 inches or 8 inches deep, containing a metal pan 3 inches or 4 inches deep, and 10 inches or 12 inches smaller than the interior of the pit each way, supported on pieces of thick tile, or the like, 2 inches from the bottom. In the centre of this bottom, which may be of either wood or iron, and solid, a hole rather larger than the top of chimney of lamp must be cut, and this project through about half an inch. Fill the lamp and the tank (nearly), and regulate the wick by means of the button, and in a few hours there will be a nice bottom-heat. Keep the fibre always moist.—B. C. R.

— If I knew whether the light which covers the pit is in the form of a span or flat, I could answer your question much easier. In the first place, the more space there is above the hot-water pan, the more costly it will be to heat it. The most economical way of working a propagator is to have the glass-light only just high enough to receive a pot of cuttings. A space of 9 inches is the most I should allow above for this, as the more air there is to heat in this space the more oil you must burn to keep up the temperature. To convert your pit into a propagator is not difficult. You must have a zinc tray the exact size of the inside of the pit. This tray must be 1 inch deep, and covered with a perforated sheet of the same material. Bearings for the tray will have to be provided by fixing strips of wood on to the brickwork with one or two cross-pieces to support it, and fixed on to the wall already suggested, so as to allow of a space of 9 inches between the top of the tray and the covering of glass. This done you must

take out three or four bricks from one side to enable you to place the lamp under the tray, and over the hole so made in the brickwork a door or slide must be provided to confine the warmth. Half an inch of water in the tray is quite enough, and a covering of Cocoa-nut-fibre of the same depth on the perforated zinc completes the arrangements. I may mention that the glass covering should incline a little to one side, so that the condensation moisture can drain away. If at any time you get too much moisture in the frame you may take the water out of the tray for a day or two. You will gain nothing by commencing propagating or raising seedlings before the beginning of March, unless you heat your house up to 60 degs.—J. C. C.

5237. — A span-roofed greenhouse.—For your purpose some of the older varieties will be just as good as, if not better than, the newer introductions, and naturally less expensive as well. What you want is free-flowering varieties of a robust habit of growth, and for the majority the Japanese kinds will be most suitable, such as Elaine, Mille Læraix, Avalanche, Mme. Louise Leroy, and late flowering Fair Maid of Guernsey (all white), Sunflower, Mr. Garner, Thunberg, W. H. Lincoln, and Fulton (shades of yellow); Sarah Owen, Mrs. L. Jamson, and Boule d'Or (orange); Etiole de Lyon, Comdor, and Viviani Morel (mauve and lilac); Ed. Milynaux, Cesare Costa, and Garnet (red); K. J. Laing, Mme. Baco, and Bonnet Frit (pink); Mme. de Sevin (rosy-purple), and J. Delaux, Wm. Sewall, and J. Shrimpton (deep-crimson, the last two being new); J. S. Dibben (bright-yellow, new), Boule d'Or (golden orange), and a few more will also be found very useful. In the incurved section the most desirable for ordinary decorative purposes are: Mrs. G. Rundle (white), Mr. G. Benny (pale rose), Mrs. Dixon (golden-yellow), aureum multiflorum (rich-yellow), Miss Haggas (light), Lady Dorothy (brown-apricot), and Princess of Teck (pale-white), and Mrs. N. Davis (rich-gold), for late flowering. Several of the reflexed section would also be desirable, notably Cullingfordi, Hetty Dean, R. Smith, Elric, A. J. Banks, Chev. Damage, La Vierge, and Wm. Holmes.—B. C. R.

5243. — Andromeda floribunda grows best from layers in a bed of peat.—E. H.

5244. — Humea elegans should be pricked off either in single pots or in pans or boxes, and potted singly by and by, and shifted up into larger pots as more space is required. Harden off, and plant out end of May or beginning of June. The Humea makes good centres for beds in the flower garden, or looks well planted singly in the borders.—E. H.

Begonia "Winter Gem."—This is one of the most brilliant of all winter flowers. The extremely dwarf habit of the plant, with its bright-green habit and spikes of bloom sufficiently raised above the leaves to be seen to good advantage, are excellent features. In the stove—not the warm one where such as *Xorax* and *Nepenthes* thrive, but that where the ordinary run of winter-flowering plants, as other *Begonias*, *Primettias*, and the like, are grown in a satisfactory manner—this choice *Begonia* will find a congenial home. It has, in common with these hybrids which have preceded it from Messrs. Veitch and Sons' establishment, that highly important and noteworthy feature of retaining its flowers in good condition for several weeks. From three to six weeks these flowers will last in good order. This lasting property makes them all the more valuable for cutting from, whilst they may also be grown very successfully within the fog and smoke radius, as I have myself proved. The other two alluded to above are John Inal and Adonis. This trio should be taken more note of by those who are seeking for further and valuable accession to winter-flowering plants.—H.

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HOUSE & WINDOW GARDENING.

WINDOW HAIRBELLS (CAMPANULA).
No more beautiful window plants can be grown than these. They are easy of culture and, flowering with the greatest profusion, the wonder is that they are not more often seen than is generally the case. Plants placed in pots or baskets in a good ordinary louny empost are almost sure to thrive well if provided with ample drainage, as when in active growth they require an abundance of water to the roots. When grown in a window these plants greatly enjoy a washing from a warm and gentle shower of rain, and when such occurs they should be set outside to enjoy it. One of the best window Campanulas is figured below.

FLOWERS FOR A ROOM ABOUT CHRISTMAS-TIME.

EACH year brings an enlarged list of flowers which may be had about Christmas-time, and many of these are easy to grow, even for an amateur, if properly managed.

ROMAN HYACINTHS, for instance, need only to be potted early, and taken in the shelter of a sunny window when they begin to grow, to

no check in the way of cold draughts or want of water to do well.

LILIES OF THE VALLEY, too, can be had by Christmas, but require thoroughly good management if they are to have leaves as well as flowers by that time.

SCILLA SIBIRICA brings its lovely little blue flowers to add to our store, and blue is rare at this time of year. These lulls are quite hardy, but will bear slight forcing to bring them on for Christmas without injury.

SALVIA SPLENDENS, with masses of brilliant scarlet blossoms, can easily be brought on in gentle heat to flower by the end of the year, and these with the bright-crimson blooms of *S. rutilans* (the Pine-apple-scented Sage) are very useful for cutting now. Small neat plants of both these Salvias are preferable to large old specimens, for their flowers are out of proportion to a large plant, though they make pretty decorative specimens when about 18 inches high. It is, however, a good plan to keep a few old plants of Scarlet Salvias to utilize for cutting from, so that plenty of flowers can be had for the table. Large plants, potted up from the borders in October, of

MARGUERITES, both white and yellow, if placed in a box or pot of good soil, in a warmed

are very useful to mix with the white flowers which are most common at this time of the year, F. V. Raspail being one of the best for winter blooming. Cuttings taken in spring, and grown on through the summer without being allowed to blossom, give the best results in winter. They should be placed in September in a warmed greenhouse, however (or the sunny window of a sitting-room with a daily fire), to open their lustrous satisfactorily during the cold weather. There are, of course, a large number of other flowers which can be induced to bloom in the depth of winter with the aid of a hot-house; but the above list is compiled for those who have not more than the ordinary warmed greenhouse or conservatory, which is now so general. Even in a cold greenhouse late Chrysanthemums (such as Snowflake) can be had now, and also plenty of Violets in pots or boxes for cutting. Early bulbs, too, such as those mentioned at the beginning of this article, will blossom here without heat from November to January, with Auriculas, Tulips, Hyacinths, and Jaffoils to follow on earlier or later, according to the amount of sunshine which the greenhouse attracts. L. R.



Campanula garganica. Engraved from a photograph sent by Miss Wolley Dool, Edge Hall, Malpas.

flower from the end of November, if desired, those potted in the second batch—i.e., about the first week in September—being in bloom at Christmas. One of the great secrets in getting lulls to flower early is to utilize in the full the sunshine of autumn, which starts them far better than any fire-heat can do.

ROMAN NARCISSI, too, double, and very richly coloured, should be grown by all. They and also the Paper-white Narcissus are easily to be had from November onwards, if potted in relays from the end of August each fortnight for six weeks. The variety grandiflorus is by far the handsomer kind of this Narcissus, the flowers being much larger than the ordinary Paper-white, although these last are very delicate, and extremely suitable for cutting for Christmas table decoration.

VAN THOR TULIPS, too, can be grown to flower by Christmas if potted early, and brought on after the first three weeks in moderate warmth, with an abundance of tepid water. The best plan to grow these is to place them in light sandy soil in a well-drained box, about 8 inches deep, lifting the Tulips just as the flower-bud shows colour (and not before), and placing them in pots or bowls, with as much of the soil as possible adhering to their roots, and keeping them warm and damp until the blooms are open. In this way, the Tulips which happen to open first are utilised together, while those which are later make succeeding groups; they can be poked into china bowls, with wet Moss, if preferred to potting for Christmas

greenhouse, will supply a quantity of blossom for cutting throughout the winter, most useful for vases at all times. One of the best table plants for bright colour at this time of year is

LIBANIA FLORIBUNDA, which is now a mass of red and yellow flowers, which, with its pretty neat foliage, make it a highly decorative plant. The Libania must never be short of water, or it will shed its leaves. It should stand out-of-doors in the sunshine from June to October to ripen its wood, and be potted on both in the spring and autumn, for it needs plenty of nourishment. Libanias are not very delicate, and will stand a few degrees of frost if well hardened; but for early blooming they should be put into a warmed conservatory in September.

ARUM LILIES are not difficult to get by Christmas if they are not only started early in September, but also allowed to go to rest at the end of May. Many growers keep them in bloom till the beginning of July, and plants which are treated thus will not bloom early. They should be turned out of their pots into good garden soil before June begins, where they can rest till the end of August. Potted up then, and well supplied with tepid water, they can easily be brought on, even in a sunny window, to bloom by the end of the year. Those who grow flowers for winter should include

ZONAL PELARGONIUMS, especially those with double or semi-double flowers, which stand much better than the single blooms, both in the room and when cut. Their light and sunny

Pelargonium "Rollisson's Unique."

—These plants years ago were generally cultivated, but are now seldom seen. The beautifully ent foliage of the various forms with their pleasing fragrance caused them to be necessary adjuncts to the old-fashioned posy, but the superseding of this by the modern bouquet has done much to destroy interest in many good old-fashioned plants. Among the scented-leaved Pelargoniums the Unique class form a group by themselves, the members of which are characterised by less-divided foliage than many of the others, a loose, rambling style of growth, and above all by their beautiful brightly coloured blossoms. The best of this class is that known as Rollisson's, with rich purple-coloured flowers, while besides that we have also the Lilac and the Scarlet Unique. The long clear stems of these Pelargoniums serve them in good stead when used for cutting. They are very beautiful basket-plant, and for furnishing a pillar also well suited, while secured to a trellis or supported by a few sticks they form very effective specimens. Like the Zonal section, they are rarely without blossoms, but to flower them well at this season the plants should be thoroughly exposed during the summer and the buds removed. The result will be good, sturdy, well-ripened wood, which will produce an ample supply of blossoms if the plants are kept in a warm greenhouse throughout the winter.—L.

Streptocarpus hybrida (The Cape Primrose).

The order Gesneraceae is a very large one, and is extended over the greater part of the globe. There are no less than seventy-one genera and over seven hundred species. When we remember that these include the Gesnerias, Gloxinias, and Streptocarpaceae we see what an extensive and important order this is. The genus I am now treating upon has been wonderfully improved during the last few years, and the many grand hybrids, as well as their ready cultivation, has made them one of the most popular flowers we have where once they have been grown. As the flowers last a long time, both upon the plant and as cut thorn, and also from the fact that they flower with exceeding freedom for quite four months, they can safely be recommended as one of the most satisfactory plants it is possible to grow. The leaves are handsome in themselves, while the grand variety of colours borne by the Gloxinia-like blossoms make a show that is difficult to beat. Where a briek heat can be commanded they are easily raised from seed. Amateurs had better purchase a few small plants, and grow them on as I will now endeavour to describe. The same compost which suits Primulas and Gloxinias will suit the Streptocarpus. Like the above, they do not care for large pots. A warm greenhouse temperature will suit them admirably, it being only in the seedling stage when they need a stove heat. As they go out of bloom do not afford quite so much water, but never dry them off so hard as the Gloxinia. Nearly every shade of colour is represented among the seedling hybrids from pure-white to deep-purple and magenta, and there are many and various

TREES AND SHRUBS.

HEDGES—ORNAMENTAL AND USEFUL. ALL owners of gardens who live within a short distance of the sea-coast know what an important thing shelter is from the rough blasts that seem to check and even destroy vegetation much more than actual frost, and a garden without a thick screen of evergreens is a hopeless task, as far as getting anything to thrive, for the incessant buffeting to which they are subjected bruises and blights the tops, and the roots suffer proportionally as they get strained and broken by the action of the tops. Amongst the many plants used for hedges the following are the most popular in this locality—viz.,

CYPRESSUS LAWSONIANA AND MACROCARPA.—Two of the best Conifers for making hedges, as they may be removed with safety up to a good size, so as to form a hedge 4 feet or 5 feet high at once, and they do not need much clipping or cutting to keep them thick from base to summit, neither do they present such a stiff, formal look as Yew-hedges do.

EUONYMUS, both green and variegated, is very much used here, as it succeeds admirably by the seaside, seeming to enjoy the saline breezes. It looks beautiful in winter after a drizzling rain.

LAURUSTINUS in several varieties is one of the very best of hedges, and flourishes splendidly by the sea during mild weather. It is covered with snow-white heads of bloom, or the rosy buds that are very pretty. It should be cut back directly the bloom gets shabby, so as to give a good long season for making its new growth. The Laurustinus strikes root freely from cuttings, but requires considerable care in removing after the bushes get large; in fact, they should be transplanted every year to ensure plenty of fibrous roots close to the stem.

HOLLY, variegated and green-leaved, makes a thick, impenetrable screen, and very ornamental. It is not of such rapid growth as the preceding shrubs mentioned, but is very lasting and efficient. It thrives well by the coast.

LAVENDER, both common and Portugal, quickly makes a good hedge, and the bright, shining leaves are highly ornamental. If cut with a knife, instead of shears, it is far less stiff and formal in outline.

IFIPHYRUS VIRGINIANA makes excellent hedges, and stands removal well; makes one of the most feathery and light-looking screens, with varied silvery tints.

PRIVET AVALANICUM (the large-leaved evergreen Privet) is one of the most rapid growing of all hedge shrubs; grows freely in any soil or situation, and for a wind screen, or to hide any objectionable objects, there is nothing more suitable.

SWEET BAY flourishes well by the coast, and makes splendid evergreen hedges. It keeps green and luxuriant through the fiercest gales.

MIXED HEDGES are favoured by a good many, and certainly are less formal than when all of one kind of shrub is used. A great variety of subjects, both evergreen and deciduous, can be employed in mixed hedges, such as Lilacs, Berberis, Roses, Myrtles, &c., and in small gardens a much greater number of favourites can be included if the wind screen is made to find a place for many that would otherwise have to be left out altogether.

JAMES GROOM, Gardener.

5224.—*Ailanthus glandulosa*, &c.—If it is wanted to keep the *Ailanthus* dwarf and bushy you may cut it down in February, but the tree-like character of its growth does not indicate that it requires such treatment. If you want to see it assume its natural characteristics you had better allow it to grow its own way. Of course, you are aware it is not quite hardy in all parts of the country. *Dioscorea* *paniculata* is a hardy shrub, which I advise you to plant without cutting it about in any way until you see how its long leaves fits in with the position you give it.—J. C. C.

Put them over in March to obtain the tropical effect produced by abundance of fresh young foliage.—E. H.

The best time to cut these plants down is in the spring, just before the new growth commences.—H. C. H.

5219.—*Grafting a Holly*.—Various styles are usually grafted on the common *Ilex*. Holly is usually grafted and planted in a cold situation, and the effects. The grafting may be done any time before growth begins.—E. H.

CLIMBING SHRUBS.

VINES (VITIS).

In reply to several queries: An ornamental climbing shrub some of the Vines are useful in the garden, especially for trailing over trellises, arbours, pergolas, and pillars. There is a similarity in the foliage of most of them, and, therefore, it is unnecessary to describe them in detail. The *Isabella Grape* (*V. Labrusca*), known also in gardens as *V. Thunbergi*, has



The Charet-coloured Vine.

large bold leaves, rusty-coloured beneath, and turning to brilliant shades of crimson in autumn. *V. cordifolia* (also called *V. riparia*) is a North American Vine of rapid growth and very hardy. Other North American kinds are *V. rotundifolia* (the Summer Grape), and *V. vulpina* (The Fox Grape), while from the Himalayas we have *V. humilis*, whose foliage dies off in autumn with brilliant shades of red and crimson; and from China and Japan comes the beautiful little *V. heterophylla humulifolia* (the Hop-leaved Vine), with small Hop-like leaves and berries about the size of Peas, and of a lovely turquoise-blue colour. *V. h. humilifolia* is one of the most valuable of hardy ornamental Vines and is easily procurable. The Common Grape (*V. vitifera*) is, of course, ornamental, but being less vigorous and less rapid in growth than those above mentioned, is not so desirable. Some of the more robust kinds, as the Fox Grape and the *Isabella Grape*, will climb and ramble over trees to a great height, and, in autumn, will light them up with the fiery lines of their dying foliage. In planting Vines under trees they should be placed a few feet from the stem, where the soil is less dry and poor. The Charet-coloured Vine does well trained to a single stake, as shown in our cut. This Vine, or one very like it, is very commonly grown in the fields in Touraine and other parts of France for colouring wine, and therefore cannot be difficult to obtain in quantity if nurserymen so wish it. It should be planted occasionally in groups on dry banks, as well as against the house and trellises. B.

TRANSPLANTING LARGE TREES.

PLANTING for immediate effect has of late years become a common practice, and in so doing the larger the tree that can be successfully moved the greater the profit to the planter. For several reasons that will be explained hereafter it is unwise in the extreme to remove trees of too large size from one situation to another, specimens of from 12 feet to 15 feet in

height being, unless under unusual circumstances, quite big enough. In some cases, however, as in the embellishing of a new property, the getting up quickly of shelter and screen is the first consideration, and in such cases the quicker the growth and the larger the trees used are much the better. So much depends on the site of the house, and whether this is open to severe winds and to the nature of the soil that the planter will have to be careful in his choice of trees, the sites they are to occupy, and the way in which the work is carried out. It is, of course, unnecessary to say that in the dips of the ground and where natural shelter is afforded the largest trees may be used; whereas on mounds or exposed positions smaller, more sturdily growing and better rooted subjects must be chosen. First of all, after having arranged as to the sites of the various clumps, belts, or standard specimens,

THE HOLES OR PITS should be formed of about sufficient size, or larger is still better, for the roots and balls of earth that it may be intended to insert. In some cases, however, and I have found the arrangement to work well, it is advisable not to make the pit until the specimen has been brought on the ground, and then by taking into consideration its size and shape, the placing of the trees to advantage can be readily done. Another equally good way is to examine the tree that it is intended to remove, and by taking into account its size and branch-spread, the place for its final planting can be readily decided and arrangements made for opening up the ground for its reception. These methods of planting large trees can, however, only be successfully practised where the specimens are one's own or being brought from one part of the estate to another for the purpose of quick embellishment. Where the trees have to be bought from the nurseryman the case will be entirely different, for then the specimens will generally be of about equal size, and forming the pits for their reception will be fraught with no great skill or amount of designing. It is needless to say, perhaps, that the work of planting for immediate effect can be much more satisfactorily accomplished where the trees can be lifted from one's own grounds as then a specimen of any particular size and shape can be chosen. About the making of the holes for the reception of the specimen trees little need be said, the size of the ball of earth and roots being a safe guide as to the depth and width of the opening. But it is much better to have the hole larger than is necessary, and the sides and bottom well picked up and loosened, for the free spread of the roots afterwards. Should the soil be stiff or of inferior quality, the addition of a little good loam or leaf-soil, as the case may be, will be found of great benefit for the newly-planted tree. In lifting the tree a

GOOD DEEP TRENCH should be opened just outside the root-spread, and to the depth that the roots are likely to penetrate, and the soil from this gently picked away and inwards towards the stems of the tree, until the main portion of the rooted mass is arrived at. Then by undermining the mass of roots and working either planks or mats beneath the ball, the whole can be successfully shifted from one position to another. When the ball is not too weighty, a new bass mat sewn, as it were, beneath the ball and the ends gathered up firmly and tied to the stem, will be found an excellent method of conveying trees from one place to another. In any case matting the roots and ball is an excellent plan, and greatly minimises the risk of breaking up the mass when being conveyed to the place of planting. I have found the junker on wheels the best mode of transit where heavy specimens have to be dealt with, but the size, weight, and distance to be conveyed have much to do with the method of removal. A small stout truck placed on wheels about 18 inches high, and which do not come above the level of the body of the truck, has done good work in the removing of heavy trees from one place to another. This truck is 4 feet long, 3 feet wide, and built of stout timber, the wheels being solid and double tyred, and about 7 inches wide. They are placed so as not to come above the level of the truck—a point of great moment, as should necessarily require it, the ball of earth or framework on which it is placed can protrude over the sides of the body without coming in

contact with the wheels. Being very low from the ground is another advantage in lifting the specimens on to the truck. But there are many ways and means of transferring large trees which will occur to the intelligent planter. Having conveyed it to the destined position for planting, the tree should be slid gently from the truck and into the hole prepared for its reception, which can have been arranged as to depth and diameter while the tree is still on the carriage. The soil is then filled in and firmly tramped and the tree staked, this completing the operation of planting. D.

HARDY BAMBOOS.

IN reply to "J. B.," "R. S.," and others, there are many more hardy kinds of Bamboos than people suppose. There are certainly not less than a dozen quite hardy and distinct. The two great essentials to successful bamboo-culture are shelter from cutting winds and plenty of moisture during the growing season. Bamboos are unaltered by the severity of frost, which often intensifies the rich-green colour; but a few days of sharp east wind often suffice to brown all the foliage and sadly disfigure them. There are, however, especially in large gardens, many sheltered spots where Bamboos will thrive, but generally it is by the water-side that they attain to their greatest stature and display their fullest grace. In all situations Bamboos are ornamental, whilst, being evergreen, they are especially valuable, for we can enjoy their beauty the whole year round. There are giants which also grow into trees, and also lowlier kinds which form huge spreading shrubs. In the minds of many, Bamboos are associated with the tropics and a tropical heat; but the tropics do not contain one-half the members of this beautiful family. North China and Japan have given us the best kinds now available for the garden, and these are perfectly hardy. With these we may have all the luxuriance and grace of tropical vegetation in summer and winter. The French have paid much more attention to the Bamboos than the English. Many of the Bamboos made shoots 10 feet long in about a month in summer, and some strong shoots upon *B. Mitis* grow as much as 4 inches and 6 inches in twenty-four hours, as proved by actual measurement upon several successive mornings. The following are the best hardy Bamboos that have as yet come under my notice:—

B. METAKE.—This (here figured) is the commonest, hardiest, and most accumulating of all the Bamboos. It is a strange-growing, large-leaved kind, attaining a height of from 4 feet to 8 feet. Its foliage is the largest of all the tall kinds, the leaves being each about 10 inches long and 2 inches broad. Its stems are very erect, and the branches cluster round them in thick tufts. It is a native of Japan.

B. RAGAMOWSKI is a dwarf species. It might almost be called a dwarf Metake, as it much resembles that species, but is even handsomer, the leaves growing a foot or more in length, and attaining a breadth of as much as 3 inches. So far as I have seen it does not grow more than 2 feet high, but sneaks freely, spreading out into wide tufts of ample and rich foliage. Used as a groundwork to taller kinds or in broad masses in front of them, it would be very effective. It is a native of China and Japan.

B. SIMONI, also from China and Japan, is a distinct and handsome kind, forming huge tufts about 10 feet high. In a young state its habit much resembles that of *B. Metake*, but it is readily distinguished from that species by its narrow leaves, which rarely exceed 1 inch in breadth, but are about 10 inches in length. Its habit is very erect, and the clusters of branches upon the canes are very dense. Under the name of *B. Simoni variegata* is sold a form with narrower leaves, which are striped with white, but so far as I have seen the whole tuft has a half dead appearance, and I should not recommend it, especially as there are one or two really fine variegated kinds.

B. VIRIDE-GLAUCESCENS is the most graceful of all the hardy Bamboos. It is vigorous in growth, perfectly hardy, and surpassed by none for elegance or beauty. In the "Dictionary of Gardening" it is made a synonym of *B. nana*, which is said to be "a rather tender species, requiring to be grown in the stove or green-

house." This cannot apply to *B. viride-glaucescens*, for there is no *nana* about it, and it certainly is not tender. Moreover, it is said *B. nana* grows from 6 feet to 8 feet high, but *viride-glaucescens* grows 12 feet high, and spreads over a lot of ground. The young shoots are of a purplish-green, but with age become yellow. The branches are inserted at right angles, and arch gracefully, the leaves being about 3 inches long and about three-quarters of an inch broad. Young tufts of this bamboo are exceedingly light and elegant in appearance, and the old canes have such feathery clusters of foliage that they have been compared, and not inaptly, to a group of finely cut Chamaedoreas. This kind should be included in the smallest collection, and if it were only possible to grow one kind, I would have this one in preference to all others.

B. MITIS is the giant of hardy kinds. It is a native of China and Japan, where it is said to attain the height of from 40 feet to 60 feet; but, of course, it will not attain anything like that height in England, although it will grow 16 feet high. It does not spread much, but the canes spring up in close proximity to one another. They are large, and gradually taper to their tips. The branches, which form a slight angle with the stem, are clothed with an abundance of leaves, which are each about 2 inches long and 1-inch broad. It is one of the smallest-leaved Bamboos.

B. AUREA grows both in Japan and China. It somewhat resembles *B. Mitis*, but is of a more erect and rigid habit, and the leaves are rather larger. The canes are yellow, as the name implies, but this colour is only taken on with age. It is a very ornamental species, and somewhat variable. What is known as *B. sulphurea* is probably only a variety of *aurea*, and there may be many other slightly varying forms of it which have given rise to the somewhat confused nomenclature of the genus.

B. QUILLON is a magnificent Bamboo. It is said to be one of the hardiest, growing 12 feet high. The canes are like those of *B. aurea*, but the leaves are altogether larger, especially in a young state, when they are as much as

leaves, which are of a light-green colour. It is not thoroughly hardy.

B. GRACILIS is made a synonym of the above, but it can hardly be so, as it is still more tender; at least, the shoots, being made late in autumn, are usually cut down by frost. But if treated as an ordinary perennial plant, and cut down to the ground each spring, other shoots soon appear, and form graceful tufts of grassy foliage, which looks fresh and beautiful all the summer.

B. HIRONIS, or *B. Hachiku*, is a Japanese kind, which came from M. Latour-Mariac, and it is destined to become popular when well known. It is vigorous and hardy; in fact, last spring it looked as well as any other. It is an exceedingly graceful kind, as the slender canes, arching upwards, branch freely, and the branches are densely clothed with rich-green leaves, which vary in length from 1 inch to 3 inches, and are about half an inch broad. It is well known that several seasons must elapse before a Bamboo reveals its true character; therefore *B. Hironis*, although already exhibiting high qualities of vigour, hardness, and grace, may yet become still more beautiful. Certainly it is a valuable addition to hardy kinds.

B. NIGRA is a graceful species and a native of Japan. In a mature or full-grown state the canes are of a shining jet black hue, but in a young state they are green, and ultimately change to brown. Those fine black canes obtained from this species for umbrellas and other handles will hardly be made in England, but, nevertheless, it is a free and graceful variety, with arching shoots and an abundance of small, rich dark-green foliage.

B. VIRESCENS is so called from the violet-black tint of the young canes. It is a Chinese kind and a vigorous grower, attaining to the height of *B. viride-glaucescens* and proving quite as hardy. The canes are freely branched and well clothed with rich foliage. In a young state the leaves are each 5 inches to 6 inches long and 1½ inches broad, but upon the mature or older canes they are shorter and narrower. The clusters of black hairs around the leaf-sheath are very conspicuous in this species.

B. FORTUNEI is a Japanese species which never grows more than 2 feet high and has a slender stem. It might almost be taken for a vigorous native Grass, but it is a valuable plant, nevertheless, and useful for associating with the taller kinds. It is only found in gardens in two variegated forms, which are named respectively *B. Fortunei argentea* and *B. aurea*. These are the only variegated Bamboos worth growing that I have seen. The first-named kind has long narrow leaves, which are striped with white, and the variegation is effective, constant, and very enduring. The variety *aurea* has broader yellow-striped leaves, and the colour is apt to fade towards the end of the season, but in spite of this it is a handsome foliage plant and well worth cultivating. The following somewhat new hardy kinds are highly spoken of: *B. Boryana*, *B. Marliacea*, and *B. Castillonii*. The last-named kind is especially interesting, as it is one of the curious square-stemmed varieties, two sides of the stem being green and the other two sides yellow, whilst the leaves are striped with yellow, the variegation proving both regular and constant. It is a vigorous grower, and should soon become common in gardens. H.



A hardy Bamboo (*Bamusa Metake*).

5 inches long and 1 inch broad, whilst the clusters of hairs beside the leaf-sheath are larger and more conspicuous in this kind than in any other of what may be called the *aurea* type.

B. FALCATA.—This is often called *Arundinaria falcata*. It is an Indian species, and probably, next to *B. Metake*, the commonest Bamboo in gardens. It grows from 3 feet to 6 feet high in gardens generally, but in favourable situations it often attains to double or treble that height. The canes are slender, but freely branched, and densely clothed with a profusion of

vigorous growth, and should soon become common in gardens.

SHU.—**Yew from cuttings.**—The common Yew may be propagated from cuttings. Make up a bed of sandy soil in a shady place. Place a frame on it—a handlight will do and only a few cuttings are put in. The best time is the end of August or beginning of September, and the further we get away from that time the fewer the cuttings that will root.—E. H.

CHRYSANTHEMUMS.

CHRYSANTHEMUMS ABOUT CHRISTMAS-TIME.

A SUPPLY of Chrysanthemum blooms about this time is perhaps more appreciated than at any other period of the year. Apart from the value of the flowers in the conservatory, they are almost indispensable in a cut state for church ornamentation. No flower will withstand the change of temperature with impunity so well as the Chrysanthemum, and for that reason they are doubly valuable in a cut state for Christmas decoration. Now is a good time to make a selection of suitable varieties; given this and a structure to flower them in that is damp-proof, and there need be no difficulty in having a quantity of flowers when Christmas in 1894 comes round. It is perhaps less easy to cultivate the plants on the large-bloom method, and retard the expansion of the blooms so as to have this class of flower in at the time named, but if the plants are managed on what is known as the "bush" system, there need be no difficulty at all to have flowers in quantity. The cuttings should be inserted without delay, so as to afford the plants a long season of steady growth, so that the stems may become thoroughly matured. Pinch out the point of each plant when about 4 inches high, repeating this operation when 5 inches more growth has been made. Afterwards allow the plants to have undisputed sway, encourage them to grow freely by maintaining the roots in a proper state, never allowing them to suffer for want of moisture; neither should they have too much repeatedly. Freedom from insect pests is decidedly in favour of success. It is impossible for a free growth to be made if green and black fly hold sway over the points of the leading shoots. Mildew also must not be permitted to obtain a foothold upon the foliage. It is the flowering of the plants from what are known as terminal buds that retards their development as compared with the plants managed to give large blooms. These "bush" grown plants supply flowers not only in greater profusion, but they can be cut with long spikes, each having a cluster of flowers at the end, and which is so much more convenient for arranging in vases. If a few blooms are required of larger size for any special purpose these can be had by thinning the flower-buds that cluster around the central one, thus giving additional opportunities for the single bud on each shoot to swell to a greater size, and finally to develop larger blooms. The following sorts I can recommend to provide blooms and colour in variety as circumstances require by individuals. White flowers are perhaps more sought after than any other kind, therefore I give these the premier notice. Mme. Mezzani (swirl-like petals, free blooms, free flowering), Lily Lawrence (creamy-white, slightly incurving florets), Plean (long florets, pure white), Potter Palmer (snow-white, very free, long florets), Florence Davis (opens with green centre, which passes away with age), Beauty of Exmouth (recurving florets, ivory white), Ethel (stout erect petals, pure-white), Fair Maid of Guernsey (long florets, stiff habit of growth), Stanstead White (incurving petals, pure-white). All the above belong to the Japanese section, the following also are white flowered and are of the incurved type: Princess Teck (opens pink, passing with age to white), Lord Eversley (a sport from the preceding, pure-white), Miss Marehau (a loosely incurved flower), W. H. Lincoln (one of the best of yellow flowering varieties, dwarf and free), Peter the Great (pale-lemon), grandiflorum (incurving florets, orange-yellow), Mrs. A. F. Spaulding (bronze-yellow, free and effective), Boule d'Or (yellow, tipped bronze), Beauty of Castle Hill (long wiry petals, pale yellow), E. G. Hill (quite one of the best, orange-yellow), Leon Frache (bluish-white), M. E. A. Carrière (pale-pink), Mrs. E. Beckett (rose-pink), Louis Boehmer (silver-pink, hirsute florets), Étoile de Lyon (as a bush the flowers are pale-lilac, very free, one of the best), W. W. Coles (bronzy-red), Comte F. Lurani (silvery-pink). All the above coloured varieties are of the Japanese section, the following, free flowering apricot-yellow, Gablem Gem, is more a reflexed variety. E. M.

5134.—Outdoor Chrysanthemums.—You can take cuttings off now if an open

during the next two months. The suckers which come up through the ground some distance from the stem make first-rate cuttings. After they are struck and growing on in pots or boxes they may be pinched once or twice, which will make them dwarf and bushy, but they will not require to be pinched after being planted out about the end of April, instead of transplanting them, the best plan would be to take cuttings every year. The following will be suitable: Alice Butcher (red, shaded orange), Blushing Bride (bright rosy-lilac), Flora (deep golden-yellow), Frederick Pelé (deep-crimson, tipped gold), George Wernig (primrose-yellow), Lyon (deep rosy-purple), Mme. Desgrange (white), Mrs. Hawkins (golden-yellow), Mrs. J. R. Pitcher (bluish-white), Pierce's Seedling (orange-yellow), Prémicé (golden-yellow), Mr. Wm. Pierce (red, changing to bronze-brown).—F.F.F.

GOOD LATE CHRYSANTHEMUMS.

MANY kinds are grown for late blooming, but the following are specially adapted for that purpose: Mrs. Marchant, a pure white, very fine incurved flower, very much like the much-praised Mrs. Alpheus Harly, but of a much better constitution, flowers very freely, and fine for exhibition. Ethel White, a splendid large flower, borne on long, strong foot-stalks, very free flowering, and very late; the only defect is that it shows the centre of the flower rather prominently. Snowflake, a very pure white, with quilled petals, of dwarf habit, and exceptionally late, at its best under ordinary treatment about Christmas. Snowdrop, a pure-white Pompon; its little bunches of pure-white little button flowers are very useful in decorations, very easily retarded until Christmas. Gloriosum, a lemon-coloured variety with quilled petals, extremely floriferous; a rather dwarf variety that makes splendid pot-plants, and excellent for cutting. Mrs. Jones, or Yellow Ethel, is the exact counterpart of White Ethel, except in colour; one of the best for long-stalked yellow flowers. Mrs. Hill, a fine, bronzy-yellow, very strong growing; makes splendid specimens for the conservatory. Cullingfordi, one of the best dark-crimsons in cultivation; a reflexed flower of great merit, very hardy, and lasts a long time when in flower. Mariano Lacroix, a beautiful pure-white fringed Japanese flower. It is not naturally so late as the preceding, but by the plan of cutting down in June, it is made to flower very late; in fact, it is one of the sorts most extensively grown for Christmas bloom by many market growers. Belle Paul, a tall-growing Japanese kind; a good late variety, with a pale-pink flower. Lily Lawrence, a broad-petalled, waxy flower, of great substance, pure-white; a naturally very late sort.

JAMES GROOM, Gosport.

CHRYSANTHEMUMS AFTER FLOWERING.

ALTHOUGH Chrysanthemums may be called hardy plants, a great percentage die off during the winter if left in the open ground. I do not think it is from actual frost, for here, in the South of England, they appear to suffer more than in places where they get very much more frost, and I always as a precaution keep a few plants under cover (even of the hardiest kinds) that I wish to preserve. Some kinds of Chrysanthemums throw up a great quantity of root suckers much earlier in the season than others, and these are comparatively safe; but it is these that are late in sending up young growth that require great care, for if left in the open ground, or if grown in pots, set out exposed to all weathers, there is considerable doubt as to whether they will throw up at all, for in mild open winters slugs are very active, and if they eat off two or three of these suckers, even before they appear above ground, there is a great chance of the plant going off altogether, and these sorts should be kept in a little warmth until some young growth is visible. When some cold frames are available, the pot plants as soon as cut down should be set closely together in them, for even if only required for planting in the open ground they will repay the shelter of glass until the end of March, for when a stock of cuttings is secured many pitch the old plants away; but for outdoor flowering old stools are much the best if planted out with a good head of

growth on them, and allowed to grow right away without stopping, they make fine bushes, and flower earlier than plants grown from cuttings and pinched to induce a well furnished head of shoots. J. G., Gosport.

NOTES ON CHRYSANTHEMUMS.

CHRYSANTHEMUMS AT EXHIBITIONS.—It is interesting to notice how greatly Chrysanthemum shows are changing. At one time every flower was either shown in the usual way on boards without leafage of any kind, and in a group, cramped together in a very solid way. Now we see a different style, and one that it is to be hoped will be further developed. The flowers are arranged in vases, one kind to each vase, and in one case, set off with the foliage of the Mahonia, the best of all for the Chrysanthemum, especially if of orange or bronzy shades. Twigs of leafy Beech or Elm are full of beauty when used with the flowers, and by no means less than when such orthodox foliage as that of the Maiden-hair is chosen. One danger noticed is to go too far, and crowd the flowers together in lumpy bunches. This is not what is wanted. Every flower should tell. Let it be seen, so that its individual beauty may give pleasure.

SINGLE VARIETY JANE.—This is one of the most beautiful of all Chrysanthemums, and if the cuttings are struck late, flowers are produced far into the winter. It requires very little disbudding and the objectionable plan one sees at shows of getting the single varieties very large deprives them of all characteristic beauty. They are far prettier when seen in graceful racemes on the shoots, and are of the purest white with numerous narrow florets.

CLASSES FOR JAPANESE KINDS.—The aspect of the Chrysanthemum, as far as shows are concerned, is gradually changing. We now get incurved and reflexed Japanese, in which the charming narrow and elegant florets are lost. Positively some of the newer kinds, like Lord Brooke, are as much incurved as Japanese, and the reflexed type is objectionable—the florets lumped together, short, and utterly devoid of grace and beauty. Then, again, not a few are very coarse-petalled, broad, ugly florets, fit neither for decoration nor to look at on the plant.

CHRYSANTHEMUM MR. JAS. CARTER.—Those who wish for a pretty little flower for table decoration or filling small vases should make a note of this. The flowers are composed of very narrow florets, and are not unlike a Centaurea. The colour very soft primrose-yellow. It is free, and when used with graceful Grasses or Fern is very pleasing. Writing of Chrysanthemums reminds me of the beauty of Lilian Bird, which may be described as one of the Catherine-wheel class, the florets narrow and shrimp-pink in colour. It is not necessary to disbud—at least, very little—as the disiro is to get sprays. The peculiar form of the flowers lends itself to decorations. F. P.

5241.—"Bush" Chrysanthemums.—Avalanche, Mlle. Lacroix, and Kynsford White are three of the best varieties to grow on the bush principle, where but one bud is left to each shoot. They are all white-flowered and fairly dwarf in growth. The first two are especially so. In addition to those already in stock the following six coloured sorts are suitable: Cul. W. B. Smith (oh! gold yellow, shaded terra-cotta), Excelsior (bright orange cerise), Glibro du Roebur (bright orange-amber, flushed crimson), Miss Watson (a lovely high bright yellow), Vivian Morel (deep-mauve), and Edwin Molyneux (crimson, gold reverse). Of the new sorts and those already in stock the following four will do in 7-inch pots: Avalanche, Source d'Or, Vivian Morel, and Bouquet Fait.—E. M.

5138.—Chrysanthemums in the open ground.—The following varieties will be found suitable for flowering in the open ground: Alice Butcher (red, shaded orange), Frederick Pelé (deep-crimson, tipped rose), George Wernig (primrose-yellow), Mrs. Hawkins (golden-yellow), Flora (deep golden-yellow), Mr. Wm. Pierce (red, changing to bronze-brown), Pierce's Seedling (orange-yellow), Prémicé (golden-yellow). Cuttings may be put in now and up to end of February; after they are struck grow them on in pots or boxes, and plant them out about the end of April. There are other varie-

ties, such as Roi de Précoce (rich dark-crimson), &c., which do very well in the south; but, as a rule, they will not flower here in one of the midland counties of Scotland. They are later than the ones mentioned above, and generally get destroyed by frosts ere they come into flower.—**FIFE.**

5227. — Propagating Chrysanthemums.—If no cuttings push from the old stool or root "T. D. L." must procure some from another source. Sometimes varieties are stulkorn about sending up suckers from the base. The only thing that can be done is to cut the stem down to within 2 feet of the soil, place the pot in a gentle heat, and syringe the stem twice daily, withholding water from the roots otherwise than simply giving sufficient to keep the soil moist.—**R. M.**

—The fault of stem cuttings is that they do not make growth free enough. They are so much disposed to make buds in their initial stage, which is a check to freedom of contract. Rather than depend entirely upon these for the stock of any particular variety, I should advise "Anxious Enquirer" to obtain some fresh cuttings from elsewhere, so as to make sure of having some healthy plants. At times stem cuttings do grow out of the frequency to bud, but they are not to be depended upon. If the old roots could be placed in a little warmth, and have their stems syringed twice daily, keeping the soil rather on the dry side, growth would be all the quicker in starting from the base.—**E. M.**

—Some varieties are naturally later than others, and all that can be done is to give them a little heat, and syringe the pots overhead frequently. If the cuttings do not appear in time, better purchase a few young plants. The stem-roots of some varieties make good cuttings and plants, but as a rule they form too many flower buds, and do not grow freely. See also reply to 5227.—**H. C. H.**

—If the plants are healthy and well-grown very little difficulty ought to be experienced in obtaining cuttings, more or less, though some varieties are naturally much shyer than others. I have always found *K. Molieux* to produce plenty of cuttings, though they are often later than many other kinds. All you can do is to put the plants into a gentle heat, top-dress with rich soil, and syringe them overhead on fine days, and cuttings are almost sure to appear, sooner or later.—**H. C. H.**

—There is nothing for it but to wait patiently. Give the old plants a little heat. To get good cuttings early be content with fewer flowers. When a plant has exhausted its flowering freely, the cuttings of *E. Molieux* and some others start very slowly, and not infrequently come weak.—**K. H.**

5171.—Chrysanthemums for bush culture.—Presuming they are wanted for general purposes, the following twelve will suit. They will furnish blooms from October until January. Roi de Précoce (rich bright-crimson), Alexandre Dufour (rosy-purple), G. J. Quintus (pink-mauve), Mons. Wm. Holmes (rich-crimson, golden reverse), Margot (rose-chamois), Lady Selborne (white), James Salter (blue-mauve), Sionce d'Or (bright-orange, shaded gold), President Hyde (bright-yellow), Mons. Bernard (bright purple-violet), L'Adorabile (dark canopy-yellow, shaded violet), Florence Frey (waxy-white).—**FIFE.**

IXORAS AND THEIR CULTURE.

For some reason or other ixoras are not cultivated nearly so much as they deserve to be. There is, I think, a popular notion that they are far more difficult to manage than they really are. If it is thought that bottom-heat is essential, that may be dispensed with, for I have grown them here very well without it, and seen others do the same. Bottom-heat is, I am aware, an accessory, but not indispensable. If the idea exists that growing ixoras means increased trouble with the mealy-bug, that also should be cast to the winds, for there are worse plants than the ixoras for this pest, the *Diphidania* to wit. As regards other insects, there is no extraordinary trouble, nor need any fears be apprehended from either the one or the other if a determined set be made against their increase. The best time to commence the culture of ixoras is in the spring, with small plants well furnished in nothing larger than 8-inch or 7-inch pots. The best season for propagating is from now onwards to the end of March—at least, I find this to be the time when I can succeed best. The additional warmth all through the winter in the pipes gives a reliable bottom-heat for striking. I prefer to take cuttings of the cuttings (near the growth, and when it is semi-hardened being preferable to that fully

matured. The cuttings should be placed firmly and singly in 2½-inch pots. If the room be short, the cuttings will be found to strike very well in water, being potted when rooted. The former plan is, however, preferable, as another small shift can be given without any check at all.

THE CUTTINGS should not be allowed to droop by exposure; this they will not do in a close pit with warmth. For the first year the aim should be to secure a good well-furnished base rather than attempting to lower the young plants. By a few stoppings a good groundwork will be formed; the shoots should also be drawn outwards in a semi-horizontal manner. This will encourage back breaks. For whatever purpose the plants are intended, the foregoing plan is a good one, as bushy plants are in any case the best. After potting from the 3-inch pots must be regulated according to the progress that is being made. When this is satisfactory, the plants should be good bushy ones in 6-inch pots in twelve months from the time of striking. If struck in the autumn or winter and kept growing, they would be fit for 4½-inch pots by April and for 6-inch pots by July, in which pots I would prefer to winter them, giving the next shift about February. The following summer they would give a good crop of flower—a dozen heads or trusses to a plant. They may be grown very well as decorative plants in smaller pots. I have had them thus in 4½-inch and 6-inch pots with six and eight or more trusses, thus making very attractive plants whilst in flower. An excellent plan is to continue striking a few plants fresh every year, so that a successive supply is always on hand. If it is wished to grow on the plants to half or

SPECIMEN SIZE, I would not let them flower the two first seasons at all, making the chief object that of growth entirely. As to soil, there is a difference of opinion. For my own part, I prefer the best peat I can get, full of fibre and of lasting character, such as one would choose for New Holland plants or Cape Heath. To this I would only add silver sand in a liberal manner. If the peat is not first-rate, then a good addition is some nutty charcoal or cracks broken up finely. Good leaf-soil from the Beech or Oak is very good, but if used to any extent is not easily made so firm in the pots as peat; with this I would mix good fibrous yellow loam; with this I would make a very good mixture with sand. I have seen *I. coccinea superba* thriving very well in nearly all loam, but the foliage is not usually so deep in colour as when in peat, nor do I think the plants would last so long in good condition. Firm potting I firmly believe in; I consider it one of the essentials to success, for if a plant is to last well it must be potted well. When loosely potted, the stem in time will become loose and the soil far too porous. Overpotting is not desirable. When the plants are pot-bound and showing for flower, some weak liquid-manure will assist them not, however, too frequently. In order to flower plants at any given future time, the treatment must be regulated accordingly. If they are needed in bloom in May or earlier, the growth must in a large measure have been made the previous summer and autumn; then after a short spring growth they will thus set for flower. If I remember rightly, Mr. Baines kept his plants of *I. coccinea* growing in a brisk temperature all the winter, showing them grandly in May. For

LATER FLOWERING, early spring pruning followed by fresh breaks will be the best plan to pursue. In some cases, as when growing on young specimens, merely topping the shoots would be all that is necessary. The other plants that would flower in May would, as far as any pruning is concerned, have to receive attention the previous summer rather late. If plants are needed in flower in August or September for any given purpose, they should on an average, taking one sort with another, be stopped all over at one time about sixteen weeks before they are wanted in bloom. Thus if stopped at the middle of May, they would flower about the middle of September, and so on. In any case the stopping is a safe plan to adopt if autumn flowering is the main object desired. As regards

preferring, however, that it should be nearer 65 degs. than 60 degs., I can grow them most satisfactorily. By the end of February I would aim at 70 degs. at night in fair weather; less when severely cold, say 65 degs. By the end of March or the early part of April, 70 degs. at night ought to be maintained. The day temperatures should range from 10 degs. to 15 degs. higher according to the weather. Higher than this even will do no harm; even 90 degs. and 95 degs. at closing time in the summer is only congenial to them, especially the Japanese section, under which most of them are included. The higher temperatures cannot always be maintained in a mixed house of plants without some detriment to other plants. Where, however, all are calculated to do well under it, rapid progress can be made. In my own case I am growing them in a pit formerly used for Pines with a fair command of heat, to maintain 60 degs. or 65 degs. being comparatively easy in the winter, whilst in the growing season the day temperature would more often than not touch 80 degs. at closing time with about 70 degs. at night. I have already alluded to bottom-heat. In the spring when starting the plants into fresh growth it accelerates root-action, and thus assists the top growth.

YOUNG PLANTS also can be grown in more speedily when plunged in a brisk heat or temperature of 80 degs. or 85 degs., which is high enough in any case. But rather than have the plants plunged in any material which has a tendency to become soddened, I would infinitely prefer to let them stand over rather than in fermenting material. I have grown them in bottom-heat and out of it, and have been satisfied with the results in both instances. In the former, however, the plants will not take nearly so much water; in fact, as the season progresses it must be given with some considerable caution. In the latter manner more water can be given at the roots with safety. Taken all ways, I think bottom-heat for starting into growth and hastening on young stock is the best, but as growth becomes well advanced I would prefer to dispense with it. The syringe should be freely plied at all times; this, whilst it assists the joints greatly in making their growth (a humid atmosphere being most congenial), at the same time softens the plugging material. By a free use of the syringe also the insects to which they are subject can be better kept in subjection.

CLEANLINESS from all insects is most essential, mealy-bug, thrips, scale, and fly all coming within the category. We can control all the three last-named by the syringe, the sponge, and occasional fumigations. The *Ixoras*, being evergreen plants, should not be kept too dry during the winter, even if no growth is in progress; sufficient water must be given to keep the foliage fresh. I well remember an old plant grower who was fond of *Ixoras*, but who erred in keeping the plants too dry in the winter; hence thrips were troublesome, whilst some of the wood would die and the plants be considerably weakened, fresh growth coming away weakly in the spring. Specimens do not, of course, suffer so soon as smaller plants, by reason of the larger amount of soil, unless they happen to be pot-bound. As to names, if I were limited to half-a-dozen kinds, I would grow *I. coccinea superba*, *I. Fraseri*, *I. Prince of Orange*, *I. Westi*, *I. Williamsi*, and *I. Pilgrimi*, with *I. macrophylla* as a special variety for specimens. **H.**

Nurses for plantations.—The use of nurses in plantations is a subject deserving of notice. How seldom do we find these planted sufficiently thick or of adequate strength to give the necessary shelter to the main crop! The extent to which they should be used must depend upon the exposure. Where this is great they may be filled into within from 30 inches to 50 inches of the standards and of each other. Upon more sheltered sites they may be from 4 feet to 5 feet apart, and when thinned out, they will have attained useful sizes. The Mountain Ash is second only to the Larch for use in bleak situations, and the Spruce will afford a better shelter upon a less space than the Scotch Pine. The Scotch Spruce, Norway Maple, Pinaster, and the Elder are very serviceable near the standards. **A.**

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of GARDENING, 21, Southampton-street, Covent-garden, London. Letters on business should be sent to the Publishers. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by adopting, as far as their knowledge and observation permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that general answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appeared.

5213.—Potatoes for show.—Will someone kindly name the best two Potatoes, Round and Kidney, for show?—CRIBBO.

5211.—Showy Hibiscus.—Will someone give me five names of two or three of the most showy Hibiscus, "Althea frutescens"?—PAGES.

5215.—Treatment of a Hydrangea.—I have a plant of this, which flourished well. How shall I prune it, as I am told it should be cut down?—P. J.

5212.—Veronica in pots.—I wish to grow plants of Veronica in pots. Will someone please describe their culture, and to they require more than the ordinary greenhouse temperature?—F. J.

5217.—Rock plants.—I am just now building a rough wall of large stones at the end of a lawn, and shall feel greatly obliged if anyone would give me the names of a variety of rock plants suitable for planting between the stones?—H. S.

5238.—Pea and Bean for show.—Which is the best variety of Pea and the best variety of Bean for exhibition, and when should they be planted, and how should they be grown, to have them ready for showing in August?—H. S.

5240.—Growing Cucumbers and Melons.—I should like to know if a large area in large pots as well as by putting the soil loose on the sledge in a small stove, as I think it would take less room?—A CORRESPONDENT, Birmingham.

5252.—Hydrangeas in pots.—Will someone kindly tell me the proper treatment for Hydrangea-plants in pots? I have some that have been at rest, and all their leaves are off. I would like to have them in flower in August or September next.—JANE.

5251.—Open-air Chrysanthemums.—Will someone kindly recommend the best Chrysanthemums, of various colours, most suitable for cultivation in the open ground, six for each of the autumn months of September, November, and December?—HEAT.

5253.—Kidney Potato for show.—I shall be very thankful if someone will give me the name of the best Kidney Potato for show, also the name of the best round variety for the same purpose, and how ought they to be grown to get them in condition for showing by the last week in July?—R. H.

5255.—Pruning Vines.—Will someone kindly tell me the best mode of pruning Vines, having several in a house, but have not pruned any before now? Should they be cut close in, or one or two of the upright cut? Full information as to cutting, and when is the proper time, will be obliged?—DANIEL OF GRAPES.

5254.—Cutting back a Magnolia.—I should be pleased to know how much, and when, I may cut a Magnolia back? It is nearly 30 feet high, and 3 feet in width, and grows very strongly, and is getting too large for the space. Can I strike cuttings, or how is it best increased, as I wish to get a small plant or two?—A READER, Huddersley.

5257.—Auriculas in a garden.—I have just taken charge of a garden where there are a lot of Auriculas. They were nearly covered with leaves that the wind had blown among them. I have cleared them all off. They now have a very queer look, with long legs and very small tops. They had slumped off a great deal. Can I do anything more to help them now, or must I wait till winter is over?—FANNY.

5256.—Mistletoe.—I had very much pleasure reading the article recently in GARDENING on Mistletoe. This is a plant very little known in this country except when it comes to the Christmas markets (very much). I should like to grow some, and would be very obliged to any of your Liverpool-shire readers who would supply me with some ripe berries in their season? H. GIBSON, Ballyvaughan, Belfast.

5257.—Cabbage for show.—Will someone kindly tell me which is the best variety of Cabbage (both red and white) for show purposes, and when should the seed be sown, and how should they be treated to have them ready for exhibiting in August? Also which is the best variety of Cauliflower for the same purpose, and when should the seed be sown, and how ought they to be grown to have them fit for getting at the same time?—R. H.

5258.—Solananum capiteastrum.—Last spring I sowed some seedlings of these in my greenhouse. When the plants were large enough I planted them outside in a prepared bed. They grew strong and flowered freely, but did not set any berries, although they were well watered. I have now cut them down to within 4 inches or 5 inches in the pots, and they are starting again. How shall I treat them in order to have them well fruited next season?—T. J.

5259.—Poplars.—Will someone kindly let me know if Poplar-trees can be topped without injuring them, and if it does not increase their root-growth, and consequently take still more goodness out of the soil; also as to the best time for the operation? The trees are about 40 feet high, and about 10 feet apart, and are pressing against the garden fence. I have been told that topping would increase this, and at the same time make them more bushy.—POPULUS.

5259.—Best Carnations.—On page 534 (December 21st) there is given a list of about three dozen of the best Border Carnations. I should be much obliged if P. H., or anyone else who has grown them, would kindly say which of these they have proved to be "non-bursters," as so many of the border Carnations have the fatal characteristic of splitting the petals, rendering them almost useless? Even a small list of non-bursters would be of great service.—E. C. PARKS.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

Richard Bell.—Apply to Messrs. J. Laing and Sons, Forest-hill, London, S.W.

Catalogues received.—Pines, Carnations, &c. Mr. John Snellie, Bishop, near Glasgow.—Garden Seeds, &c. Messrs. J. H. Pearson and Sons, Chiswell Nurseries, Notts.—Flowers, Peppercorn, and Fruit Seeds, Messrs. William Guthrie and Son, Widdgate, London, N.—Vegetable and Flower Seeds. Mr. H. Spalding, Tenby-street, Birmingham.—Seeds, &c. Mr. M. Childers, 11, Rotherhithe, N.E.—Seeds, &c. Messrs. Cooper, Talbot, and Co., 101, Southwark-street, London, S.E.

BEEES.

SEASONABLE NOTES.

About this time Bees require but little attention beyond seeing that the floor-boards and entrances of hives are kept clear, to ensure ventilation, and carefully guarding against dampness within the hive.

PACKING HIVES FOR TRAVELLING.—Excepting during a hard frost colonies of Bees may now be moved long distances with safety. Care is, however, necessary in packing, so as to avoid the breaking away and falling of the combs, such a calamity being almost a certain restriction to the Bees. The secret of success in moving colonies of Bees is the admission of plenty of air into the hives. The excitement and emigration of Bees on being removed greatly increases the internal heat of the hive. In preparing straw hives for travelling, they should be inverted, and placed in cheese-boxes, having a tin lid at the bottom to prevent jarring. Before inverting the hive a little smoke should be blown into the entrance to drive the Bees up amongst the combs. The hives should then be turned up, and coarse sack or canvas tied over to confine the Bees; they thus get abundance of air, and in that respect travel safely. To prevent the combs breaking down, a sharp-pointed stick should be passed through the sides of the hive, so as to pierce each comb. This should be done a few days before removal. The Bees will fasten the combs to the stick, and so greatly increase their firmness. Another way to keep the combs steady and firm is to push wedges of crumpled paper between the combs. These paper wedges, being elastic, prevent the jarring of the combs. In cool weather there is not so much risk of combs falling, and the inverting of the hive is not so necessary. Hives of all, tough comb, with sticks passed through them, may be safely moved by first nailing them to their floor boards, covering the entrance and crown-hole with perforated zinc, and tying them with cord to their boards. In moving frame hives the frames should be fixed quite firmly by notched strips of wood nailed to the floor boards, and placed at each end of the frames. The Bees should be confined to the hive by perforated zinc nailed over the entrance, and also over the tops of the frames, in place of the quilt, the perforated zinc being so placed as to allow the Bees to pass freely between it and the tops of the frames. In this way they get more air than they can if the zinc be fixed close to the tops of the frames, and some of the weight of the Bees is thus taken off the combs. As soon as the hives arrive at their destination they should be placed where they are to stand, the zinc on their tops removed, the quilts and rafts put on, and the entrances opened.

BEE'S ENEMIES.—The chief enemies to guard against at this season are mice and birds. The following quaint remarks on the subject were made nearly two hundred years ago: "The

good Bee, as other good people, hath many bad enemies, which she herself cannot overcome without the assistance of man, for whom she labours, and, therefore, the wise Bee-man will take care to destroy the enemies of his friend, the Bee, whose enemies are: The mouse (whether he be of the field or house) is a dangerous enemy, for if he gets into the hive he pulls down the combs, makes havoc of the honey, and so starves the Bees. Some gnaw a hole through the top of the hive; some keep their old homes, and come to the hive only for food; and some make their abode between the huckle and the hive. To prevent this take care that your hives be well and closely wrought, for if the straw be loose and soft they will the easier make their way through the hive. The Woodpecker and Sparrow are both enemies to the Bees; the Woodpecker with his long, round tongue draweth out the honey, but he does more mischief to wood Bees than to those of the garden; the Sparrow doth devour the Bee from the time of the first heading till the Wheat be kernel. The Titmouse is another enemy, of which there are three sorts. The Great Titmouse, from his black head and breast, is the worst enemy of the Bees. He always watches at the hive for the coming and going out of the Bees. He will stand at the door, and there never leave knocking till one cometh to see who is there, and then, suddenly catching her, away he lies with her; and when he hath eaten her he lies back for more. Eight or nine will scarce serve his turn at once. If the door be shut that none can come out, he labours to remove the bar. If that be too heavy, he falls to undermining the door for a new way; and when these devices cannot get them out, some have the skill to break the dished walls of the hives above over against the place where they lie, and there they are sure to have their purpose. The little Russet Titmouse in the winter feedeth only on dead Bees, but in the spring he will take part with the great ones. The little Green Titmouse can only be accused of eating some few dead Bees, and that only in some hungry time." G.

5261.—Management of Bees.—Having casually bought four hives of Bees this week at a sale, will some kind friend tell me what I am to do with them through the winter as to the management, &c.? I may mention two of the hives are somewhat heavier than the others. Do they want feeding, and what, and how to give? What is the best position? Should I be due south? I may mention the hives are straw, with a small aperture on top with a movable cap to allow another hive to be placed over if necessary. Any information as to the above, and also what are the best hives for use, will greatly oblige?—YOUNG BUNNEN.

POULTRY AND RABBITS.

REARING DUCKS.

If young Ducks get their liberty they will wander far and wide in search of slugs, worms, &c., and cause no slight anxiety to their owner; or, if they once obtain access to water, which it is desirable to keep beyond their reach, they will never rest satisfied unless they can enter the pool or stream whenever they choose. It is this wandering propensity on the part of Ducklings which causes so many of them to fall victims to rats and other enemies. Many a promising brood has been entirely swept away by rats. I have known the latter to enter a coop at night and kill the whole hatch. They will also lie in wait on the sides of a ditch and swoop down upon the ducklings as they are revelling in the mud below. Some years since, out of a lot of seventy Ducklings, I did not get forty fit for market, nearly the whole of the remainder being captured by the rats in the manner just described. The reader, then, will understand that there are situations, such as near the banks of a stream, or in the neighbourhood of old barns and rick-yards, where the Duck-raiser must be very careful or his profitable success will be few and far between. It is not enough to hatch good broods—they must be reared. I, therefore, advise anyone who contemplates Duck-breeding to take a good look round before he commences operations, and, if the visits of rats are feared, let him adopt chicken-rearing instead. As Ducks consume

A LARGE QUANTITY OF FOOD, it is necessary, if profit be the end aimed at, to hatch the Ducklings as early in the season as possible, so that the full benefit of the high prices which prevail in the spring may be obtained. The birds, too,

must be kept improving from the time they are hatched until they are ready for the spit. Large numbers of Ducklings are, I know, hatched during the summer and remain about the yards for some months, and then are fastened up for two or three weeks to be fattened. It is impossible for much profit to be got out of such birds, and too often, I fear, they are reared at a loss. As in the time required for getting Ducklings ready for market I may describe a case which occurred several years since in a southern county. Early in the spring a brood of Ducklings was hatched at a farmhouse. Among the servants employed there was a young fellow who was himself the son of a farmer. When the Ducklings were taken from the nest he offered to take charge of them, and pledged himself, on condition that he could use as much meal as he wanted, to get the birds ready for market at eight weeks old. His offer was accepted. He at once placed the hen in a coop near a small pool, and there the Ducklings remained until they were sold. Bread-crumbs, hard-boiled eggs, and curds were used for a few days, after which nothing but Barley-meal was given, and on this the Ducklings were made fit for the table by the time stated. Such cases are perhaps exceptional, especially with Ducks kept by ordinary farmers. Still, it is surprising what can be done in a short time if constant attention be given. It is in something the same way that fowl keepers to go to work. Supposing the eggs used for sitting are laid about the same time, and are fresh, the whole should hatch on the twenty-eighth day within a few hours of each other. If the Ducklings are hatched by a hen, as is probably the case, I should remove them from the nest when they are about twelve hours old. Nothing will be gained by delay unless some of the Ducklings are not thoroughly dry. Their first meal should consist of hard-boiled egg and bread-crumbs. Very little will be eaten for a few days, but as soon as the Ducklings begin to pick, oatmeal may be given; and this may be followed by Barley-meal and sharps mixed together. The whole of the meals should be mixed into a stiff dough, which will break when thrown in the ground. As regards water, use as little as possible. According to my experience, the more water the Ducklings have the longer they are in getting fit for the market. They thrive best when kept on a dry grass run. No special fattening is necessary if the birds are well fed throughout, but scraps of meat, liver, Potatoes, &c., may be mixed with the meal, and are all good foods when this used. The Aylesbury breeders, who send an enormous number of early Ducklings to London every year, use boiled meat and greaves in addition to the meal. Their birds are speedily made fit, and fetch very high prices. After the Green Peas are done with Ducklings decline in price, and, in my opinion, pay but little, if anything, for rearing.

Seasonable notes.—The last month of 1893 having run its course, it is time for the poultry breeder to look forward, and begin to make arrangements for the next hatching season. If fresh blood be wanted, cocks or cockerels should be purchased without delay, so that the breeding-pens may be at once made up. This is particularly necessary where very early chickens are required for exhibition purposes. Even among ordinary stock kept to supply eggs and fowls for home consumption the same foresight is needful, for if eggs are to be forthcoming next November and December pullets must be hatched in March and April. The birds which are now laying should be well fed, and kept warm at night; attention should, therefore, be given to the fowl-house. All birds not wanted, whether cockerels or pullets, should be killed or sold at once, so as to get the chicken-runs in good condition for the spring broods. If the cockerels run with the ordinary stock there is the more reason for parting with them, for they worry the pullets, and lose flesh themselves.—D.

5262.—**Poultry keeping.**—Will someone kindly tell me whether it is injurious for hens to be kept in the dark when sitting, and also which is the best food for laying hens at this season of the year? My fowls are left to go where they like in a field, but at night one of the hens refuses to come back to the poultry-house. What is the remedy for this, as the hen in question is then exposed to the cold night air?—KIRRY DENNIS.

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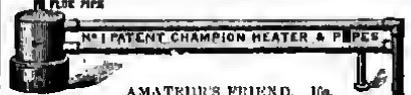
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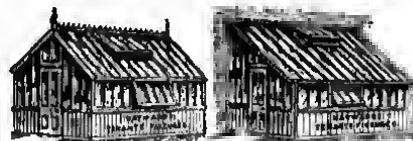
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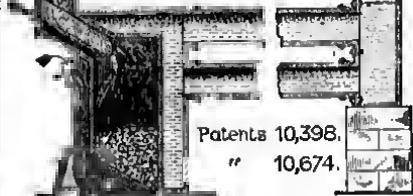
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7 ft. long 5 ft. wide	£2 16 0	7 ft. long 5 ft. wide	£2 8 0
9 ft. " 6 ft. "	4 0 0	8 ft. " 5 ft. "	2 16 0
10 ft. " 7 ft. "	5 0 0	10 ft. " 7 ft. "	4 10 0
12 ft. " 8 ft. "	6 0 0	12 ft. " 8 ft. "	5 10 0

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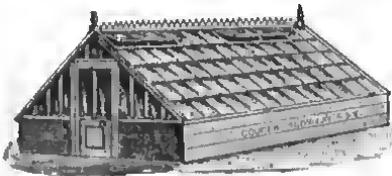
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The utility of such a house for forcing or cultivating cucumbers, tomatoes, melons, &c., will be perceived at a glance, it being a structure constantly in request but almost hitherto unknown.

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Lot.	Length.	Width.	Height.	Usual Price.	Sale Price.
1 to 7	7 ft.	5 ft.	7 ft.	£2 10 0	£2 0 0
8 to 10	8 ft.	5 ft.	7 ft.	3 0 0	2 5 0
11 to 13	9 ft.	6 ft.	7 ft.	4 0 0	3 10 0
13 to 23	10 ft.	7 ft.	7 ft. 6 in.	4 10 0	3 10 0
23 to 29	12 ft.	8 ft.	8 ft.	5 10 0	3 15 0
30 to 41	15 ft.	10 ft.	8 ft. 6 in.	7 15 0	5 10 0
42 to 49	20 ft.	10 ft.	9 ft.	10 15 0	7 10 0
49 to 51	25 ft.	10 ft.	9 ft.	15 5 0	10 0 0
52 to 54	30 ft.	10 ft.	9 ft.	27 0 0	20 0 0
55 to 56	100 ft.	10 ft.	9 ft.	45 0 0	25 0 0

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The houses are fitted with a half-glass door, complete with rim lock, brass fittings and key, and is supplied with lattice staging for each side, footpath the entire length; gutters, downpipes, suitable ventilators, and necessary ironwork for opening same.

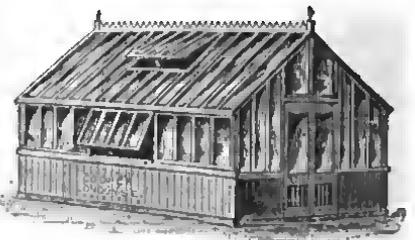
All woodwork painted two coats of good oil paint, glass cut to sizes, and all parts securely packed on rail. Prices.

Lot.	Long.	Wide.	Hlgh.	To Eaves.	Usual Price.	Sale Price.
343 to 351	9 ft.	6 ft.	7 ft.	4 ft. 6 in.	£7 10 0	£5 10 0
352 to 359	12 ft.	8 ft.	8 ft.	5 ft. 6 in.	10 0 0	7 0 0
359 to 363	15 ft.	8 ft.	8 ft. 6 in.	5 ft. 6 in.	12 0 0	8 10 0
364 to 371	20 ft.	9 ft.	9 ft.	6 ft.	16 10 0	12 0 0
372 to 377	25 ft.	9 ft.	9 ft.	6 ft.	21 0 0	15 0 0

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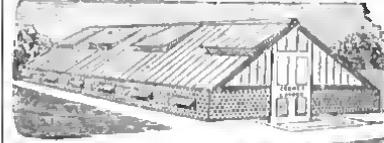
Made especially for Amateurs at a nominal figure, thereby enabling within reach of those who require a strong but inexpensive structure, and being constructed in complete sections, are erectible by any handy man or gardener in a few hours. Framework is substantially constructed of red deal, the lower part being fitted in with well-seasoned tongued and grooved matchboards. The house is fitted with door complete, with rim lock and brass furniture, painted one coat of good oil colour, supplied with all necessary ironwork and sashes for each side and good 15 oz. glass through out. All parts securely packed and put on rail. Prices:



SPAN ROOF

Lot	Long.	Wide.	Hlgh.	To Eaves.	Usual Price.	Sale Price.
57 to 71	Span roof 7 ft.	5 ft.	7 ft.	4 ft.	£2 16 0	£2 5 0
72 to 73	"	8 ft.	8 ft.	4 ft.	3 10 0	2 15 0
77 to 108	"	9 ft.	9 ft.	4 ft.	4 0 0	3 0 0
109 to 121	"	11 ft.	7 ft. 6 in.	4 ft. 6 in.	5 0 0	4 0 0
122 to 149	"	12 ft.	8 ft.	5 ft.	6 0 0	4 10 0
150 to 170	"	15 ft.	10 ft.	5 ft.	8 10 0	6 10 0
171 to 176	"	20 ft.	10 ft.	5 ft. 6 in.	12 0 0	9 0 0
177 to 184	"	25 ft.	10 ft.	5 ft. 6 in.	17 0 0	12 0 0
185 to 189	"	30 ft.	10 ft.	5 ft. 6 in.	21 0 0	13 0 0
190 to 197	"	100 ft.	10 ft.	5 ft. 6 in.	50 0 0	34 0 0
198 to 201	"	30 ft.	10 ft.	8 ft. 6 in.	29 0 0	14 0 0
202 to 211	Lean-to	7 ft.	5 ft.	4 ft.	2 9 0	2 0 0
212 to 221	"	9 ft.	7 ft. 6 in.	4 ft.	3 10 0	2 15 0
222 to 225	"	12 ft.	8 ft.	5 ft.	5 10 0	4 0 0
226 to 228	"	15 ft.	10 ft.	8 ft. 6 in.	8 0 0	5 15 0

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Specifications.—Built for brickwork, 3 ft. high, of thoroughly well-seasoned red deal; roof

Lot	Usual Price.	Sale Price.
229 to 235	13 0 0	10 0 0
236 to 242	14 10 0	11 0 0
243 to 248	17 0 0	12 0 0
249 to 255	21 0 0	16 0 0
256 to 257	25 0 0	20 0 0
258 to 260	40 0 0	25 0 0
261 to 267	43 0 0	28 0 0
268 to 281	55 0 0	40 0 0
282 to 287	4 9	3 3

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GREENHOUSE PLANTS FROM SEEDS.

There are several very useful greenhouse and half-hardy plants which do not come to perfection during the first season unless sown early in the year. The following may be named among others: Begonias, Streptocarpuses, Lobelias, Petunias, Gloxinias, Tarenias, Verbenas, and Amryllids. Unless sown early we do not get these in their full beauty until the season is waning. Too much stress cannot be laid upon the benefits arising from the use of a good strain, whatever the subject may be which we are wishing to propagate. Nor can I call too much attention to the value of thin sowings. When sown thickly the resulting seedlings crowd one another and often damp off a short time before getting sufficiently large to handle. It is a good plan to make more than we sowing, or, at any rate, to divide the seed and notice how the first lot germinates. If you cannot afford to pay the price of good seeds from the choicer strains, try and persuade a friend to go halves with you, and so secure a small quantity of the best. A very little seed will produce a large quantity of plants if treated carefully. Inferior strains need quite as much attention and labour, and do not give nearly so much satisfaction as the results from a small number raised from a choice and carefully-selected stock. Most of the subjects I have named have very minute seeds, and much care will be needed when sowing them. Go over your ground more than once, scattering the seeds very thinly indeed. You will thus secure a far more even sowing. Lobelia, Gloxinias, Begonias, Petunias, and seeds of similar minuteness will be better if not covered with soil. Others, like Verbenas, Mignonette, &c., will need a very slight covering, more or less, according to size. It is a fairly good rule to cover them to a depth of about twice the diameter of the seeds. These not covered must be kept dark until germinated. This is a great aid, is safer, and avoids the sudden and fatal drying up of the very young plant when a few minutes' sun or a little neglect in watering occurs. In short, even the larger seeds are benefited by being covered over with some darkening material, and then gradually exposed to light after germination is complete. I always place a sheet of glass over such fine seeds as Begonias and Gloxinias, and then darken this. Very gentle bottom-heat will aid, and is necessary for these when sowing early. You cannot supply too much light to the young plants as soon as roots are penetrating into the soil freely, and it is a good plan to place them close to the glass, thus ensuring a sturdy growth. Half of the failures with seedlings really occur in their early stages; either from being crowded, or drawn up too quickly. Amateurs are also too prone to supply a rich compost. The tender little seedlings cannot assimilate strong food; we must wait until they are a trifle larger before affording them rich composts. Almost all seeds like the following mixture: Sand, loam, and leaf-mould in about equal proportions. See that good drainage is provided, and pay considerable attention to the

the pots or pans are filled. We must remember that it will be necessary to lift the seedlings directly they can be handled with facility; therefore, coarse and uneven soil will not be suitable. My own plan is to use a couple of different sized sieves or riddles. The roughest one are placed in the bottom of the pans, and the roughest from the smaller sieve placed upon that, finishing off with a well-mixed and uniform compost. When lifting the seedlings and we have no fear of breaking the roots—in fact, they come away with little balls, and move without much appreciable check, I have had greenhouse subjects more particularly in mind while penning these notes, but it will pay well to follow the list of them when sowing Asters, Stocks, or any other seeds. P. U.

CHRYSANTHEMUMS.

Naturally-grown Chrysanthemums.—No doubt there are different ways of defining a naturally-grown Chrysanthemum plant, but what I especially allude to now are those plants which are allowed to grow unchecked without topping the shoots or in any way limiting their number. Such plants as these are seen at the shows in Belgium, and very effective they are, being as suitable for the home decoration of the conservatory as they are for forming groups at an exhibition. The height of such plants varies according to the variety, ranging from 3 feet to 6 feet. I do not remember to have ever seen plants of this class at an English show, where I am sure they would be welcome if of the same quality as those grown in Belgium. The only point about these that interferes with their strict natural growth is that the flowers are limited to one on a shoot, the number of blooms to each plant varying from thirty to sixty. Varieties like Elaine, Val d'Audorré, or, indeed, any of the reflexed Japanese, are the most suitable for this form of culture, they being, as a rule, of dwarf and medium height, generally with stout stems. The blooms are also self-supporting, having stout peduncles. Pots 9 inches and 10 inches in diameter are large enough for any variety. Cuttings should be rooted early in the year, the plants shifted into larger pots as required, and given abundance of room for a full development of the foliage and shoots. When the plants make their first natural break in April or May, according to the variety, instead of restricting their number to three, as in the orthodox method, where three large blooms are required, the whole of the shoots except the very weakest at the bottom are allowed to grow. Again, in August, when the second break takes place, the number is again increased. Each shoot is then allowed to carry one bloom, which will be a terminal one, or if more are required, the buds need not be removed, as many will cluster at the tips of the shoots. If fairly large blooms are wished for, one on each will be quite enough. One stout stake to each plant will suffice as a support for all the stems if these be loosely secured, it being possible to tie them that the heads will not

have a formal appearance. It is most essential that the foliage be preserved in good condition, as upon this much of the appearance of such plants depends.—E.

25th. — Open air Chrysanthemums.—I have recently dealt with this subject, but give again a brief selection. For September six good varieties would be, first of all, Mme. Desgrange and its sports (but commence with the type, a very free and beautiful flower), M. Gustavo Gruenerwald (delicate pink, passing to almost white, a new and very charming kind, which has not been inaptly called a pink Mme. Desgrange), La Vierge (pure white, dwarf, and very free, the plants quite a mound of bloom), Alice Butcher (red, shaded orange), Golden Shah (yellow, a hybrid Pompon kind), Lyon (deep rose-purple), Mme. la Comtesse Foncher de Carcil (orange-red, a very free and pleasing variety), and Wm. Holmes (crimson). These I have seen all succeeding well in the open, as I have made special note of kinds for this purpose during recent years. November and December may be grouped together, as few kinds bloom naturally in December, and these are really November varieties. Select, first of all, Cottage Pink, a kind one sees largely grown in cottage gardens, the flowers light-purplish in colour, and produced with great freedom, a sturdy, vigorous kind, resisting well rains and fogs even; Jardin des Plantes (yellow, a bright and showy flower), Jules Lagrevie (deep purple-rose), Mrs. Rundle, the old Triomphe du Nord, and Golden Beverley are of note. Not many kinds really succeed well late in the year, and then the plants must be grown always in the open. The highly-fet plants in greenhouses soon suffer when exposed to the weather.—C. T.

— Without some protection Chrysanthemums cannot be depended upon to flower outdoors during the months of November and December. Last season proved this fact very conclusively, the severe frost which occurred on the night of November 17th just about crippled the flowers for the year. During some seasons the plants go on flowering quite up to the second week in December; but, of course, these are exceptions. Undoubtedly a wall with a southern aspect affords the greatest security from frost for plants wholly grown without glass. Where nothing but the open border is depended upon, the best plan is to select early-flowering varieties, and obtain from these a full crop of flowers. It is almost useless to attempt to grow the incurved section, the natural formation of their florets is all against their withstanding adverse weather. The incurved petals are natural receptacles for the collecting of moisture, and in this state the blooms are more easily injured by frost than when they are comparatively dry. Varieties belonging to this Reflexed section are the most suitable, the natural imbricated form of their petals prevents moisture collecting amongst them. The following varieties are suitable for the purpose indicated: Mme. C. Desgrange (white, with cream centre when opening), G. Wernig (primrose-yellow), Mrs. Hawkins (bright yellow), Leon Lassali (white, primrose centre while expanding), Blushing Bride (bright rose-like, fading to blush), Alice

Butcher (red, shaded orange), Flora (deep golden yellow), Lady FitzWygram (white, dwarf habit), Mrs. Cullingford (white), President (maroon), Empress of China (silvery pink), Gullien Christine (golden buff), Temple of Solomon (yellow), La Vierge (creamy white), Elsie (canary yellow), M. E. Pynaert Van Geert (deep yellow, flushed red), Pierce's Seedling (bronze, passing to yellow), Procoëtis (yellow), Wm. Holmes (red, tipped gold), Alexander Dufour (rosy purple), M. Gustave Grunewald (soft pink, passing to bluish white).—E. M.

GARDEN WORK.

Conservatory.

It is a very great advantage, both for the welfare of the plants and also for effective arrangement, to change the position of all the plants occasionally, and as far as possible group the various families together. A Cyclamen or a Dendrobium is not much alone, but a group of other of the plants named, set off with appropriate foliage, attracts attention at once, and graceful foliage is as necessary as flowers. Most of the Acacias have pretty foliage; Camellias have good foliage, though there is no grace or elegance in *Hamamelis-leucoc.* There is something striking about healthy, well-grown Camellias; but they are under a cloud at present; they will come back in favour in the future. The places of the Camellias and Oranges have been taken by Palms and Tree-Ferns. How very pretty and fragrant a good-sized group of Freesias are now mixed with a few Maiden-hair Ferns in 5-inch pots! Camellias have flowered well, both trained on the wall and also as bushes in the border, and a good-sized plant makes a grand show for several weeks. I have been cutting a few Tea-Roses, including an old *Marshall Niel* or two, the flowers being much deeper in colour than is seen in spring. Tea-Roses planted in a large, lofty house, where there is room to strike out, are never altogether without flowers; and I have noticed they grow and flower freely in the beds prepared for Camellias, in which a good deal of peat and leaf-mould has been mixed with the loam, the latter being very fertile—in fact, only the best admitted from the conservatory for this special purpose. In making new beds in conservatory, if leaf-mould is used it is necessary to pick out all fragments of stick; the best way is to pass the leaf-mould through an 1/4-inch sieve to take out sticks and stones, if it contains any. Stones may be harmless, but bits of wood frequently introduce a fungus among the roots which often does serious harm. It takes some time to work plants round in condition again after having the roots attacked by fungus in the border. To get rid of fungus in a border, thoroughly saturate the soil with weak root-water. More than one or two waterings will be necessary.

Forcing-house.

It is a mistake to use too much heat, especially at night, during the very short days; 65 degs. at night will be high enough for all kinds of forcing. Berries should be plunged in the hot bed as soon as the buds have made some roots; without the bottom-heat the flowers will not be so fine or quite so fragrant, propagating may begin as soon as cuttings of the various plants required can be had. Cuttings of the young shoots of Tree Carnations will not now in almost sheer sand be kept quite moist, but must be potted off as soon as rooted. Keep young Chrysanthemums, Melons, and Tomatoes steadily moving on. The bunches of Grapes on the vines must be reduced in number, leaving about six bunches on a strong vine. Thin the berries as soon as it can be seen which are taking the lead. Vines in bloom must have a little assistance in setting; shaking the rod or drawing the hand gently down the bunches will disperse the pollen. Do not give stimulants till the berries are set and swelling; liquid may be given to Roses in pots as soon as the blossom-buds are visible. If the syringe is used freely there will not be much trouble with insects. Dust the first sprouts of milk with black sulphur. Cut down *Bananas*, which have done blooming, and keep rather dry till the buds break. Young shoots make good cuttings.

Tomato-house.

Everything in the house must be perfectly sweet and clean. If Tomatoes have been grown in the house before, sulphur fumes, raised by heating a plate of iron red-hot and scattering a handful of sulphur over it, will destroy all fungus spores; but the house should contain no plants when sulphur is burnt, as the fumes will destroy every green leaf and shoot. If the house is intended to be forced, the border should be trenched up and got ready for planting. All Tomato-houses should be heated; the crop will pay for it, as when the season advances the price soon drops. Tomatoes have been grown several years in the same beds without changing the soil, but after the third year some of the soil should be changed, if possible, though a good dressing of soot, lime, and salt has a purifying and invigorating effect. When boxes are used to set the plants the soil will be changed annually.

Orchard-house.

If not already done, the trees in pots should all be returned to the house and have the necessary pruning and re-heating. Any trees in small pots may be shifted into larger ones, but such work should be done in autumn. More trees may be started in the house than there will be room for; it is always some of the late Plums may be plunged outside to ripen fruit end of June.

Mushroom-house.

Continue to make up new beds to replace those which are exhausted. Very often an apparently exhausted bed may be revived by a good soaking of warm liquid-manure. In which a little salt will be dissolved. On cold nights now, if the temperature falls below 50 degs., fires must be lighted; up to the present very little fire has been required. Bring on fresh batches of *Seakale* and *Rhubarb* roots as required. Chloery will also be required now.

Cold Frames.

Calciclarla-cuttings will be quite safe covered with mats or a little loose litter scattered over the frame. Frames containing bulbs plunged in ashes should be sheltered if severe frost, so also must Auricula and Carnation-frames. Remove all decaying leaves or other matter from Auriculas. In damp frames a few dry, sifted ashes scattered about will be useful. The plants will not require much water now; whatever is done in watering should be done on a mild morning when the lights can be left open for some hours. To winter frost plants in a frame, unless the weather is very severe, it is not so safe to cover them, but the average person fails. Damp is more to be dreaded than frost; it is comparatively easy to keep out frost by increasing the weight of covering, but damp is an insidious thing, and destroys the tissues without any warning.

Window Gardening.

Cleanliness is always important, but more especially so just now. Moss or weeds in pots are evidences of neglect; dust on the foliage tells a similar tale. The more pain one takes with window plants the more they seem to enter into and form a part of our lives, and it is here where the pleasure and interest of plants in rooms and windows come in. Very little water is required now, and none should be given during severe frost.

Outdoor Garden.

Sparrows, where numerous, often do a good deal of mischief, especially to Carnations. Sometimes it is necessary to net the Carnation-beds, or run cotton threads over them, to keep off the sparrows. White Flies, both *Mrs. Stinks* and others, may be pulled to pieces and replanted any time during open weather; but the sooner the work is done now the better. In planting the slips or pieces cover all the old stems, and press the soil firmly around them. Old stools of Carnations may be treated in the same way. The important matter is to make firm and cover all the old stems. A mulch of old leaf-mould, or old *Mindroom*-beds broken up fine, will be a great help; this mulch will be very useful to many things, such as Rose-cuttings that were planted early in autumn, and which are now getting callused, and will soon be forming roots. Cuttings of *Hesperis*, *Deloselinis*, *Flowery Currants*, *Aspidinths*, and most deciduous shrubs will strike now if planted truly in a shaded border. If it is not convenient to plant finally yet, prepare the cuttings and lay them in till they can be planted, the wounds will be healing. This is a slow process, and cannot be hurried. This is the reason why late cuttings often fail, the March winds blow before the cuttings are callused, and the cuttings die. I notice in one of the seed lists that to hard that seeds of the *Potulana* Roses are offered. There is a failure before these little Roses, not for exhibition, but for growing in the garden. They are always in blossom, and a best thing enough to cover the ground would be always interesting.

Fruit Garden.

A good deal of pruning still remains to be done, but I see many a striking effort to fetch an arrears. One of the greatest mistakes the pruner can make is to cut away, as I see some are doing, all the young wood. If ground Apples and Pears stamped right back to the old wood annually cannot bear good fruit year after year. They produce blossoms, but the blossoms or young fruit always fall, and I perceive one or two fruits hang on till the end of the season, there is no flavour; one ought to see well as *Tartan*. How can it be otherwise? It is not the man with the knife or shears? This is no fancy picture; in spite of all that has been written of the folly of over-pruning, it is still done to a very great extent, especially in villa gardens. In dressing Vines and cherries, in which there ought to have been a little mildew present last spring or summer, it would be advisable to burn a little sulphur in the house, if there are no plants in the house. Of course, the fumes of the burning sulphur will kill any green thing, though it will not injure the Vines if the canes are well ripened. If the sulphur cannot be applied by burning, paint the house inside or clean the plant with soap and water, and apply hot lime-water, in which half-a-pound of sulphur has been mixed, to the walls, and then paint the roofs with the following mixture: Sulphur, half-a-pound, one pound each of lime and soot, and sufficient clay to make it stick. Make it into a thin paint with soft soap and water, or Sunlight-soup will do as well.

Vegetable Garden.

No time should be lost now in sowing early Peas and Beans. If the weather and the soil are both suitable, select the warmest site available—the south side of a wall or building is the best place. Where there are borders in front of lean-to forcing-houses, they are excellent positions for sowing on early crops of vegetables, such as Peas, Potatoes, Horn Carrots, Radishes, Cauliflowers, Lettuces, &c., and if there is a garden anywhere without its early border, set about making one without delay. Shelter is a great deal, but it is not everything. There must be depth of soil, and the soil, the whole of its depth, must be rich. Bright sunshine may not be a good thing if the roots are starved, and it should be the cultivator's object to see that the roots have all the food they require. We are well on in the new year, and *Tomatoes* and *Melon* plants will soon be required in warm-houses, and pits, and frames. *Lockie's Perfection* is one of the best *Tomatoes* to grow for a private garden and also for market. The *Telegraph* is undoubtedly of first-class flavour, and bears freely, but it will not continue to bear so well all through the season as *Lockie's Perfection*. The *Telegraph* will be showing signs of exhaustion before *Lockie's* has half run through its energy. Sow *Tomatoes* for planting in warm-houses, or strike cuttings from plants in bearing, though I am not much in favour of cuttings at this season. There is never too much vigour in a *Tomato*, unless too much manure has been used. Sow a few *Lettuce* seeds under glass. E. HOEDAY.

Work in the Town Garden.

The advent of the New Year has been marked by a change to severer weather, which, if it continues, will put a stop to all outdoor work, and render the most important part of the indoor routine that of keeping up a genial temperature. It is not so much a matter of skill as it is necessary to be able to hit the right man in the matters of heat and moisture. It does not do to allow the thermometer to fall

too low frequently, even though frost be excluded, for town-grown plants do not possess the vitality of those reared in the country; while, on the other hand, any excess of heat excites an undue amount of growth in comparatively hardy subjects, which weakens them considerably. In the town greenhouse—average temperature 45 degs. to 50 degs. will be found most suitable for the majority of greenhouse and bedding plants at this season. As regards watering, the best rule to go by is to keep things comparatively dry in cold weather, and more especially so in a low temperature; but when much fire-heat is used evaporation is almost as active in some houses as if the sun shone, and unless a fair amount of moisture is supplied many plants will soon suffer. It is almost too soon yet to begin propagating where there is Heliotropes, Anemones, and others should be placed in heat to furnish cuttings. Prune them lightly into shape beforehand, and keep them rather dry at the root until fairly started, but syringe them frequently overhead in fine weather. *Tomatoes* that flowered early and have had several weeks' rest in a temperature since may be similarly treated with a view to secure some early cuttings; but any that may have been kept in heat to bloom until Christmas must not be so treated. Take cuttings of *Lobelia* as fast as they can be obtained, for if left too long the plants frequently die away altogether at this season. Even if the stock of old plants is lost it is an easy matter to raise a fresh one from seed, and Sutton's dark-fine *Lobelia* comes as even, true, and good from seed as any named kind. This is a good time, where there is a nice bottom-land bed, to take root cuttings of the graceful and useful *Ornangus*, of which the green-leaved varieties, such as *D. Juliana*, *D. australis*, &c., are excellent town plants, and will stand almost as much smoke, dust, and neglect as the notoriously hardy *Aspidistra*. Fern spores sown this month or next usually succeed better than if left till later, and such seeds as those of the *Indian Feather*, *Pteridium*, *Centaurea*, and *Mintulus* ought also to be started in good time. R. C. B.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary from January 13th to January 20th.

Made up hot-beds for Potatoes and other things. I generally make these up in blocks, a block being wide enough to carry two lines of frames. Cucumbers, Melons, and propagating may be done in the frames at the back where the bed is highest, and the frames in the front can be used for Potatoes, Carrots, Radishes, Lettuces, &c. This economises the heat, and the beds are more lasting. Finished laying out the seed Potatoes to sprout. A few rows of *Sharp's Victoria*, a white early kidney, have been started on early border in front of a forcing-house. Where some warmth is borrowed from the house the Potatoes will be protected when they come up. I have generally dug early Potatoes from this border before the frame Potatoes are all finished. The autumn-sown Peas have propped by the mild weather, and have come up, and at present look strong. Other Peas have been planted for succession, and I have generally sown some best to make sure. Re-potted a number of *Gloxinas*, which are just starting into growth, and placed on a shelf at the back of the house. They always start away well on this shelf, the warmth just sitting them. Put in more *Chrysanthemum* cuttings. The earliest cuttings are now rooted, and are taken out of the propagating frame and placed on a stage in a light position. If they are enough is used in the *Chrysanthemum*-house to keep out frost, as I want the plants to be sturdy and hardy. Shredded soil among the spring-sown plants in the beds. The frost does not lay hold of the soil surface in the same way it does a hard-bitten crust, and has not the same lifting power, consequently, does not do so much harm. I have still plenty of *Vetch's* self-protecting Autumn Broccoli sowed away safe from frost. Filled in beds in the summer-house with warm manure; the plants are ready, and as the soil is warmed through the plants are set out. *Lockie's Perfection* alone will be planted in the house, and *Telegraph* and *Tomatoes* sown last August. Cleared out plants from the conservatory, and filled up with plants from the forcing-house. Many things are coming on now, including a large batch of *Freesias* and other bulbs, *Stauved* and ridged ground for *Melons*, and trenched up a piece of ground for early Potatoes, to be followed by Strawberries. The latter will be planted early in August. Trenched a piece of ground to be laid out as a strawberry, and planted with some nice bedding. Re-laid Box-edging and turned over gravel paths. Cut down and removed several *Sycamore* and other trees which are injuring plants and other better trees growing near, and thus involved a rearrangement of the undergrowth. Instead of planting in mixtures, the *Laurels*, *Yews*, *Boccs*, *Aucubas*, *Berberries*, *Hollies*, &c., will be grouped together. This will, I think, make a desirable change. Potted more *Tuberose*.

Day Lilies in pots.—Where a greenhouse or conservatory has to be kept gay at all seasons as much variety as possible consistent with a good display of bloom is generally the object aimed at, and among plants that give very little trouble and at the same time afford a pleasing variety to the usual occupants of the greenhouse may be named the different forms of *Hemerocallis* or Day Lilies, more especially the clear golden-yellow *H. flava*, which is such a general favourite. Good flowering tufts of this reach a height of about a yard, and though the individual blooms only last a short time, a succession is kept up for a considerable period. The dwarf-growing *H. Dumortieri*, whose flowers are of a deep-orange hue, tinged on the exterior with bronze, is also well suited for this treatment, and so is *H. Thunbergii*, the blossoms of which are of a light yellow, more than those of *H. flava*.

In cold or northern districts the operations referred to under "Garden Work" may be done in tendency to a fortnight later than the hints indicated, with equally good results.

The stronger-growing kinds, such as *H. fulva* and *H. Kwanso*, with their double-flowered forms, are not so useful for flowering under glass. The variegated-leaved variety, when in good form, is, however, wonderfully pretty, and with a little protection the variegation is very clear and decided. For flowering these Day Lilies under glass very little preparation is necessary, for where there are clumps established in the open ground they may be lifted, potted into suitable sized pots, and placed in a cold frame, all that is needed being to water when necessary. As the roots get active a little liquid-manure will be beneficial.—H.

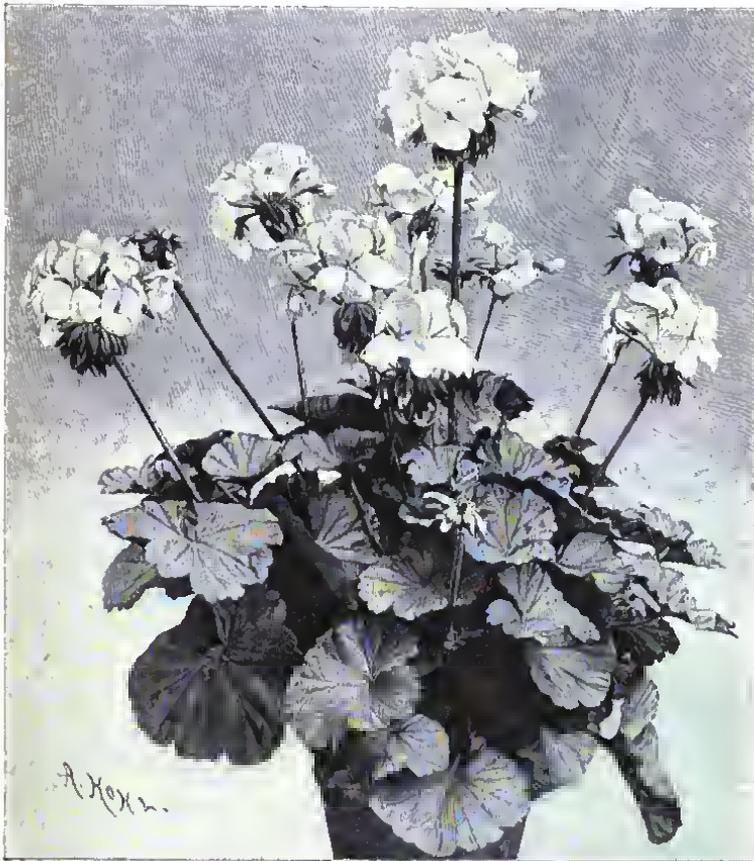
INDOOR PLANTS.

ZONAL PELARGONIUMS FOR WINTER FLOWERING.

It is very easy to strike cuttings too soon in the case of these "*Ceraniums*" (a name which I must

struck in 2½-inch pots, which are quite large enough, the first shift should be into 3-inch pots, which will give ample room for a good start. As soon as these are filled (not pot-bound) with roots, 4½-inch pots should be the next shift, and thence into 6-inch pots, and the largest into 7-inch pots later on if desirable. In any case, however, the pots should be thoroughly well filled with roots by the end of August, leaving September for the ripening of the wood in an exposed position. By the end of the latter month the plants should be brought under cover into a dry house or pit where ventilation can be given as freely as possible by night as well as day. When there is the slightest suspicion of damping, or the atmosphere appears to be moisture-laden, some warmth should be applied to keep it dry and buoyant. This warmth will also assist in the development of the flower trusses, and is really necessary to obtain the best results. A night temperature at that time of from 45 degs. to

three will be better. This should give from ten to twelve good blooming shoots by the time they are required. In any case, rather than have to pick out the first flower trusses when formed too early, it is much better to stop once more, provided there is time, than thus to waste the energies of the plants to no real purpose. Any assistance in the way of manure should be deferred until the plants are showing for flower. In this there is one essential object to be aimed at which oftentimes is lost sight of by cultivators; it is that of keeping in check a too rank development of leaf growth, which serves no actual good. There is such a host of varieties in cultivation that it is a difficult matter to really select just a few as the very best of each colour. *Niphetos*, the white variety now illustrated, stands out, however, as one of the very best of the pure-whites. The growth is dwarf and compact, the leaves never large under careful treatment, whilst it is a profuse-flowering kind. It is also well suited for bedding out-of-doors in dry positions. *Swanley Single White* is also a good variety of dwarf branching habit. Of the crimson Lord Rosebery and *H. Cannell Junior* are two of the best; *Lord Chesterfield*, a soft magenta, is a grand variety. In the salmon shades, *Mrs. Robert Cannell* and *Lady R. Churchill* can be strongly recommended. As a dark pink *Maud of Wales* should be noted, as should *Mrs. Wildsmith* of the rose-pinks. Of the bluish-coloured kinds, *Lady Brooke* and *Bridesmaid* are two capital kinds. Another good one to complete a dozen is *Marquis of Dufferin*, a crimson-magenta, also a free-flowering variety. *Niphetos* (here figured), belongs to the *Nosegay* section. As its name implies, the flowers are pure-white, never becoming tinted under the strongest sun. It is the freest and most persistent bloomer of the whole family. I have had plants in bloom continuously for two years in 6-inch pots, with an occasional top-dressing of some plant food. G.



White Zonal Pelargonium "*Niphetos*."

confess I still prefer to that given as the heading) in more ways than one. Firstly, when propagated early, the growth is much under less favourable conditions and is no real gain in point of time; secondly, in striking them early there is every possibility (in private establishments at least) of the young plants being crowded together through want of room by reason of the bedding plants taking up so much space. In this way all receive similar treatment, whereas those now under notice should have as favourable a position as can be accorded them, even from the time of striking the cuttings. In striking the cuttings, it is better to insert each singly in a small pot to prevent the earliest growth from becoming drawn, as well as to avoid a check in the first potting off. A frame or pit with a moderate warmth, and not any excess of moisture, will do well for propagating, or they may be struck in houses on shelves where a little shaded. When safely rooted, a lower temperature will be better in every way. Supposing the cuttings have been

50 degs. will give a good return in flowers, allowing, of course, a corresponding rise during the day. "*Ceraniums*," it should be borne in mind, do best in a dry atmosphere. They are also found to do in chalky soils out-of-doors. This should point to the fact that some lime-rubble broken up finely and mixed with the soil is good for them. Failing this useful article, some bone-meal will do almost as well, being easily assimilated by the plants, although it does not keep the soil quite so open. As to soil, nothing can surpass good fibrous-loam and the best of leaf-mould, one-fourth of the latter to three-fourths of the former being good proportions. Firm potting is decidedly the best, as it keeps in check any tendency to rank growth, which ought to be avoided. In the early summer, as soon as all danger of frosts is over, the plants should stand out-of-doors in a sunny spot upon a bed of ashes at a fair distance apart, as in the case of forced Strawberries in growth. Two stoppings at least will be useful if the plants have progressed in the best manner,

5250.—**Hydrangeas in pots.**—There will be no difficulty in flowering these by the dates you mention. They are naturally deciduous, so, of course, you lose the leaf, as you describe. Cut them back to the sound eyes near the base. Some will be more prominent than others, and it is these which will carry the finest heads of flower. Feed them well when growth is active, but do not repeat, unless in very small sizes now. Plenty of water, light, and an ordinary greenhouse temperature will grow them very well.—P. U.

— These should be pruned rather severely (see reply to 5245). After pruning keep them rather dry at the root for a time, but place them in a genial warmth, and syringe frequently overhead. When well in growth repeat them, and push them on with plenty of water and liquid-manure. They require free ventilation and abundance of light.—B. C. R.

5245 and 5250.—**Treatment of Hydrangeas.**—These plants make their growths and the flower-shoots the year previous to flowering; if they are weak no flower-heads will be produced. Although the flower-heads are produced from the growths of the current year, they will not flower if the wood is not vigorous and well ripened. Some persons have an idea that the pruning-knife is essential in the culture of all kinds of plants and trees, taking much pleasure in cutting and slashing. A well-grown *Hydrangea* makes stout, short-jointed young wood, and if it is too crowded cut out the weak growths in summer, but do not use the knife at all in winter.—J. D. E.

— Supposing the plant to be in a pot, and of large or moderate size, all the weak shoots or spray should be cut out altogether, and the strong shoots (of last year) be cut back to within two or three strong eyes of their base. If a very large specimen is wanted do not prune quite so hard, leaving the principal shoots about a third of their present length. Plants in the open ground may be treated somewhat in the same way, but as a rule they do not require nearly so much pruning as pot plants.—B. C. R.

— Your plant will need no more cutting than the frost will effect. Simply trim back to the sound wood in March. We should not get the grand specimens found in the southern counties if they were cut down to the ground annually.—P. U.

— *Hydrangeas* form flower-buds on the ends of the shoots, and if the plants are cut down there will be no flower. Plants of trailing, upright habit may be pruned, but not others.—E. H.

CLEMATISES IN POTS.

We do not often see these grown in pots now. Why, I cannot say. I remember some grand collections at the Royal Botanic Society's exhibitions, held some years back in Regent's-park, but for the last six or seven years an occasional well-grown plant is all I have seen in private collections. It is difficult to account for this when we bear in mind how easily the Clematis is grown, and how certain a bloomer it is. If the individual flowers do not last long in the open air, and show signs of being weather-beaten when wind and rain prevail, we can remedy this by growing them under glass. The double varieties will keep fresh for weeks, and are very useful as cut flowers during early spring. Some of the varieties found among the Patens and Lanuginosa classes are grand in size, form, and colour, while more than one of them are exquisitely scented. I think we may safely say that few plants will give more show for the same amount of trouble; nor can the amateur with an unheated or barely frost-proof house find a genus more suitable for spring and summer blooming. I am dealing with plants in pots only, so their grand qualities as climbers, both inside and out, must be left for a future note. One most

IMPORTANT ITEM when cultivating the Clematis is knowing to which class or section a variety belongs. Until we understand the characteristics of each section, we shall not be certain of success; therefore, we will look into this point at once. Clematises are divided into several classes, but the four most suited for pots are the Patens (see cut), Jackmani, Florida, and Lanuginosa groups, and I propose giving a note upon each. The Patens and Florida groups flower upon the matured wood of the previous season, and this must be borne in mind when pruning. Both of them produce huge growths from the base after having flowered. In order to increase the strength of these shoots it is well to cut away the two-year-old wood as soon as the blooms have been secured. It is a good plan to train the two or three long growths up the roof of the house. I tie them to a piece of string stretching from the pots to a parlin running through my house. There would be a considerable amount of attention needed to train the growths over a wire globe or trellis work as they grew, and I find the above plan much easier, besides affording more light to mature the wood. At any convenient time during the winter the plants are repotted and the wood trained around globes or not as desired, this being cut away after it has bloomed, and more young growths trained up the strings as before. If the room should be needed for other purposes, the Clematises may be stood out-of-doors after the middle of June, where they will finish their growth equally well. Do not stand them against a hedge and allow the growth to rattle among it, or you will probably have much difficulty in clearing the wood later on without injury.

A FEW GRAND VARIETIES among the Patens class are Albert Victor (deep-lavender), The Queen (delicate-lavender), Miss Bateman (white, with deep-rose centre), Fair Rosamund (bluish-white), and Lord Londesborough (a deep-mauve). These are all single and very large blooms. On the other hand, we find all doubles in the Florida class, and although we have Beauty of Worcester, from the Lanuginosa section, producing both double and single blossoms of a bluish-violet shade, the best double are Belle of Woking (silvery-gray), Conatess of Lavalace (silken), and Duchess of Edinburgh (pure-white). The last named is particularly sweet-scented and pure. In the Jackmani section we have a group which flower from the wood made early in the spring. The growths are long, like the Patens and Florida sections, but are produced earlier, and when their length is attained they commence blooming from the point backwards, giving flowers from almost every joint. When this growth has become it is of no further use, and may be cut down. In the meantime the plants may stand in any odd corner until their next lot of growth commences from the base, when they should be grown on as before. An enormous lot of bloom is produced by this class, and an 8-inch pot will carry enough wood to completely clothe a globe 3 feet or 4 feet in diameter. Jackmani superba (dark-purple), Jackmani alba (white), Jackmani "Smith's Snow White" is a grand addition sent by Messrs. R. S. & Co.

and Co., Worcester; Alexandra (pale-reddish violet), Gipsy Queen (velvety-purple), and Star of India (deep-reddish-pink) are only a few of the gems in this section. Treat this class as herbaceous perennial climbers.

THE LANUGINOSA SECTION make growth not quite so strong as the Patens and Florida varieties, but instead of flowering like them they bloom in succession upon short laterals from the long growths. We see that the Patens and Florida classes bloom on the wood made the previous season, after which it is useless. The



Flowering spray of Clematis patens.

wood of the Jackmani class carries a crop of bloom the same year, and may thus be cut down; but that of the Lanuginosas merely needs a few of the weakest growths to be cut away each spring, the stronger growths being left permanent. Otto Proebel is a sweet-scented white of immense size; Henryl is also large, perhaps the largest blossom in the whole genus. Alba magna (pure white), the Gem (deep-lavender), Blue Gem (a sweet curulean blue), and Beauty of Surrey (soft greyish-blue) are but a few of the numerous grand varieties to be found in this section. Grand new Clematises are being introduced yearly, and it is quite impossible to name more than a few in each of the above sections. I hope these few notes will have shown the immense importance of correct pruning when cultivating the Clematis, so I will close with a general hint or two on the whole genus. If small plants are purchased from the trade growers they may be shifted into 6-inch pots at once, using good dressings and a rich, loamy compost, having a fair sprinkling of 3-inch bones and soot. Clematises are very voracious feeders, and will benefit from liquid-manures when growing. They also like plenty of moisture from the time new growth commences until their wood is matured. The pots soon become crammed with roots, and unless a heavy mulching can be applied it is a good plan to repot them each other year. When this is being done pick out as much of the soil from the mat of roots as possible; nor need we hesitate to cut a good deal of their roots away where matted so extra thickly, as we often find them. The temperature of a cool greenhouse will suit them admirably, but they are also at home in almost a stove-heat. Few insects attack them, the chief pest being aphids, and these only when surrounding subjects are also troubled with them.

I. U.

5246. — **Veronicas in pots.** — These plants, when grown in pots, do not require more than a cool greenhouse temperature. In fact, some of them are hardy enough to stand through the winter in the open air in England. Their culture is very easy, as they are free-growing plants, making masses of fibrous roots when growing, and they must be shifted from one

flower-pot into another before they become what gardeners term pot-bound—that is, the roots matted round the inner surface of the flower-pot. The best soil for them is a compost of two parts good fibrous yellow loam to one of peat; a little decayed manure and sand should be added; not much, as the plants are likely to grow too rampant. Leaf-mould may also be used in the place of peat, if the latter cannot be obtained, as the Veronicas are not over particular as regards the compost used to grow them in.—J. D. E.

— These do not require more than a greenhouse temperature, and are excellent plants for the amateur to grow, as they are not difficult to cultivate, whilst they bloom freely through the autumn and early winter months. It is a pity that more interest is not taken in this class, as there is no lack of variety, many with flowers of beautiful colour. One of the best is V. Andersoni, which has dark-green leaves and blue and white flowers in dense spikes, whilst the variegated form is quite a foliage plant, the leaves green, variegated with creamy-white, a very distinct and handsome variety. Blue Gem is dwarf, free, and the flowers bright-blue. Celestial (sky-blue), Impératrice (rich-blue), Marie Antoinette (pink), Evoline (rose-lilac, the habit of the plant in every way good), Diamant (deep-red), and Reine des Blanches (pure-white). In the more southerly districts of England, in Devonshire and sheltered parts along the Cornish coast, the plants are quite hardy, but otherwise must have the protection of a greenhouse. The best results are got from plants planted out during the summer months, and lifted when frost approaches and transferred to pots, keeping up a gay display in the greenhouse until Chrysanthemums are in full bloom. Suppose one is going to commence with cuttings, get these from half-ripened wood in the late spring or earlier. They will strike readily with a little artificial heat, and flower moderately well the first year, but really well the second season. If you have no opportunity of planting them out during the summer, they must, of course, be kept in the 5-inch or 6-inch pots in which they were placed at the final shift, but very careful attention will be necessary to keep the soil moist. If possible, plant them out in early June, loosen the soil a little round the ball, and plant out in rich, light soil, the best way of promoting a vigorous growth, and plenty of fibrous roots. One or two stoppings of the chief shoots may be given, but not after the first few days in July. At the latter end of August or early September, take up the plants and put them into as small pots as possible without unduly cramping in the roots. Six-inch, or even 5-inch, will, as a rule, be sufficient size for amateurs with small greenhouses.—C. T.

— These pretty plants (the shrubby varieties) are of the easiest possible culture, and succeed admirably with a minimum of heat, or even in a cold house, in either country or town gardens. Cuttings of the half-ripened shoots will strike readily in sandy soil in a very gentle warmth, or even under a close cloth frame or haultlight, at any time during the summer, or when a little harrier they may be inserted in the autumn, and will mostly form roots if only frost is kept away. The following spring they should be potted singly into 3-inch sizes, using good fibrous or sandy loam, with half the quantity of leaf-mould or peat; grow them on for a time under glass, but with plenty of air, pinch out the points once, shift into 5-inch pots when broken into growth again, stand them out of doors in August, and they will bloom beautifully in September, October, or later. I have some beautifully in bloom now (January 2) in a house from which frost is only just excluded. They thrive best with firm potting and free drainage, watering abundantly in hot weather, and not allowing them to become very dry even in the winter, as they are of an evergreen nature, and nearly always in either growth or bloom, more or less. Old plants should be moderately pruned in the spring, and repotted when they break into growth again.—B. C. R.

— These are easily propagated from cuttings, and grown into flowering plants in 5-inch pots in one season, if the cuttings are taken early in spring. The New Zealand Veronicas are fairly hardy in sheltered places, and the other species, of which Andersoni may be taken as the type, may be grown in a cool greenhouse.

In a mild season they will live through the winter outside. The same soil and treatment that will grow a "Geranium" or Fuchsia will grow the greenhouse Veronicas. Old plants may be cut back in spring and repotted when the buds break. These will make large bushes and flower to the end of summer and autumn, whilst the cuttings rooted in spring will flower in smaller pots.—F. H.

—A cool greenhouse temperature is very suitable for them, as they are not quite hardy, unless in a very warm and sheltered locality. Veronica Traversi is about the hardiest. A rich, loamy, compost will do them well. Keep them frequently syringed while not in bloom, and avoid too much heat with close atmospheres. Treat like other half-hardy shrubs.—F. H.

5278.—**Solanum Capsicastrum.**—The shoots must be well thinned out, for if much crowded they will be too weak to fruit freely. Stop the growth in May to make them bushy, and in June either plant them out again or shift them into 6-inch or 7-inch pots, and when a little established stand them on ashes in the open air. They make the best plants in this way, as the lifting checks them sadly. Give them plenty of water and liquid-manure in hot weather, and in September prick out the point of each strong shoot. Seedling plants never berry to any extent until the second or third year.—B. C. R.

5214.—**Carnation Souvenir de la Malmaison.**—The delicate petals of this beautiful flower are easily scalded by the sun when under glass, especially so when the flowers are rendered soft by the use of strong manures. Water will also cause this if allowed to get on the petals from drip or from springing.—F. B., *Witchester.*

MIGNONETTE IN POTS.

MIGNONETTE for early spring flowering may now soon be sown. Where only a limited quantity is required, a shelf close to the glass in a house where just sufficient heat is given to keep out frost will be the best position, or a mild hot-bed in a pit will bring the seed up quickly. In the neighbourhood of London or any place where fogs prevail, it requires some care to keep the early sown Mignonette from getting spindly and weak, and it is liable to dump off while in the seed-leaf. During bright weather a little warmth with plenty of air will be beneficial, but in dull, foggy weather it should be kept as cool as possible. Although the early-sown Mignonette requires a little extra care, it will well repay the trouble, for it will come into flower at a time when it is most appreciated, and last better than that which comes into bloom after the weather is warmer. Any plants that get too thin or straggling for flowering in pots will be useful for planting out. In growing Mignonette in pots it is essential that the pots should be filled firmly with a good, loamy compost, with which may be mixed a good proportion of well-rotted manure.

Soot should be mixed with the manure before adding it to the other compost; this will kill any worms or other insects. Old lime rubbish is also a valuable addition, especially for the early sowings, as it helps to keep the soil sweet. The seed should be sown fairly thick, and as soon as the plants are large enough they may be thinned out, but not too much at first. From six to nine plants in a 5-inch pot will be sufficient after the final thinning. Plenty of light and air is essential, but cold east winds are very damaging, and it will be better not to give air than to expose the plants to a direct east wind. As soon as the plants are large enough to require it they should have water round, and when they are an inch or from that to 2 inches high liquid-manure may be used, commencing with it well diluted and gradually increasing the strength. Great care should be taken that it is used in a clear state. I find a great difficulty in making young men understand that all liquid-manures should be allowed to settle down and never be used except in a clear state. Thick, muddy manure not only stains the foliage, but it forms a coating over the surface of the soil and effectually prevents capillary action and absorption. There are some

VERY DISTINCT VARIETIES OF MIGNONETTE, but names are rather misleading. The varieties may be divided into three distinct forms—viz., red, white, and yellow. In the red varieties the colour is given by the numerous anthers, the petals being of a greenish-white and inconspicuous; in the yellow the anthers are yellow,

and in the white varieties the petals are much enlarged, and the anthers are very small and sometimes entirely absent. Parson's White was the first distinct white variety, and although there are now many different names, I have not met with anything better than the original. The best and most distinct red variety is Vilmorin's grandiflora. I do not know the history of the yellow variety, Golden Queen. All the above may be obtained under various pet names. I may mention Macliet as another distinct form; this has very thick spikes of bloom of a greenish-white. This and Vilmorin's are the most popular for market work. While speaking of varieties I may allude to the curious double variety shown by Messrs. Bolehin and Sons a few years ago. In this variety the seed-vessels were superseded by lateral spikes of bloom, the lower ones running out to some length, the original petals much enlarged and white. A most interesting variety, but it can only be propagated from cuttings. H.

ORCHIDS.

CATLEYA AMETHYSTOGLOSSA.

The first plant which I ever saw of this was in the garden of H. P. Reichmuth, in the Tein garden outside Berlin. This was thirty years ago, and I afterwards saw it as a unique specimen in England in Mr. Warner's collection. Soon after this the Messrs. Low and Co., of Clapton, received a fine lot of it; but not many, I think, equalled Mr. Warner's plant. The Messrs. Low have every now and then large consignments of this Orchid, which keep it well before the public, for the beauty of its flowers commands it to everyone, and it appears to exist in very great quantities in its native place, so much so that I do not think this a variety of *C. guttata*, as some authors call it var. *Prunzi*. I rather here adopt the name given it, I believe, by Linden. The plant certainly has some resemblance to *C. guttata*, yet I think it is quite distinct. It has somewhat slender, erect, stem-



Cattleya Amethystoglossa.

like pseudo-bulbs, which usually attain a length of 2½ feet, and I have seen the bulbs reach 3 feet and more. These bear upon the points a pair of large leathery leaves, and from between these the scape appears, bearing many flowers, which vary much in size and colour in different plants. This might be expected from a plant that seeds freely and evidently grows in a spot well suited to the development of the young seedlings. The flowers each measure 5 inches or more across, the sepals and petals being nearly equal, thick and waxy in texture, creamy white, suffused with a tinge of rose and spotted more especially near the margins, with

numerous spots (not blotches) of rich rosy-purple.

THE SIDE LOBES of the lip are erect, in colour about the same as the ground of the sepals and petals, the tips reflexed and of a rich amethyst-purple. The middle lobe is of a rich and bright amethyst-purple. The flowers last in full beauty for a month, and they do not injure the plant if allowed to remain on for that period. I like to allow the plants to remain in the house in which the flowers open far better than to remove them to another, which is sure to be moister or drier, and to have some variation in temperature, either of which affects the duration of the flowers to a surprising extent. Its usual time of flowering is the spring months, but I have seen its flowers at all seasons. Last season I noted a very distinct and handsome variety flowering with Mr. Sander, of St. Albans, and this was not a recently imported plant either. It would be a desirable acquisition if we could ensure its flowering regularly at this dull time of the season. To grow this plant so that it will continue to make bulbs strong enough to bloom annually has somewhat puzzled the majority of growers. I usually find that it becomes smaller after about two or three seasons, and I am of opinion that it does not like such cool treatment as most of the *Catleyas* are subjected to. I think the best place to winter this is with plants of *Laelia clegans* in a house that does not at any time fall below 60 degs. If at any time the plant appears to be inclined to move too soon, it should be set where more air can play upon it, and it should be kept a little drier; but I am totally opposed to the roasting system which used to be applied to this family. G.

A good amateur's Orchid.—A really good Orchid for an amateur to grow in his collection is *Odontoglossum Rossi majus*, which will succeed well in either a pot or a basket. It is easily grown in the cool-house, and the flowers last in beauty for many weeks during the winter. They vary considerably in colour, but the variety *majus* is as good as any, the flowers borne in pairs, with white petals and sepals spotted with purplish-brown, whilst the lip is large and white, the crest yellow. It is an excellent Orchid for cutting, one of these richly-marked blooms making a good flower for the coat. In the smallest collection this should be grown for its beauty and easy culture.—C. T.

GARDEN REFUSE.

THE above term includes all that is supposed to be of little value in the garden, but which often gives the grower of choice vegetables and fruit just the materials required to mix with unsuitable soils. At no season of the year than now is there a better opportunity to secure these aids to enrich the soil, at the same time doing a vast amount of good by the removal of useless, often unsightly material. One of the best manures we have is wood-ashes, which most plants in a vigorous state like. At this period the quarters occupied by last year's crops will require to be got in readiness for the next season's crop, and in gardens of any age with plentiful supplies of manure failures often occur by clubbing, wireworm, and other insect pests. There is no better remedy than stepping the supply of animal manure and treating the soil to liberal dressings of wood-ashes, lime, or burnt garden refuse. In case any doubt exists as to the richness of the soil, wood-ashes may be used, adding a liberal quantity of guano, or the latter may with advantage be applied as a top-dressing. There is always from this date till late in the spring a wealth of material that may be converted into charred refuse, as all prunings, useless growth, stalks of Cabbages, Cauliflowers, or any of the Brassica tribe may be utilised for this purpose, and if a large quantity cannot be secured, certain quarters may be attended to, doing the worst each season. It is surprising what a mass of suitable material can be secured when means are taken to collect and prepare for this purpose. There is no better fertiliser than charred refuse for soils badly infested with wireworm, adding a small quantity of gas-lime. For Asparagus-beds in heavy clay soil the garden refuse, after having been placed in heaps with a liberal quantity of quicklime and turned occasionally, is of great

value. Leaves, which are often very plentiful, may always be turned to valuable account. They decay rapidly if placed in sunken pits or covered with soil and saturated with liquid-manure. Mortar rubble from buildings should always be utilised for fruit-trees, and if not required at the time should be stored for use when required. If there is any surplus matter that is not sufficiently decayed, allow it to get all the moisture possible, giving liquid-manure or drainings from manure heaps. This will soon be in condition, and may be used to advantage for such crops as Beet, Carrots, Parsnips, &c., later in the season. G.

OUTDOOR PLANTS.

TALL-GROWING WINDFLOWERS.

AMONGST the hundreds of hardy flowers grown in gardens, few genera are more popular than the Windflowers. They are pretty evenly distributed in temperate regions all over the world, and from the tiny vernal Windflower (*A. vernalis*) of our high Alps to the gigantic *A. Fannini*, recently introduced from Natal, where it blossoms from September to December, we have almost every gradation in height, habit, size, and colour of flowers. From the dazzling *A. fulgens*, through the magnificent and varied shades in *A. coronaria*, to the insignificant *A. pennsylvanica*, we have yellow, purple, blue, &c., all of them with a distinguishing character. The new *A. Fannini* has large, white, fragrant flowers, 3 inches in diameter, its leaves, when full size, measuring from 1 foot to 2 feet in diameter. It is said to have stood our winter in the open air, but we are not aware of its having flowered outside yet. It is, however, likely to prove a useful flowering plant in the cool conservatory, where it should be planted out in a light place and plenty of room allowed for development. Windflowers, as a rule, prefer deep, rich soil, light and gritty for the running kinds, and rather on the moist side for those from the high alpine pastures. If arohalde, they should never be disturbed. The majority of them are readily propagated by root division and by seeds, which they ripen freely in most seasons. These should be sown as soon as gathered, when they will quickly germinate, and a season thereby be saved. The following notes refer only to the tall-growing species known to us in cultivation:—

ALPINE WINDFLOWER (*A. alpina*), although one of the very commonest species in alpine districts, being found on almost every mountain in Southern Europe, is by no means so plentiful in gardens as one would suppose. This may in a measure be accounted for by its slow growth, its dislike to being disturbed, and the profructivity of its being what we call a short-lived plant. It is a variable species, and has a large and complicated synonymy, so many botanists having named the merest varieties and classes them as species. The most distinct variety known to us is one called sulphurea, *A. alpina* var. *apifolia* of the botanists. The flowers in this plant are pale-lemna or sulphur. It makes a charming border plant, beautiful in flower and also in seed, the bunches of long feathery tails being very effective in autumn. The type grows from 1 foot to 2 feet in height, forming long strong roots, which require a deep soil well drained, and with a quantity of old mortar mixed with it. The flowers are white, pale-purple outside, distinct, and showy. The leaves of both are deeply cut, fern-like, and effective when grouped. It flowers in April and May.

THE JAPAN WINDFLOWER (*A. japonica*) is decidedly the finest of the tall-growing Anemones yet introduced, and one of our best autumn-flowering hardy plants. It is a native of damp woods on a mountain called Kifune, in the neighbourhood of Miako, Japan, and was first introduced into England by Fortune. It has lately been found in Burmah, however, and may have a still wider distribution than we are

posed. If disturbed, the Japan Windflower takes a long time to become established again, but even more years being required to overcome interference unless very carefully handled. My plan, which I think a good one, is to establish offsets in shallow boxes, and plant out the whole without breaking the soil. The white variety *alba* or *Honorino Jobert* is particularly handsome and easily managed; the great secret seems to be to prepare at first a good deep bed of rich heavy soil and to leave the plants alone. *A. j.* var. *hybrida* or *elegans* is said to be a cross between *A. japonica* and *A. vitifolia*, a nearly allied Himalayan species. We have no means of either disputing or verifying this statement, but from our knowledge of *A. vitifolia* we would doubt very much its being one of the parents; the probabilities are, as in the case of *Honorino Jobert*, that it is a break, or sport, or else a seedling. When fully established, and showing signs of degeneration, supply the needful in the shape of a heavy top-dressing, and this left on the ground all through the summer will be found beneficial.

A. narcissiflora, of which the illustration represents the flowering stem, is a charming hardy species distributed in the Alps of Central and South Europe, Western Asia, Siberia, North-west America, and also in the Himalays. It is by no means a common plant in gardens, although a very useful and showy species. It is one of the freest flowering in the group, each stem carrying (see cut) a large head of fine delicate white flowers in a setting of bright green leaves, and making in itself quite a charming bouquet. It does well in the ordinary border, requiring a sunny spot and rich light soil. It makes a fine display in early summer when doing well. It is said to be allied to *A. polyanthes* by intermediate forms, none of which are known to us in cultivation at present. *A. narcissiflora* rarely exceeds a foot in height; the leaves are palmately five-parted, and the divisions deeply cut into narrow linear lobes. It deserves a place in choice collections.

A. polyanthes. This is one of the most



Anemone narcissiflora.

charming and, so far as my knowledge of Himalayan Windflowers goes, one of the worthiest of a place in the flower border or rockery. It is found at an elevation of 10,000 feet to 12,000 feet above sea level, and is quite hardy enough to withstand all the vicissitudes of our severest winters. It is not at all particular as to soil or situation, and flowers with a profusion only surpassed by the Japanese species. It usually blooms in June and July, coming in between the earlier and later forms, continuing in flower until succeeded by *A. vitifolia*. In partially-shaded positions it grows

higher than in the open, varying from 1½ feet to 3 feet, and bearing an abundance of flowers quite equal to any of the other species. It has been confounded with *A. obtusiloba*, a species with golden-yellow flowers, not, so far as I know, in cultivation at present. In *A. polyanthes* the stems and leaves are densely silky, the latter five to seven-lobed, about 4 inches in diameter, and having long petioles. The flowers are about 2 inches across, many in an umbel, white or tinged purplish on outside, and very showy. It is increased either by seeds or division. The seeds sown when gathered give no trouble.

A. RIFULARIS.—This is a well-known garden plant, and a good second to *polyanthes* and others of the tall-growing section of Windflowers. It is perhaps one of the easiest to manage, making an excellent border plant, and not being at all particular as to situation. The roots do not run so much as in some of the other species, and it is, therefore, not so troublesome to keep in its place. The rootstalk is stout, the lower leaves three times divided, the segments lobed and evenly serrated. It generally grows from 2 feet to 3 feet in height, bearing flattened heads of many flowers, star-shaped, 1 inch to 2 inches in diameter, white, and often purplish-tinted outside. It flowers in summer, and is perhaps the commonest Windflower of the temperate Himalayas. Increased by seeds and division.

THE SNOWDROP WINDFLOWER (*A. sylvestris*) is not, strictly speaking, a tall-growing species, and should hardly be included here were it not for its charming free-flowering habit, its woolly seed heads in early autumn, and its adaptability to the wild or natural portions of the garden. It should be naturalised in quantities, both in our woods and shrubberies, where, if the ground is free from strong weeds, it will soon establish itself and form large groups, under which condition it is always seen to best advantage. It flowers in May and June, the blooms being followed by the woolly seed-heads, which hang loosely together for a long time. The flowers are large, white, and in the bud state drooping and somewhat resembling Snowdrops, hence the common name. It is easily propagated by offsets, which may be planted as desired when taken off. It is a native of Central Europe and Siberia, and should be in every collection.

A. VIRGINIANA.—An American species of no mean beauty, but unruly in habit, and only fitted for the shrubby border or the woodland, where it can run at will and take care of itself. The flowers, which are pure white, are produced all through the summer. Its nearest ally, *A. pennsylvanica*, is a weed that never ought to find a place in the garden. Also a native of North America.

A. VITIFOLIA.—A rare and beautiful species from Nepal, where it is said to be one of the commonest of native flowers. It is one of the reputed parents of *A. japonica* var. *hybrida*, and although much resembling *A. japonica*, it is readily recognised from that species, and flowers much earlier. It thrives best in a somewhat shady spot, or where the soil is stiff and rich it will do well in the open. It gets damaged in severe winters and should be protected when the weather is at all severe. It grows from 1 foot to 3 feet in height; the lower leaves are from 5 inches to 8 inches in diameter and deeply five-lobed. They are smooth above, but densely covered with a thick tomentum beneath. The flowers are borne in decomposed flattened panicles, pure white, and about 2 inches in diameter. It may be increased by division or seeds. D.

Campanula persicifolia alba.—This useful, well-known herbaceous plant was well to the front last season in spite of the drought. It is one of those plants which grow so easily that it is often neglected for that very reason. It is a plant which amply repays liberal treatment, and should be taken up and replanted every two or three years, and should get a good dressing of manure every spring.—F. H. Wilschetter.

255.—**Auriculas in a garden**.—These flowers are like everything else, they cannot be expected to do well if they are neglected. It is the nature of the plant to lose many leaves in the course of the season, and as it grows and the leaves fall off, the plants stand well out of the ground with naked stems. This, of course, would not happen if they had been replanted annually, as they ought to have been; or, if they were not replanted, fresh soil ought

to have been put amongst the stems. The leaves being amongst them would have been a sort of natural protection, and if the tops were clear of the leaves it would have been better to let them remain. The best thing to do now will be to surface-dress them with rich soil, and put on sufficient to cover the naked stems.—J. D. E.

— All that can be done at present is to heap some fine sandy soil or coal-ashes round the bare stems of the plants, as this is a vulnerable part, and the probable reason of so many dying off. In the spring you will be able to see which are worth keeping and which not, and the best should be divided and replanted as soon as the flowers are over, planting them deeper, and putting my small or unrooted offsets into sunny soil in a cold frame or under a handlight to gain strength.—B. C. R.

— Give them a top-dressing of leaf-mould, loam, and sand. It will shelter and protect the stems, and they will soon form roots in it, and in spring they may be divided and replanted.—E. H.

5231.—Anemone-roots and worms.—The worms are probably the Snake Millipede. The best remedy I can find, when it is not possible to remove the plants attacked, is to attract the worms into some other soil, such as decaying Apples, pieces of Potatoes, &c., buried in the soil and left a few days, when they will be found swarming with them; they are then collected and destroyed.—F. H., Winchester.

5247.—Rock plants.—Many plants are suitable for the purpose, but you must remember good treatment is necessary. If the rockery is well constructed, plenty of rich, fibry soil and comparatively few stones, and the position is not, as too often the case, near to trees, or even under the shadow of them, the following plants would succeed: *Aconitum microphyllum* (which is quite dwarf, has crimson spires that give colour to the plant, the flowers being inconspicuous), the golden-flowered *Alyssum saxatile*, *Androsace lanuginosa* (in warm, light soil), Alpine Anemones, the beautiful *Vinaria vulgaris peloria* (a really showy and interesting flower, pale yellow, orange at the apex), *Arabis albidula* (which is, however, a little too rampant, but will do for the rougher parts), *Arenaria balearica* (a creeping herb, which coats the facings of the stones with greenery, spangled with white flowers in summer), Thrift, Dwarf Bellflowers (such as the deep blue-purple *Campanula patula*, the White *C. parviflora*, *C. muralis*, and others), *Cyclanthera* (for blooming in winter, *C. ibericum* and varieties), Alpine Pinks, *Dryas octopetala*, Hardy Heaths for the rougher parts, *Gentianella* and *Gentiana acaulis* (the flowers in both cases of deepest blue colour), *Gypsophila paniculata* (a spreading plant with a wreath of small flowers, very charming for cutting), Christmas Rose, *Iberis* (*I. gibraltarica*, *I. semperflorens*, and others), Dwarf Irids and the beautiful bulbous kinds (as *I. reticulata*, which has deep-purple sweetly-scented flowers), *Edelweiss*, *Lithospermum prostratum* (deep-blue flowers in early summer), Golden-leaved Creeping Jenny, Golden Drop, *Onosma taurica*, Dwarf Phloxes, Alpine Primulas, Mossy Saxifrage (as *S. hypnoides*), *Scilla*s of kinds, *Sedums*, Thymes, *Trillium grandiflorum* in a shady and moist corner, and various dwarf bulbs. With these plants, or any of them, you may get a very interesting rockery.—C. T.

— *Acantholimon glumacem*, *Ajuga reptans atropurpurea*, *Alyssum alpestre*, *A. montana*, *A. saxatile compactum*, *Antennaria tomentosa*, *Arabis albidula*, *A. a. variegata*, *Arenaria balearica*, *Ambrosia deltoidea grandiflora*, *A. Hendersoni*, *Campanula carpatica* (blue and white), *C. gorgonica*, *C. isophylla alba*, *C. parviflora*, *Daphne Cneorum*, *Dianthus alpinus*, *D. deltoidea*, *Gentiana acaulis*, *Hutchinsia alpina*, *Lithospermum prostratum*, *Linaria pallida*, *Linum flavum*, *Lysimachia Nummularia aurea*, *Omphalodes verna*, alpine Phloxes in variety, including *P. procumbens*, *setacea*, *atro-purpurea*, *Bride*, *grandiflora*, &c., *Silene acaulis*, *S. grandiflora*, *Saxifragas* in variety, including *S. Bursseriana*, *longifolia*, *ruscularis*, *nullosa*, (London Iride), *hypnoides*, *Wallacii*, *oppositifolia*. Then the *Sedums* and *Sempervivums*, or Houseleeks, are all suitable, and will give but little trouble to establish. *Veronica prestrata*, *V. repens*.—E. H.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruits and vegetables for drawing. The drawings so made will be engraved in the best manner and will appear in the next issue of GARDENING ILLUSTRATED.

CHRISTMAS ROSE (HELLEBORUS).

THE White Christmas Rose is one of our most valuable hardy perennials, flowering, as it does, in the open air in the dead of winter, when little else is in bloom, coming in particularly useful for Christmas, when flowers are wanted in plenty, but are somewhat scarce. But, as a matter of fact, the season of the Christmas Rose extends from October into April. It commences with the white-flowered kinds, of which *H. niger* is typical and best known, and it closes with the red-flowered sorts, the finest of which is *H. colchicus*. These last are often called

stagmat-kind, and partial shade is an advantage, such as would be afforded by a wall or a shrubbery. Only in this last case on no account should the roots of the shrubs be allowed to run through the soil and exhaust it, or the plants will certainly fail. It is much better in the case of these Hellebores to devote a small bed or border to them exclusively, as then their little cultural requirements can be better attended to. Planted in a soil and situation such as advised above, they ought to thrive, and nothing more remains but to advise the placing of a thin mulch of Moss, or some clean material, among them as the flowering season commences, as



Fine Christmas Rose (*Helleborus Commertzenianus* Benary). (See page 644.)

Lenten Roses—but more of them later on. We will take them in the order that they come, and glancing at the white-flowered sorts, detail their merits, many uses, and most successful.

METHOD OF CULTIVATION AND INCREASE. *H. niger* is easily known by its thick glossy leaves and white flowers. No plant better deserves, or better repays, good cultivation, but some are not successful with it. Plants of this kind are imported by tens of thousands, and are offered at a most alluring rate to induce amateurs to buy them. My advice is, do not buy. These plants are collected from their mountain homes; they are ruthlessly torn up without regard to the roots, the leaves are cut off, they are packed closely in boxes, and forwarded by the collectors to agents, who distribute them. They have a long overland journey, and often get heated on the way, and yet another long journey by land and water before they reach England. They are described as being full of flower-buds, and so they are, but few flowers may be induced to open. The plants may be planted, and the majority of them will die. I once planted 1,000, and did not save 100 of them. It is better and infinitely more satisfactory to obtain from some good English nurseryman healthy, home-grown plants, and these, if planted with care, are sure to succeed, and give good flowers in abundance the same season. Christmas Roses will thrive in any

ORDINARY GARDEN SOIL, but do better in a prepared site which has some good fibry loam and well-rotted manure dug into it, whilst a fibrous peat will not come amiss. They love a fair amount of moisture, but not by a

this will greatly aid to keep the blooms clean, by preventing the rain from splashing the soil upon them. These Christmas Roses may be left for years undisturbed, and will then grow into great tufts, but the time will come when they need

DIVISION, whilst some may wish to perform this operation in order to increase their stock, or it may be necessary to transplant some of the plants to fresh sites and gardens. Transplanting large specimens is almost sure to end in failure and, perhaps, entire loss of the whole stock. When big plants are lifted they should be most carefully divided into small pieces, each one with a few roots attached, and these, if planted firmly in good light soil, soon put forth fresh roots and grow away all right. This should be done in spring or summer, as that is the plants' growing season, and the divided pieces take more readily. If done in autumn and winter the lowering is interfered with, if not quite destroyed, and the divided pieces may perish before they commence to grow. Of course, it is important if dry weather follows upon division that the plants be occasionally watered; but if the site is a shaded one the need of this will not be frequent. All the above applies to Christmas Roses in the open ground, and from this system of culture good and pure flowers may be had in the greatest profusion; but these lovely Christmas Roses are beautiful in pots or tubs, for which purpose they may be taken up, grown, and brought on into bloom under glass. After the Chrysanthemums are over the house might be gay with Christmas Roses, and there the flowers would be absolutely pure and

unsoiled. Of course, they cannot be annually lifted and replanted, as this would soon spoil them; but the Christmas Rose is so well adapted for

POT OR TUB CULTURE that this method of growing it might be extended. Strong plants may be potted, or several placed in a tub. They may stand outside in a partially shaded spot all through the summer—in fact, for the greater part of the year—only being brought in under glass as they come into flower. If they are treated generously and well looked after they will flower equally as well and freely as the plants in the open ground, and the plants being under glass, flowers can be cut at any time. The beauty of fine specimens in pots or tubs must be seen before it can be fully appreciated, for certainly no other hardy plant better repays good culture in this way. *Helleborus niger* itself is extremely variable. There are some inferior forms of it, and others remarkably fine. *H. utrifolius* is a magnificent kind, larger in all its parts than *H. niger*, its leaf-stalks being 1 foot or more in length, and the blossoms borne on similar long stalks are sometimes as much as 5 inches across. It is probably the finest Christmas Rose in existence, and, moreover, commences to bloom as early as October. Other fine forms of *H. niger* are known respectively as the Riverston and the St. Bridget varieties, both of which bloom at the same time as the common form. *H. olympicus* is a slender-growing, white-flowered species, flowering from January to March. The flowers vary in colour from pure white to a greenish-white hue.

RED-FLOWERED KINDS are interesting and pretty, though not so valuable as the white ones. The best is certainly *H. colchicus*. It is very vigorous, the plant making a mass of rich dark-green leaves, 1½ feet to 2 feet in height. The flowers are of a dark purplish colour, borne on long stems above the foliage, and appearing from January almost into April. Several very fine hybrids have been raised by crossing this species with other kinds. Some of the best are *Colchicus coccineus*, fine rich colour, brighter than the type *Commerzienrath Benary* (see page 643), white, spotted with crimson, a lovely variety. F. C. Heinemann, a spotted reddish-purple, and *Olban Otto*, white. These succeed under the same culture as the common Christmas Rose, and, as before said, their value lies in the fact that they considerably prolong the season of this lovely flower. However, when we think or speak of Christmas Roses it is the charming pure-white flowered kind which flowers at Christmas that is uppermost in the mind. Although a well-known flower, it cannot be said that it is either extensively or well grown in gardens generally. It is ill adapted for plotting about in the sunny and oft-disturbed mixed border, but if those who desire to have its pure blossoms in quantity for personal, house, or church adornment at the great festival of the year, will only take a little trouble, and give the plants special culture in some suitable situation and well-prepared border, white flowers at Christmas, instead of being a scarcity, as now they too often are, will be profuse and plentiful enough for all purposes. H.

Rockeries in small gardens.—Rockeries in gardens of moderate size are usually sorry affairs, but they need not be, although, as a rule, even a well-constructed rockery is not seen to advantage in a small place. But where one is really wished for the first thing to remember is to have plenty of soil, avoid climbers, bits of china, and such like refuse. A few good stones, well laid, with ample soil between are sufficient, as the plants must grow, which is impossible where there is only a spoonful of soil for them to root into. This note is prompted by a rockery just constructed in a small garden, and it was found that the soil had sunk so that the stones were left practically dry, and the roots of the Ferns and the plants chiefly used without any soil whatever. In the spring when growth commenced—if it ever did—the results of such abominable planting would be soon evident. Rockeries under the drip of trees are invariably a failure, even when planted with Ferns, which do not like drip, although preferring moisture. Drip quickly destroys the beauty of the fresh green fronds. Far better is it to plant the space with border perennials, which make a show of colour if a judicious selection is made for spring until the autumn.

HOUSE & WINDOW GARDENING.

TULIPS AS WINDOW PLANTS.

EARLY Tulips make excellent window ornaments (see illustration). They do best when planted early in the autumn in boxes and placed in a dark cupboard or cellar, or in the open air covered with Cocoa-nut-fibre. As they come on for flowering, pot off, placing four or five Tulips



A "market" pot of Tulips.

in a small pot. This is a very popular plan in Covent-garden-market, where enormous numbers of them are sold. B.

Calla æthiopica "Little Gem."—Those who object to the ordinary Arum Lily on account of its height as a window plant, will do well to try the new dwarf variety "Little Gem," which is an exact miniature copy of the ordinary Arum Lily, and does well under similar treatment. If early flowers are required, then the plants should not be set out in the open ground, for as a rule those which are so treated do not flower so early as plants kept in pots.—F. B., *Winchester*.

TUBEROUS ROOTED BEGONIAS.

THESE are so largely used for bedding-out purposes, and have proved themselves particularly useful during a wet season, so much so, that most gardens will be using a few in future. In a wet season the Zonal Pelargonium is almost useless. Not so the Begonia, for although the fleshy flowers bruise easily, the slight drooping tendency they have, together with a fairly long peduncle, allows the flower to turn from rain sufficiently to avoid the complete shattering "Geraniums" and many others experience during thunder showers. In Preston Park (Brighton) I have seen grand beds of Begonias both during dry and wet summers. In Queen's-gardens, also on the front at Eastbourne and other seaside resorts, this flower does well. Even if we look at the other extreme, the London parks, we still find the Begonia one of the most showy and reliable bedding plants among large collections. Nor is it at all necessary to confine them to such purposes, as they are equally grand when grown in pots. All through early summer and autumn we find grand groups exhibited by the Messrs. Cannell, J. Laing and Sons, besides others too numerous to name. With these few opening remarks in support of the great and universal use of the Begonia, I will pass on to its culture, a note upon which will be more seasonable than might appear at first sight, seeing that now is the best time to sow seed, and which will, if properly treated, give us good serviceable plants for the ensuing summer, both indoors and out. There are four distinct methods of propagating the Begonia: From cuttings, leaves, seed, and division of their roots. Seed should be sown now (January), using a sandy compost of leaf soil and loam. Avoid peat; this does not suit seedlings so well as the leaf-soil, and has a tendency to produce drought and moisture at the surface. Care in preparing the pans is well repaid, good

drainage, with an even surface of rather fine soil, having much to do with the successful raising of seedlings. Thoroughly moisten the soil previous to sowing, as any watering until germinated is not advisable. A very small quantity of choice seed is certain to give much better satisfaction than the same sum expended upon a larger quantity from inferior strains. It is not absolutely necessary to sow in January—February and March are the times chosen by some—but when we bear in mind that early sowing will give us grand plants for the first season's use it is worth while taking the extra trouble. Never cover the seed with soil. A sheet of glass over the pan, and this darkened with Moss or paper until the seed has germinated, has proved most successful with me. Stand the pans in a heat of 65 degs. to 75 degs., and if they can be half plunged for a time, so much the better. This avoids the too early use of water, the soil keeping uniformly moist for a longer period. As the seed germinates rather irregularly it will be well to keep it partially shaded as long as possible without injury to those seedlings which sprang up early. The seeds not being covered with soil, they are easily injured by too much light being admitted prematurely; therefore, we must avoid this as well as the necessity for overhead watering until they are safely rooted into the soil. Under proper management it should not be necessary to water for some time; but when this becomes needful, stand the pan in water and let it absorb the moisture. Directly the forwardest seedlings can be handled, lift them out upon the point of a label, and place them in pans or boxes. Keep them in the same heat until settled to the new soil, after which they will be better on a shelf in ordinary greenhouse temperature. Later on they may be potted up into 3-inch and 4-inch sizes, giving them a little richer mixture when shifted into 6-inch pots. When intended for bedding purposes a partially spent hot-bed will suit them well. In this case I place a layer of loam, leaf-soil, and a dash of sharp sand over the bed, about 4 inches deep. Instead of potting the seedlings after they have made stony little stuff in the pans or boxes, they are planted from these into the frame. Until the middle of May they can be growing freely, and it is easy to accustom them to more air by the planting-out season, say the end of June or earlier according to the season. A thorough watering before being lifted will ensure good balls of soil, and they are very little trouble when grown in this way. The other methods of propagation are need to increase a certain variety which is either valuable on account of its peculiar colour, size, or a combination of both. As many would doubtless like to increase some of their best seedlings I will touch as briefly as possible upon these methods.

CUTTINGS are readily rooted in the spring, and should consist of young growths taken off with a small portion of the old tuber as a heel. A very sandy compost, and care regarding water, will ensure success in a temperature of 65 degs. to 70 degs. It is also very interesting and easy to propagate from fully developed leaves. These are cut through their chief veins at a few places, and then laid upon a pan of sandy leaf-soil. As the cuts callus over they will form into small bulbs and root, eventually throwing up leaves and making a quantity of healthy plants. A brick bottom-heat assists this method largely. Division of the roots is an excellent plan when only a small increase is wanted, and can be best done in the early spring as young growths are starting. This will make it easy to divide them into pieces of more equal strength. There is nothing difficult in the culture of Begonias, and it has been fully treated upon in these pages more than once, therefore, I will confine myself to the above seasonable note. P. U.

Single Cactus Dahlias.—This is a new class of Single Dahlias, and not without beauty. The flowers are quite single, and they get their name "Cactus" from the distinctive twist in the petals, like the ordinary Cactus type. They are a charming race, as far as I have seen them, especially one variety, which, if anyone cares to get, will find useful for cutting. This is named *Guy Manning*. It grows quite 6 feet high, and produces a wealth of flowers, large, but not angular, and white, some with rose, the base

yellow. Its peculiarly soft pleasing colour, freedom, and elegance are its chief characteristics. There are other kinds in this group, but the colours are more of a rosy-purple and magenta type, which do not please me.—C. T.

ROSES.

NOISSETTE ROSES.

THE National Rose Society class these with the Tea-scented varieties, and from the great similarity existing between many from each section, as well as the complete mixture which seems to have taken place in the chief characteristics of the two sections, it would be well to lump the two classes in future. What is the difference between a Tea and a Noisette Rose? How often I am asked that question, and how difficult—nay, impossible—it has become to state the distinction in a definite manner. If I reply that the Noisettes bloom in clusters, and my attention is called to such varieties as Mme. de Tartas, Mme. Cusine, and others, which certainly flower in trusses to a far greater extent than many recognised Noisettes. As a second guide, I say that the Noisettes originated from a cross between the old Musk and the Common China, and developed a peculiarly strong, rambling growth. Still, the distinction is not sufficiently reliable. We have Anne Vibert, L'Idéal, and Maréchal Niel, very good so far. But what about Gloire de Dijon, Gloire de Bordeaux, Emilie Dupuy, and others? Are they not equally strong and rambling in growth? Then my attention is called to Carolino Kuster and Narcisse. Where is the strong growth in the latter variety, one of the shortest-growing Roses we have? I have huddled these notes Noisette Roses, but I think we have already noted how mixed these two classes are, and to save the necessity of forming an intermediate class under the name of Dijon Teas, I think the N. R. S. did well to throw them together. It is better to do this than to create a new class. It is as climbers that this class of Rose shows to the best advantage, and I may name the following as particularly hardy and rampant in growth—Whites: Anne Vibert and Miss Glegg. Yellows: Réve d'Or and William Allan Richardson. Reddish-yellow: Fortune's Yellow, L'Idéal, and Bonquet d'Or. I have not grown Comtesse de Bouchard, but I understand it is a decided improvement upon Réve d'Or. All of the above need pruning upon the long-rod system I have frequently recommended in these pages. P. U.

ROSES AND CLEMATISES.

I AM under the impression that I have previously drawn attention to the very useful and pretty combination formed by planting these two flowers, but as the time for commencing such a bed is with us, I propose naming a few Roses which are most suitable. All of them should be extra-strong growers, so as to be amenable to the pegging-down system, and to cover the ground without needing to be planted thickly. A second reason for extra strong growers lies in the fact that owing to the Clematis growth it will be impossible to remove the wood as soon as it has flowered, consequently, a great deal of the plant's energies will be withheld from the strong maiden growths issuing from the base of the Roses. With an extra vigorous variety we get sufficient growth of the desired character in spite of this seeming waste. It may be well to add a brief outline of how to combine these two most charming and varied flowers. Strong Roses should be planted at given intervals, say, 8 feet apart, if in a single row, such as on the outskirts of a lawn, by the side of paths, &c., or a distance of 6 feet each way if in a bed. A Clematis may be planted alternately with the Roses, when these will also be 6 feet or 8 feet apart. As each flower thrives well under the same treatment, if the following suggestions respecting pruning are carried out the result will be surprisingly pleasing. Late in the autumn, when Clematises are out of bloom, and the Rose-wood is more or less matured, cut away the wood of the latter which bore blooms during the early summer, leaving the uprights shoot ~~by which~~ ^{by which} ~~spring~~ ^{spring} from the base of the stool intact. In cutting away this

wood, you will naturally remove the Clematis growths at the same time, and the ground will be clear enough between the plants to allow of all necessary forking and manuring being done. This trimming out will also allow the plants more air, and tend towards sounder ripening of the Rose-wood. When the time for pruning Roses arrives, there will be very little to do in these beds except to dress over the ground as required, and to peg down the long growths as before, either to right and left if in single rows, or in such a manner as to most evenly clothe the ground should they be grown in a bed. The Roses will bloom very freely from midsummer until the first or second week in July, when their chief show will be over for the season, as these extra-vigorous growers seldom produce more than one good crop. It is here that the full benefit of the Clematis comes in, for if we plant varieties of the Jackmani type we shall soon be favoured with a gorgeous show of colour, and which may now be had in considerable variety. This class of Clematis makes strong growth and blooms upon the same during late summer and autumn. They are quite as hardy as Roses, but are more subject to the attacks of slugs during early spring, when young growths are pushing

Jacqueminot. Teas and Noisettes: Bonquet d'Or, Climbing Perle des Jardins, Emilie Dupuy, Gloire de Dijon, Henriette de Beauvean, L'Idéal, Reine Marie Henriette, and William Allan Richardson. I also like the following, chosen from various other classes: Ghêre Lyonnaise, Bedford Belle, The Waltham Climbers, Mme. Isaac Perier, Blanche Moreau (White Moss), and the Austrian and Persian Briers. It is not necessary to name the Clematises, because all in the class I have recommended are about equally suitable. P. U.

PANICUM VARIEGATUM.

WHERE indoor decoration has to be provided plants of a trailing or pendulous habit of growth are necessary for furnishing the edges of jardinettes or stands, and this is an invaluable plant (see illustration) for the purpose, its habit of growth and beautiful variegation being in every way perfect. I insert three cuttings in a small pot, and as soon as they get a few inches long, peg them down close in the soil, when they throw out a number of side-shoots, and form excellent plants without any further training. J.



OUR READERS' ILLUSTRATIONS: *Panicum variegatum*. Engraved for GARDENING ILLUSTRATED FROM A photograph sent by Mr. W. Bell, Leicester.

from the bottom. For this I apply a dressing of soot and lime around the Clematis when pegging down the Roses. The Clematis shoots will intertwine among the Roses, and have a very showy and bold appearance all through the autumn. For all practical purposes the Jackmani Clematises may be considered herbaceous, and each season's growth can be removed with the superfluous wood of the Roses in the autumn. The following are all suitable for the purpose I have endeavoured to describe—H. Perpetuals: Duke of Edinburgh, Duke of Teck, Eugène III., Henry Bennett, Mme. Gabrielle Luize, Margaret Dickson, Ulrich Brunner, and General

A hardy foliage plant.—A foliage plant in winter is the Common Helleborus (Fetidora), a native of England, and too little seen in gardens. It is worth planting for the sake of its fine leafage also, this being of a pale deep-green colour, leathery, abundant, and forming bold tufts, so to speak, quite as rich and ornamental as many things grown in stoves for their foliage alone. Early in the spring one gets the greenish flowers produced in abundance, and in association with the dark-coloured leafage are pleasing. A clump of this Hellebore on the rockery at the end of the border is a feature in the garden in winter. C. T.

FERNs.

REPOTTING FERNS.

Now that we have a new year with us most of our greenhouse occupants will be needing an overhaul, more especially the Ferns. A few things which may be done and a few which should not be are what I propose incorporating in this article. One of the most important points in potting Ferns is to wait until they are just moving into new growth again. We want the roots in such a state that they will take to the new soil at once. Without this we get a stale compost very early, and it is seldom advisable to water them until their roots are well into the new soil. A too free repotting, or too large a shift is also less beneficial than a slighter one; and the annual repotting of these favourite plants was responsible for many indifferent results. A plant which is tightly root-bound, may be improved by repotting, but when barely filled with roots they do not appreciate disturbance, provided the soil is well drained and suitable. Of all the vast number of Ferns now in cultivation, the Maiden-hair (*Adiantum cuneatum*) is far more popular and numerous than any other. I find it an excellent plan to cut down the whole body of fronds from a few of the shabbiest-looking plants, stand them in a warmer temperature until new fronds are moving freely, repeat those needing it, and keep them in the warmer quarters until the new fronds are almost developed. If a small stock of plants are looked over and then treated thus in two or three latches, we shall soon have a nice show of healthy and well-furnished stuff. Some Ferns, the Maiden-hair among them, may be divided when potting, but I like all Ferns best when raised from spores. In a general article of this nature it is not possible to give the best compost for a large number of genus and species, so I can only name one which is suitable for almost all Ferns. The fibrous turfy loam so generally recommended for all pot work is the very best loam you can have for these plants; but it is difficult to get in many localities. In that case get the nearest approach to it you can. I know an amateur who cuts up pieces of turf by the roadside and stacks for his small collection. Not many years ago it was considered necessary to have peat for Ferns, but I venture to say that less than a quarter of this is used for the same purpose in the present day. Still, we do not want to forego peat entirely. Turfy loam, peat, and leaf-soil in equal proportions, with a dash of sharp sand, will be grand for almost any species of Ferns. Mix these thoroughly, and have the whole just moist enough to allow of firm pitting, without "cakiness" or drying hard, as if the compost had once been mud. Never pot into soil of less temperature than the Ferns are growing in. Non-attendance to this has caused many disappointments, nor can this be wondered at when the roots of a plant just pushing into fresh activity are immersed in a compost some 10 degs. to 20 degs. colder than it already occupies. To make the soil firm around the ball of a plant which has recently been occupying a pot almost as large needs care. Add a small portion of soil at a time, and ram this down fairly firm with a stout label or potting-stick. Unless this part of the operations be done properly water will percolate through the new soil too freely to allow of any moisture reaching the old ball without an undue amount being supplied, and there are few things in the culture of Ferns more injurious than this. Drainage is another item which needs attention. As a class, amateurs look upon Ferns as needing a good quantity of water; this is often overdone. With a few exceptions we do not find Ferns growing in wet soil while in their natural state. If we pass over the *Osmunda* we do not find any of our own varieties growing in wet soil; they are in sandy loam, and generally upon a bank. A dry, arid soil does not suit them any more than a wet one; what we want is a quick drainage with a soil of that medium moistness spoken of as cool. One or two good crocks fitted over the drainage hole with care, and then a small quantity of cinders on top of these will provide safe drainage, with the loss of little time and trouble. Shake away a good bit of the old compost, use clean pots, and a good exposing the roots for any length of time.

TRUE MAIDEN-HAIR FERN.

This pretty hairy Fern (*Adiantum Capillus-veneris*) is admirably suited for cool houses. I have seen it thrive luxuriantly on walls on either side of such a house, and it is admired by all who see it. In a plant-house at Hammersmith I once saw it growing well; it is grown on a wall about 3 feet high, which is thickly clothed from top to bottom with its beautiful fronds. Being a surface-rooter it is better adapted for this kind of ornamentation than most other varieties, and when grown in this way it is, in



Fronds of True Maiden-hair Fern.

addition to having a fresh and dressy appearance, most valuable for cutting for bouquets, &c. If the fronds, when they begin to get shabby here and there, are cut off, a constant succession of fresh young fronds may be obtained.

LOXOGRAMMAS.

I HAVE some dried fronds of this Fern from "W. M.," which he says he received from the Neilgherry Hills amongst some Orchids. He has pegged the rhizomes down, and he thinks he may get some of them to grow, and he wishes me to say a few words about them. The names of the species is *L. involuta*, but I can scarcely say anything about the plants belonging to this genus in a cultural manner, because this is a genus which I have never seen in a living state; but from the specimens which I have, I should imagine they would be very interesting and handsome Ferns, and many a time have I received rhizomes of these plants home by post, but I never could induce one to grow. These are Indian Ferns, which appear to come near to *Antrophyum* in their manner of growth, but they differ from them in forming linear sori, which cross the junction of the little veins, which are hidden in the leathery texture of the fronds. I have tried to grow these plants by affixing the rhizomes to the Orchid blocks, but in this place never succeeded in getting them to grow. I also have pegged them down on some Orchid peat and placed them in the cases with Filmy Ferns, and here I got several to start growing, but they soon died. I imagine too much moisture and too close an atmosphere was the cause of this failure, and I am not aware that they have been successfully established in any gardens in the country; if so, I should like to hear from the parties having them. The following kinds are the best known; there may be many more species, but as great differences of opinion exist as to what constitutes a species, and we have not yet included them amongst our garden plants, I will leave them with the heartiest wishes for the success of "W. M." in his undertaking. These plants, although natives of India, all of them, grow at from 2,000 feet to 7,000 feet elevation, so that they do not require great heat.

L. INVOLUTA.—This is the plant sent by "W. M.," and it is a somewhat common Fern in many parts of India. It has a stout creeping rhizome, which bears fronds some 12 inches or 18 inches high, and 1 inch to 2 inches broad. These taper at both ends and bear linear cross sori, which spread outwards from the midrib, and are leathery in texture, and pale green in colour, smooth on both sides.

L. LANCEOLATA is a very similar plant to the last named, the rhizome is creeping and the fronds seldom exceed a foot in height and an inch in breadth, and the sori are more oblique, often, indeed, parallel with the midrib. They are coriaceous in texture, smooth on both surfaces and of a rather deep-green in colour.

L. AVENIA, another pretty species, but less coriaceous in texture; its rhizome is creeping, and they grow to some 18 inches in length. They are broader than the other two kinds, but taper gradually to the base. The sori are numerous, in oblique lines not touching the midrib, and falling short of the margin. This comes from the Midny Peninsula and the Malay Islands.

THE KITCHEN GARDEN.

STRONG TOMATO-PLANTS.

THERE seems to be a prejudice against strong young Tomato-plants. At one time they were objected to because it was thought those less vigorous were not only the first to produce fruit, but were also the heaviest croppers throughout. Some old-fashioned gardeners did not believe in seedlings, being under the impression that these were far too strong growing to become quickly and heavily productive, and in order to counteract this supposed unfruitful habit of growth it has fallen to my lot to have to strike the tops of strong seedlings and to throw the plants or stumps away. Even in those days, this being when Tomato growing under glass was in its infancy, I felt that this was so much wasted labour, and nearly lost my situation because I protested against striking the tops a second time. Cutting-raised plants are not one whit more precocious in producing fruit than are seedlings, nor do they, as a rule, fruit any nearer the ground than do those raised from seed and properly prepared. When the scare caused by the new form of disease most generally known as *Cladosporium* was at its height, one preventive measure to which much importance was attached was the preparation of extra hard-stemmed plants, subsequent culture also tending to keep them from becoming so vigorous as they are apt to do when planted out in rather strong soil. Undoubtedly, the disease does act most fatally in the case of Tomato-plants in a luxuriant condition, more especially when this is brought about by means of a rich root-run, strong heat and moisture-laden atmosphere, but though it is most advisable to avoid the latter error, it is not wise to start with stunted plants. Stunted plants too often mean legginess, the hard stems also failing to ever swell properly. By far the most profitable plants are those which produce a strong first cluster of fruit, this reaching down so as to nearly or quite touch the ground; whereas, in the case of starved, leggy plants the first bunches of fruit are both feeble and formed from 18 inches to 2 feet from the soil. I hold that Tomato-plants should never be placed in small pots. Once they become in

THE LEAST BIT UNDER-MIND the growth is spindly and weak, and is with difficulty recovered to a more robust state. The seed should be sown thinly in pans or pots filled with fine sandy soil. This sowing is recommended because the seedlings if crowded quickly weaken each other, and there is no sense in raising very many more of them than are needed, while fine light soil ought to be used, as it is only out of this that the tender young roots can be shaken or lifted without experiencing a severe check. Tomato-seed germinates very quickly and surely in a brisk heat, and directly the seedlings are well through the soil they ought to be raised more up to the light, a shelf near the glass suiting them well. When well into the rough leaf they should be potted off. Prepare a heap of light loamy compost, and warm this thoroughly by means of heated bricks plunged in it. The pots to be used ought to be either 5 inches or 6 inches in diameter, clean and lightly drained, and the potting should be done in the house where the seedlings are growing, a few minutes in a cold potting-shed checking them badly. Place a little rough soil on the drainage and fill up to the rim with the soil. The seedlings should be carefully shaken clear of each other, and be then sunk up to their seed leaves singly in the smaller sized pots or in pairs against the sides of the larger ones, strictly jarring down the

soil being all the fixing needed. Place them in a warm, light position, shade from sunshine, and water gently if the soil is at all dry, watering somewhat sparingly afterwards. Directly the plants have recovered their healthy colour expose them to the full sunshine and raise well up to the glass. It will not be long before they commence rooting—the buried stems freely emitting roots—and growing strongly, their sturdiness being most marked. If kept long enough in these pots for the first bunch of flowers to be well developed, the stems will soon begin to elongate unduly, and the final putting or planting out should be done before a root-bound state is arrived at. There is little or no likelihood of plants thus well prepared failing to show strong bunches of flower before they are 12 inches high, and it will be largely the fault of the cultivator if they subsequently fail from disease or other causes. Now is a good time to sow seed if an early crop of Tomatoes under glass is required, but for greenhouse and open-air culture from the middle to the end of March is quite soon enough to raise plants.

W.

FORWARDING EARLY PEAS IN POTS.

There cannot be any question as to errors of culture in this phase of Pea management, and the truisms, the more haste the less speed, is very evident in the raising of early Peas in pots. Now that the practice of sowing Peas in November or December is not practised so largely as in days gone by, many people appear to be in too much haste at the turn of the year to forward them as much as possible by sowing in pots and boxes and placing them in heat, with the result that they become drawn and tender, and also very much pot-bound. Economy now being the order of the day, it also has to be extended to the seed list, and if no more seed of the earliest Peas were ordered than would be sufficient for a first sowing, and these should have happened to have been sown in heat early in the year, it is very evident the plants would be poor when a reasonable planting time arrived. It having now become the practice to rely for a first crop on the dwarf earlies, such as Chelsea Gem, William I. and English Wonder, these are not so apt to show outwardly the ill effects of early sowing, like William I. for instance. Being dwarf growers, they do not grow very high whilst in pots, or at least not much above a couple of inches, but the pots will be filled with roots, and after the plants are set out they grow but very little afterwards—in fact, many people are often surprised at their showing for bloom when only a few inches high. The taller growers will become spindly and fall about, and very often need sticks for their support before it is safe to plant them out. By not sowing the seeds before

the end of January or the first week in February, the conditions by planting time will be quite different—that is, of course, if not hurried on in heat, as even at this time there are ample opportunities for their becoming spoiled if this latter practice is indulged in. Being brought on under cool treatment, the plants grow along sturdily, so that they are in fine condition for planting. Even if inclement weather should occur afterwards they are not likely to receive much of a check, and with the return of fine weather they grow away freely and strongly. I look upon small pots for sowing the seed in as an evil. I have always been an advocate for sowing in 5-inch pots. Whenever the weather and soil are in a suitable condition the Peas are planted out. If they are dwarfs, they will well repay the shelter of a warm south border. These early south borders generally have extra attention bestowed upon them in receiving additions of other material, as as to make them as fertile as possible. A dressing of well-prepared manure and wood-ashes should be applied in all cases where support is needed. In planting, turn the plants out of the pots carefully, and set them 6 inches apart in the rows, drawing some of the best soil about the balls, also seeing that it is well pressed about the roots, this assisting the plants to take readily to the soil. After the Peas are planted draw the soil up on each side as a means of protection, at the same time placing some short straw sticks round them. Some people, I know, claim to be

waste of time to place sticks to dwarf Peas, but the advantages far outweigh any supposed disadvantages. A.

TWO GOOD WINTER VEGETABLES.

It is an easy matter to have plenty of vegetables during the summer and autumn months, but this is not so from November onwards. To meet this demand I grow a large breadth of *Couve Trenchuda*. This I find most useful from October onwards, and it is much sought after by the cook. When the heads are large and the leaves have big midribs, then it is that it does us good service. In my case only the midribs are used and dished up like *Seakale*. To obtain the best results I find it best to sow a little seed under a lamplight early in the year. Some people complain that this Cabbage is not hardy. Be this as it may, I find it as hardy as other Cabbage. After the heads are cut I find many of the stumps live through the winter and give some beautiful tender greens all through the spring. *Chou de Burghley*, although severely commended by many cultivators when first sent out, is also valuable when it is taken into consideration how hardy it is and that it comes in from the beginning of the year onwards, and that the heads are very white and tender. To have it in this state and at this time I sow it at the same time as *Broccoli* and plant at the same time. At the present time (Jan. 3) I have a fine lot growing on a piece of land from which *Strawberries* had been cleared. F. A. C.

NEGLECTED VEGETABLES.

SALSIFY AND SCORZONERA.

The first-named vegetable, when well grown, should be crisp and white in flesh, like the Parsnip, and it requires a deep, rich, and well-pulverised soil that has been well manured for some other crop the previous year. The seed should be sown the first week in April, in drills drawn 1 foot apart, and it should be dropped into them thinly. After the plants have appeared above ground they should be thinned in the rows to about 9 inches or 1 foot from each other, and the ground should be kept well



A market bunch of Scorzonera.

surface-stirred and thoroughly clean all through the following summer. The return for this attention will be the production of a good crop of long, clean, straight roots, often as large as a moderate-sized *Surrey Currot*. Although a useful and excellent vegetable that has been long known and used in this country, it is not nearly so much cultivated as it deserves to be. It is admirable served up to table as a second course with white sauce, throughout the autumn and winter. It is one of the most valuable

substitutes for the Potato, and a heavy and weighty crop can be produced from any kind of soil. A few rows sown in an odd corner would produce many a good dish of wholesome food throughout the winter. The roots can be taken up in autumn and stored as *Parsnips* or *Carrots* are, or be left in the ground and mulched in winter. When lifting the roots care should be taken not to injure them in any way, as they quickly bleed, and loss of flavour to the root is the result. *Scorzonera* is grown for the root, as in the case of *Salsafy*, but the root has a different appearance, inasmuch as it grows longer and more slender than *Salsafy*. It is also more apt to run to seed. They are both worked in the same way, and the mode of culture recommended for *Salsafy* will answer perfectly for *Scorzonera*. B.

SOWING PEAS IN POTS.

At this season there are various means adopted to secure a few dishes of Peas in advance of those sown in the open ground early in the year. I am fully alive to the fact that Peas sown outside at the end of November or early in December will give a few early dishes, but on heavy land it does not pay. A sheltered border is also necessary, and there is continued warring against mice and birds before a crop can be secured. I am aware that sowing in pots causes a certain amount of work, but it gives a fair return, and a good dish of Peas is always appreciated. I do not like sowing Peas in pots in strong heat a month or six weeks before they are wanted to plant out; I believe this to be the cause of many failures. In the case of Peas sowing may take place towards the end of December—that is, if the plants can be given a warm border in March. I usually sow from the 18th to the 30th in cold frames, using 5-inch pots and not sowing too thickly, also using good loamy soil not too light, as if at all light and porous the roots do not take such a firm hold. Some fine or lighter soil may be used for covering the seed. If the soil is damp, one good watering with tepid water at the time of sowing will often be sufficient till the seed has germinated. It may be objected to that early sowing causes weakness by the seed being so long in the pots before planting out. Such is not the case, but the reverse, as the growth is slow at the start, and therefore when the seed has germinated, the Peas are as good as those sown in the open in March and above ground in April, and being raised without heat there is no fear of collapse, provided due attention is paid to moisture and keeping as near as possible, and giving free ventilation by removal of lights in favourable weather. It will also be observed I recommend larger pots than is usually employed, thus allowing more root space, also good loam in place of leaf-mould, this adding to the strength of the roots and tops. Early Peas raised in this way suffer little injury if planted at the time named. Cold east winds are more harmful, but these may be minimised by placing branches with the foliage on to break the wind, also by drawing up the soil against the plants and well firming the ground when turning out of the pots. The variety to be sown is also important. I do not think it necessary to sow the small round *White Peas* in pots, as though a few days earlier they give a poor return. Of course, if earliness is the important point, they are valuable, and even when this is not essential, a few rows planted out as advised will give a dish or two in advance of the wrinkled kinds. For general cropping, *Chelsea Gem* is in advance of other kinds, and when sown in pots can be had fit for table the first week in June. I would also advise a trial of the larger Peas, such as *Duke of Albany*. They do equally well, and though termed second early, are but a few days behind the earliest. Last year I sowed a fair portion for use on June 10. When sown for early work they are much dwarfier, not more than 3 feet; indeed, I topped some 23 feet, and when grown thus there is little trouble with stakes. The pods being fine are much valued so early in the year. C.

3172.—Cooking vegetables.—When cooking green vegetables my cook always puts a quarter of a slice of bread on the bottom. There should never be any smell. Some prefer a piece of toast placed in a muslin bag.—177

A NOTE ON BRETROOT.

As things considered, Dell's Crimson is the best Beet in cultivation, and as a consequence the synonyms are particularly numerous. The former may be purchased say at the rate of 1s. per oz., but when the seedsman honours (?) it with his own particular patronymic, then the price goes up another 6d. Unless I am greatly mistaken the rage for novelties in the way of vegetables is less pronounced than formerly, and the time may not be far distant when the well-tried old forms will be most preferred, the glowingly described and presumably new and distinct forms being taken little heed of. My advice to those who have found a variety of Beet that grows well on their particular soil, the roots being of medium size, well formed, richly coloured, tender and sweet when cooked, is to grow no other. On our rather strong soil, Crimson Ball, a good form of the Turnip-rooted, is the best for early use, but by far the most space is devoted to Dell's Crimson. The latter may be sown early in April without much risk being run of the roots becoming coarse, though I find the end of the month or even early in May answers better. In the case of Pragnell's Exhibition, early sowing would result in the growth of roots more resembling Mangold than Beet, and in most seasons the roots are too large, even when late sowing is resorted to. Exhibitors naturally favour large roots, and while this rule holds good Pragnell's variety will be most shown. Cheltenham Green-top and Omega also grew too large each time they were tried here, but all three might yet give satisfaction in other gardens. Crimson Ball would be the best for shallow ground resting on gravelly, but subsoils. I could, if so disposed, give a fairly long list of what I consider synonyms of the best types, but am of opinion that this should come from "head-quarters" or where there is the least likelihood of mistakes being made. H.

5257. **Cabbage for show.**—Seeing that the best prizes are frequently given to Cabbages that are so large that they are only fit to feed cattle, your question is much more difficult to answer than many people would suppose. Personally, I should prefer a rather small Cabbage, such as the Little Pixie. Wheeler's Imperial is somewhat larger, and when well grown very suitable for exhibition. For a Red Cabbage you may select the ordinary sort. You must, however, obtain plants raised from seed sown in the autumn, as unless you get heads large enough to require a wheelbarrow to take to the show, you will not please the majority of our judges at vegetable exhibitions. The White Cabbage seed may be sown in March, and the plants put out in well manured ground and given plenty of room. The best Cauliflower for exhibiting in August is Veitch's Autumn Giant. You cannot, however, depend on it to heart in time from spring-sown seed in the open. If you can raise a few plants under glass by sowing the seed in February—even if it is a wood frame—you will be sure, as to obtain heads that will be large enough to stand a chance of winning a prize, the plants must be unusually strong, like the Cabbage, the Cauliflower must have rich deep soil and plenty of room. J. C. C.

— Wheeler's Imperial is a good variety, so also is Carter's Heartwell. Seeds sown middle of August, left in the seed-bed all winter, and planted in April will not be far out; or seeds may be sown in a box under glass in February and planted when ready in good sand. The Blood Red is a good Red Cabbage. The most reliable Cauliflower in August is Veitch's Autumn Giant, but it must be sown early. I always sow in autumn; but a few seeds sown in heat in February will be time enough. The Wheeler is a good Cauliflower for August on a cool border.—E. H.

5248.—**Pea and Bean for show.**—The largest and most taking Pea for show in the month of August is undoubtedly Jubilee. You must, however, understand that in the case of Peas it is not always the largest that obtains first honours. It is those that are in a fit condition for table that more often than not decide the question of merits in the month of August, as it is sometimes difficult to get a good and

dish of Peas at that time. For that reason you must plant the Peas 3 inches apart in deep-lying and well-manured ground. You had better make one planting about the middle of April, and another three weeks later, so as to extend the time of bearing. The best Runner Bean is the Champion. This has thick, handsome pods which for table quality are far preferable to those sorts which have wide and longer pods. The beginning of May is soon enough to plant Runner Beans. Dig out a trench 9 inches deep, then put in the bottom 4 inches of rotten manure, and put half of the soil back on the top of it, and set the Beans 9 inches apart in the middle of the trench.—J. C. C.

— Culture has something to do with it. Duke of Albany is a good Pea; Sutton's Giant Emerald Marrow also comes out well. These large-podded varieties which do not fill up till the pods lose colour are not of much use. For the same reason I do not care much for the Seville Long-pod Bean; it is difficult to trim it right. The Giant Long-pod, although not so large, is more reliable. Hardie's pedigree Windsor is a good Broad Bean. Both Peas and Beans should be sown by the middle of April.—E. H.

5249.—**Growing Cucumbers and Melons.**—These can be grown very well in flower pots; indeed, almost, if not quite so well as by "putting loose soil on the stage" to grow them in. The best way to grow them is not to plant them from, say, a 3-inch or 4-inch pot into the one the plant is intended to fruit in, but repot from a 3-inch or 4-inch into a 7-inch; from that into a 9-inch, and ultimately into a 12-inch, in which they will bear their fruit. They both require good soil, Yellow loam three parts, decayed manure one part, and an 8-inch portion of powdered lime. Put freely, and leave 2 inches upon the surface to be removed by surface-dressing; that is, at the last potting the soil ought to be 2 inches below the rim. This space may be filled up when the fruit is formed with a compost of equal parts manure and manure.—I. D. R.

— If you are growing stove plants in the structure you allude to, you will not be wise in attempting to grow Melons in the same house. I do not say it cannot be done, but as Melons require a dry air when the fruit is ripening to bring up the flavour, you will run the risk of getting your flowering and foliage plants infested with red-spider, which every good gardener regards as a deadly enemy. You may grow a Cucumber plant or two early in the season without much risk, but if you value the permanent occupants of the house you will root them out by the middle of May. Lockie's Perfection Cucumber is a capital sort to fruit in pots, and if you put one plant in a pot 16 inches in diameter, and well feed the roots as soon as it begins to swell off the first fruit, you may obtain a fair supply up to the time that you may get them in a warm frame or pit. I have many times had good crops of Melons from pots of the size above mentioned, with the growth trained along the front of a Pine stove; but the air of a fruiting Pine-house in the months of July and August is generally much drier than that of an ordinary plant stove.—J. C. C.

— Both these may be grown in pots from 11 inches to 15 inches across, but, of course, in this way they require greater and more skillful attention in watering and feeding than when planted out. Melons especially often do remarkably well in large pots of good sound loam, not too rich, and made hot; but Cucumbers require a richer and lighter soil and more liquid manure.—B. C. R.

— These may be grown in large pots, say 10 inches or 15 inches over. Leave space for top-dressing, and give liquid manure when required. Both Cucumbers and Melons have been well grown in pots. Requires more care.—E. H.

5243.—**Potatoes for show.**—Two excellent kidney Potatoes for exhibiting are Snowdrop for the early shows, and Satisfaction for the later, both varieties of handsome appearance, and used more than any other kinds for this purpose. Reading Bunch, of the round kind, is good. It is red, and a very fine exhibition variety, whilst Beauty of Hebron is also useful for shows.—C. T.

— As a white, round Potato, including to the pebble shape, Satisfaction (Sutton's) is one of the largest and most handsome varieties that ever grew. Good examples of white Beauty of Hebron will be hard to beat in the kidney class; but if the highest form and finish is desired, the International Kidney or Sutton's Perfection would be preferable.—B. C. R.

— Windsor Castle, White Round, and Snowdrop, with Kidney are good varieties, not only good for show, but good for the table.—E. H.

FRUIT.

PRUNING AND DRESSING VINES.

The fruitfulness of the Vine has long been a proverb—in fact, if we want to describe or illustrate fertility, the Vine is pretty sure to be selected for the illustration, and a perfectly true one too. For under any sort of culture it will at least put forth any number of bunches, even though it be quite unable to perfect them; but there is a vast deal of difference in the size and kind of bunch that Vines will produce under different kinds of culture. But what I want especially to bring home to your readers is this—viz., that there is a great deal depends on the mode of pruning as to whether the bunches will be numerous and fine of their kind, or whether they will be less abundant and small of their kind. Now, I think it is pretty generally conceded that the spur system of pruning is the best for the majority of varieties of Grapes; and by the spur system I mean single rods allowed to extend, more or less rapidly, until they reach the top of the bunch, and the side or fruiting branches cut in every year to one or two eyes, the number of years it takes to furnish the house from base to summit depending a good deal on the strength of the Vines. Under this system excellent crops are produced for several years; but, as a rule, after ten or twelve years' hard cropping the bunches, although they may continue to be as plentifully produced, will gradually get smaller, which is only a natural consequence of the spur getting thinner, and the sap flowing more freely into the younger wood at the extremities. The same thing occurs in other fruits, notably in large standard Apple-trees, the finest produce being invariably found on the young wood at the extremity of the branches, and then the question arises—How are we to replace the old rods without the loss of a single crop of Grapes? Well, I find the best plan is to take a few young rods from the very lowest part that can be got, and train them for the first year between the permanent rods, keeping them close up to the glass, so as to get the wood well ripened at the next winter's pruning. They will be cut back according to their strength and ripeness of wood; and the rod which they are intended to replace is not cut out at once, but all the old spurs are cut down off to the height of the new rod, which is trained over it, and the top spurs are allowed to fruit for another year or two, or until the new rod has filled the space with new wood; and it is surprising how much the Vines, even if quite old, appear to be strengthened by the laying in of young wood. Some kinds of Grapes, such as Barbarossa, will become almost barren unless young wood is introduced, and all are greatly benefited thereby. Pruning should be finished by the end of the year, for bleeding is caused by late pruning. Clean the rods at once, and dress with some kind of insect destroyer that is safe and sure; one of the oldest and best is Gishurst Compound, for it destroys insect life and does not injure the buds. Anything of an oily nature is dangerous in warm lands because of its not mixing with water readily. Many Vines are spoiled by careless dressing. JAMES GROOM, Gosport.

Canker in Apple-trees.—Canker in Apple-trees is, I think, very much aggravated by the conditions of the soil and the manner in which the trees are managed. Some varieties are much more liable to canker than others. It is idle to say that all sorts of Apples will grow in any soil, no matter how favourable the situation may be as regards the climate, shelter, &c. I have here many instances of this. Rilonston Pippin as a standard, Scarlet Pearnan as a bush, and Gloria Mundi grown in the same way exemplify this too well. The first has been planted fourteen years, and during that time the tree has been planted at least three times in various kinds of soil; the stem is thicker, of course, but the head does not cover a bit more space now than it did when first planted. Growth has been made at times freely, owing to the change of soil, but the succeeding winter has laid the foundation of canker, which was fully developed the next season. Many examples might also be quoted of trees that showed decided signs of canker at one time, as the result of deep planting, but of a system of too close cropping. The constant adding to

the soil of manure and other materials raised the soil about the trees so much that the roots were deeply buried, canker in the branches quickly following. The spread of this was checked directly the trees were lifted, their roots brought nearer to the surface, and instead of the ground between the trees being cropped with vegetables, it was laid down to Grass. Soil that is heavy, therefore retentive of moisture and consequently cold during winter and spring, is conducive to canker in some sorts of Apple-trees, particularly if the roots are deep and away from the influence of the sun. Shoots that are not ripened owing to the causes above named are almost certain to be affected with canker. With such a large number of varieties, it is possible to make a selection suitable for any soil, but the difficulty is to know the offending sorts when making the selection.—E.

GRAPE FOR A COOL GREENHOUSE.

The Chasselas de Fontainebleau Grape may be seen in the Paris markets, packed in small boxes or circular baskets. This variety is not unfrequently grown as an early Grape in this country, under the name of the Royal Muscadine; but it is not so delicious when forced in our hot-houses as when ripened under warm sunshine on the white-washed walls of Thomey and Fontainebleau or St. Cloud. There are several varieties of Chasselas grown in French gardens, all of which are of excellent flavour; but this is the best of them, and the one most generally grown, as a desert Grape, for the French markets. The Vine is moderately vigorous in growth, and is easily recognised, even when not in fruit, by its peculiarly blunt-lobed rounded leaves. The bunches are generally small, rarely exceeding a pound in weight, even when grown indoors in this country, and grown out-of-doors in French gardens the clusters are smaller still. The berries are round and of a clear greenish-yellow colour, acquiring a pink or amber tint on the sunny side when fully ripe. Being of a peculiarly sweet, juicy flavour, and producing a crackling sensation when eating, it seems singular that this delicious little Grape does not more frequently find its way to our London markets, as it can be imported quite as cheaply as the Spanish Chasselas and Sweetwaters, and it is greatly superior to them in flavour. It bears packing and carriage well, and the only drawback is that it must be sold as soon as it is ripe, as it does not keep longer than a week after being cut, and this is, doubtless, the reason why our London fruiterers do not care to import it. As brought to the French markets, the bunches are wedged tightly into oblong deal or Poplar wood boxes, without any packing, each box holding from 3 lb. to 5 lb.; and, in fruitful seasons, these boxes may, as a rule, be bought at prices varying from 2s. to 3s. each. It is an excellent Grape for a cool greenhouse.

B.

PRUNING NEWLY-PLANTED APPLE-TREES.

SOME writers advise that newly-planted trees ought not to be pruned the same season as planted; others, again, say that instead of cutting them hard back, the points only should be taken off. My experience leads me to say both these plans are wrong, as I will endeavour to explain. Take, for instance, a standard Apple of any variety, but, for the sake of argument, suppose we name Beklinville, which is one of the best sorts for this form of growth. If the tree is not pruned the first year, but cut hard back the second, we lose a whole year's growth. The argument against pruning the same season as planting is that it is unwise to give two checks to a tree at the same time. The tree received one at its roots when being planted, and to cut the branches would be giving a second. The fallacy of this reasoning is easily shown. The tree, in its weakened state, through

planting, has not the power to push growth from all the buds the shoots contain. The sap, as a natural consequence, rushes to the tips of the shoots, a weakened growth being produced by the extreme eyes, while those buds nearest the base of the tree remain quite dormant. The result is that the tree at that part always has a bare stem. Now, if the tree had its weakened energies concentrated into a limited space of say 6 inches or even 8 inches in strong shoots, a much more satisfactory growth could be expected the first year. The plan of cutting off the points of the shoots, say a couple of inches from each, will result in only a few inches of new growth being added—perhaps a couple from the stronger and hardly any from the weaker ones. Several eyes at the base will remain dormant, while those that do push at all, with the exception of the leading one, will form fruit-buds. I suppose it will be allowed by all that the first object in a standard Apple-tree is to encourage growth, and not the formation of fruit-buds at so early a stage of the tree's existence. The simple topping of the shoots does that which is not required—the

FORMATION OF FRUIT-TREES instead of a free growth. The following year even these premature flower-buds will expand and probably set fruit, thus again weakening the growth of the tree. The proper method then that I consider gives the best results is to cut the shoots back



Grape (Royal Muscadine) Chasselas de Fontainebleau.

to within 6 inches of the base in the case of weakly grown trees, allowing a couple or so more inches to the stronger, selecting, of course, an outward bud to cut as being the best means of maintaining the desired shape of the tree. The result of this pruning will be that shoots from 1 foot to 2 feet will be made the first year, thus laying not only the foundation of the future tree as regards its proper clothing with branches from the base, but providing space for a full crop of fruit in a few more years. The first year should surely be devoted to the encouragement of growth. Of course, much will depend upon the manner in which the trees were planted and how they are managed the summer following the pruning. If they are allowed to suffer from want of moisture at the roots in consequence of a scarcity of mulching material or a scarcity of water, growth like that named will not be forthcoming. All newly-planted trees ought, however, to be mulched the first year; it not only saves time in watering the trees, but it keeps the roots cool and moist during the hottest weather. When the soil is dry it cracks, and allows what little moisture there is to escape by the action of the sun upon the soil drawing up the moisture through the cracks. The early part of February is a good time to prune newly-planted trees; no matter whether they be standards or bushes, the treatment should be the same in this respect. The only point of difference is that the shoots cannot always be cut to one uniform length as in the case of standards.

some branches on the bushes require a greater length of shoot to be left in some parts to give the tree the necessary shape. F.

BLACK CURRANTS.

WHEN well grown, the Black Currant is not only one of the most useful of fruit, but also one of the most remunerative. Of late years some growers have had a serious evil to contend with—viz., the Currant bud mite. Bushes or buds affected are easily noticed in the early spring, the buds having a rounded or swollen appearance instead of bursting out into leaf. The remedy for this is either to pick off the swollen buds and burn them or cut off the affected shoots. Syringing the bushes in the autumn with some insecticide is also resorted to as a safeguard. Happily, however, this pest is only local, so that it is within the grower's power to stamp it out. The Black Currant will succeed well on almost any soil and situation; it has also its likes and dislikes in this respect. For instance, in the West of England it may be seen thriving to perfection in the valleys of the Severn and the Teme. I have often been struck with the growth there made, the annual shoots from the bottom partaking more of the character of Willows. The above proves that the Black Currant is a gross feeder, and where it does fail, it must be for the want of adequate support or faulty pruning. The worst soil to contend with is a stiff clay, but even on this the bushes will succeed well if attended to as regards rich top-dressings. As regards

PRUNING, all that is necessary is to thin out any old bearing wood to allow room for the younger, which should be encouraged to grow right from the bottom. In the case of the Black Currant, all the lower buds are retained when the cutting is made, so that the future bush will partake of the character of what is termed a "stool." To produce a good stool, the bushes after planting should be cut down to within 2 inches or 3 inches of the ground level. I have renovated old bushes by completely cutting them down to within a few inches of the ground-line, and with the assistance of a good dressing of manure and burned garden refuse the after-growth has been remarkably strong. The burned refuse and manure form good material for top-dressing, which is very important, merely laying it on the surface to the depth of 2 inches, not forking it in in the least. It is not often that time can be afforded to apply a soaking liquid-manure or sewage, but where it can be given, there cannot be any question as to its value. I have often been struck with the heavy crops of fruit sometimes seen in cottage gardens where the bushes are growing on the brink of a brook or ditch. Where there is a choice of position, that which is low and moist and partially shaded is the best. The varieties of Black Currants are not many. Lee's Prolific being, perhaps, the best of my. Carter's Black Champion is also good, it also having the merit of not dropping so quickly after being fully ripe. Black Naples is also a good variety. Y.

Protecting Fig-trees on walls.

IN the most sheltered parts of the country the covering of the Fig-trees on walls may not be necessary, but to ensure a good crop it is essential to protect the trees in many districts. I find Bracken well packed among the branches an excellent protection. Of course it is necessary to unroll the healing or scattered branches, firing them closer home, and then cover with the Bracken. I prefer Bracken cut green and allowed to dry, covering all over with mats to keep the protecting material neat and from being blown about. If the Bracken is allowed to die down before being cut, it is brittle and worthless as a protecting agent. Figs are not readily injured when the wood is kept thin in the summer, and a good ripening season follows. It is after wet autumns that the trees suffer most, hence the necessity of protection. It is also advisable to cover with decayed manure the roots of trees requiring it. Those which are too gross should be mulched with leaves or dry litter.—G.

5253.—Pruning Vines.—Years ago two systems of pruning were advocated—the long spur and the short spur system; but all good growers now prune their Vines upon the latter

system. The *modus operandi* is this: Train a rod up from the bottom to the top of the house; but the first year it is simply cut back to 6 feet or 7 feet from its base, all side laterals to be cut clean out. When the buds start in the spring, train the top one up as a leading growth and the lower buds as lateral growths, but remove each alternate growth, as they would be too crowded. One or more bunches of Grapes will show on each lateral. At the end of the season cut back to a good eye, as near as possible to the base of the lateral.—J. D. E.

—Prune the Vines at once—the sooner the better. The rule is in spur pruning (which is the system generally adopted) to cut to a good bud. But Black Hamburg, Alicante, Muscats, and Gros Colman nearly always show plenty of bunches, and no harm will be done if they are cut back to one, or at the most two buds. There are cases where the roots have wandered away to deep, damp soil when the wood does not ripen up well, that a little longer spur may be left till time can be found to lift the roots.—E. H.

—Shorten back all the young growths of last year to within two or three eyes of their base, or in other words to the lowest strong or plump eye. Market growers of Grapes do not as a rule prune their Vines so hard as private gardeners, and obtain heavier crops and finer bunches in consequence. The reason of this is that the third eye is often much stronger than the second, and the fourth sometimes a better one still. When the spurs get ragged and "snaggy," the simplest and best plan is to cut the rod out, and train up a fresh cane from the base. Pruning should be done at once, before the sap begins to move again, especially where much heat is employed.—B. C. R.

TREES AND SHRUBS.

THE CUTTING OF EVERGREENS.

About Christmas-time and early in the new year there is usually a demand for Evergreens to use in various ways for festive decorations. It is not of their use that I now refer, but more particularly to the cutting of them. When there is a choice to a few days, a fine day should if possible be chosen. The work of cutting can then be performed with far greater comfort by the men, whilst at the same time it can also be done more carefully. It is a description of work that is oftentimes done in a perfunctory or haphazard manner, with no real thought either as to the appearance of the shrubs or their future well-being. Of course, what holds good in one kind does not always do so in another, whilst varied forms and styles of growth should also be considered. In my own case I have for several years been aiming at cutting Hollies so as to get the trees (for trees they are) into more of a pyramidal shape, not formal, as in clipped trees, but so much so as to give every opportunity for the lower branches to spread out and not be overshadowed by the branches above them. In this way I have under my care a number of well-furnished specimens from 20 feet to 30 feet and even more in height. These consist of the common Holly, the silver variegated, and the yellow-fruited kind. The soil, a light one, resting on gravel, suits them very well. Aucubas I find do best when they have plenty of room to develop into dense bushes; these when too tall are headed, 2 feet or 3 feet being taken off the tops. Young growths will follow in due course. With Laurels, a medium course of cutting is better in my opinion than either of the two extremes—viz., that of constant summer pruning to keep them, as it were, in accordance with some architect's plan, or excessive cutting down, as a workman would do it, leaving everything bare for a time. A deal may be done with Yews to keep them from extending too wide when the space is limited by merely cutting out the leading shoots. By the same process the Box-trees can be retained in a bushy and dense condition without being in any sense formal. When shrubs are taken in hand in time by judicious thinning out here and there, it will take years before they arrive at a size when a more radical course will be found necessary. This informal kind of pruning regulates the growth of the shrub and prevents strong shoots from taking the lead of the

weakening of the rest, with the consequent after results of a bareness both undesirable and unsightly also. It frequently happens that shrubs are left more to chance than anything else in the garden. As long as they look well at the time, be they ever so crowded, there is no thought given as to the future. This is a great mistake, the after effects of which cannot be so easily remedied. E.

STRAWBERRY-TREE (ARBUTUS).

The beautiful evergreen shrub (*A. Unedo*) should be in every well-planted garden, for no other is so cheerful throughout the autumn and early winter, when its dense mass of greenery is mingled with a profusion of flower-clusters and ruddy round fruit like undersized Strawberries, the result of last year's flower crop. There is no need to describe such a common shrub, which



Flowers of *Arbutus Unedo* Croomei.

is met with everywhere almost, especially in warm and coast districts, where it grows tree-like 20 feet or even 30 feet high, making huge globular masses of green. In inland districts it is liable to be cut down during very severe winters, but this so-called accident that no one need be deterred from planting it. If large bushes are killed down by cold, they almost invariably send up strong shoots again. When young it requires, in order to get it established, a slight protection during winter. It grows quickly in sheltered places, but dislikes shade, and seems to be most at home in a deep, light soil, though it is not fastidious in that respect. There are numerous varieties of this beautiful shrub, and some are superior to the original. One of the best is the red-barked Strawberry-tree (*A. Croomei*) (an illustration of which we give), which has longer and broader leaves than the common kind. The bark of the young shoots is brownish-red, and the flower-clusters larger and deeply stained with reddish-pink. The variety *rubra* has the flowers almost a bright-scarlet, produced abundantly in late autumn. One variety (*flora-plena*) has double flowers, while others differ from the original in the size and form of leaves. Thus there is the Oak-leaved (*quercifolia*), Myrtle-leaved (*myrtifolia* or *microphylla*), Willow or narrow-leaved (*salicifolia*), and the crumpled-leaved form (*crispata*), all of which are interesting, but not so beautiful as the common sort, or *Croomei* and *rubra*. The Strawberry-tree is a native of South Europe, and grows wild in the South of Ireland, and the peculiar charm it gives to Killarney is well known. The other

varieties of *ARBUTUS* are not so important as flowering trees, though they are invaluable evergreens. They are more tree-like than *A. Unedo*, making large, spreading masses of bold foliage. *A. Andrachne*, with smooth, ruddy-tinted bark, is the commonest, and is hardy everywhere in the south and coast districts. It reaches, about London, a height of over 15 feet. It grows wild in the Levant, and is a very old tree in gardens. *A. hybrida*, said to be a hybrid between *A. Unedo* and *A. Andrachne*, is hardy, and in growth resembles both its parents; its flower-clusters are larger than those of *A. Unedo*, and smaller than those of *A. Andrachne*. *A. Milleri* is handsome, because its flowers are pink and its leaves large. *A. procera* (also called *A. Menziesii*), from North-West America, not a common kind, is somewhat similar to *A. Andrachne*, but less hardy, and, like it, has

large leaves and grows tall. For a coast garden it is most desirable. Other kinds of *Arbutus* named in catalogues—*photinifolia*, *magnifica*, *Rollinsoni*, *serratifolia*, *laurifolia* or *andrachnoides*—are either identical with the foregoing or varieties of them. W.

The Witch Hazels.—These form a very interesting group of winter-flowering shrubs, not of great importance perhaps, but *Hamamelis arborea* is well worth planting in gardens of fair size. *H. virginica* is the best known, but not so ornamental as *H. arborea*, the former being a wide-spreading shrub, covered throughout the winter with a mass of small yellow flowers. *H. japonica* and the allied *H. Zuccariniiana* have pale lemon-yellow flowers, but those of *H. arborea* are rich golden-yellow, and stand thickly the leafless shoots. A tree of this in full bloom on a late winter's day is beautiful, the petals twisted, and their line colour set off by crimson calyces. This is sometimes described as a shrub, but is really a tree, although not reaching more than 7 feet or 8 feet in height in England, whereas in Japan, its native country, it will grow from 15 feet to 20 feet in height. A sunny spot must be selected, and the soil should be moist and sandy. *H. arborea* is also useful to plant with other things. Small plants, for instance, in a bell, the groundwork of which is the Christmas Rose, the *Hamamelis* between the clumps, or the dwarf, leafy, red-berried *Gaultheria procumbens* makes a pleasing picture. I do not recommend the Witch Hazel to be planted before other more worthy shrubs are in the garden, but in a good garden of shrubs it may have a place for the beauty of its flowers in winter, and its Hazel-like leafage in autumn, when it takes on rich orange-yellow colouring, whilst those of *H. virginica* are tawny-yellow. As regards habit, *H. arborea* is not very ornamental, *H. virginica* being more of a bush.—F. P.

A few good-flowering shrubs.—It is a pity that in comparatively small gardens more thought is not given to flowering shrubs, and less planted of such common uninteresting things as Privet. This note is prompted by what the writer noticed recently in a garden, in which Privet was almost exclusively used. This is a mistake, and one must think that the reason is good-flowering trees and shrubs are not well known. The Barberries, Thorns, Weigelas, the beautiful Rose *Acacia*, *A. hispida* (which produces a profusion of rose-coloured flowers), The Quince, *Daphne mezereum*, Pearl Bush (*Exochorda grandiflora*), *Garrya elliptica*, the Syrian Mallow, *Hibiscus syriacus* and its varieties, *Hydrangea paniculata grandiflora* (which bears huge masses of white flowers), *Magnolia conspicua*, *Olearia Haasti*, Mock Orange (*Philadelphus*, especially the dwarf-growing *P. microphyllus*, which produces a wealth of pure white fragrant flowers, a lovely, free-growing shrub), the flowering Currant *Ribes sanguinea*, the yellow-flowering Currant *R. aureum*, hardy Spiraeas (particularly *S. arifolia* and the dwarf-growing *S. Bumalda*, or the deep-crimson variety *Anthony Waterer*, *S. Lindleyana*), Guelder Rose, not forgetting the stiffer-growing *Viburnum plicatum*, that has deep-green wrinkled leaves and abundance of white flower buds. These are the names of a few leading kinds, but then we have Lilacs and other well-known things. There is, therefore, not the slightest reason for always planting evergreens of common sorts when we have a wealth of beautiful hardy-flowering shrubs, attractive for their flowers, and, in many cases, for the rich colours of the autumn leafage.—F. P.

The Mezerium.—In mild weather the *Daphne Mezereum*, the "Mezeron" of cottage gardens, is in bloom in late winter, but is often kept back by frosts until the early spring, when the flowers send a sweet fragrance over the garden. This is a shrub for all gardens, large and small, and in the smallest garden should be planted. If it is a friend of the cottager, why not of the amateur gardener, who goes without many beautiful things apparently because they are unknown to him? The Mezeron will grow almost anywhere, and requires a sunny spot. I know of an old bush that has flowered splendidly for many years past in a small front garden by a dusty roadside. The flowers are

purple, deliciously fragrant, and stand thickly the leafless shoots. There are, however, several varieties, the flowers varying in colour from pink to white, and also an autumn-blooming variety, named *autumnalis*, which has deep purple flowers. Besides the type, however, a favourite of mine is the double white and the single white, which are all as if covered with snow when in full bloom. They flower just a little later than the type, and in large gardens are worth planting a good deal, either in a group or to fill a distinct bed.—C. T.

5254.—**Cutting back a Magnolia.**—If there is no more room for the branches of the Magnolia to extend they may be cut back, but do not do so until all danger of very cold wind is past. The end of April is quite soon enough to prune it. I do not like cutting away any of the front shoots, as there is danger of removing some that would flower. The main-stem should be secured to the wall with strong mauls and tied with tar cord; to these the smaller branches may be tied so as to cover the whole of the space with foliage. Never mind about the shoots crossing each other, or their being four or five thick, because if any of them close to the wall die they can be cut out. The object should be to keep the plant well clothed with foliage, and then plenty of flowers generally follow. You cannot strike this Magnolia from cuttings; it is increased by layers. Even this, however, is a slow process, as it takes two years for the layer to make sufficient roots to bear being moved. Layering is done by bringing the branch down on the ground, burying a part of it 3 inches below the surface, and fixing it there with a strong peg. Make a small mound of earth over the part buried, and fix a stick to the end of the branch, so as to bring it up in an erect position, there is then nothing more to be done but to wait.—J. C. C.

The Magnolia may be cut back, but not now; wait till spring. If the plant is healthy it will break out of the old wood. May be rooted from cuttings under glass in sandy soil, kept close, though layering is a better plan.—K. H.

5255.—**Poplars.**—You may safely reduce the height of your Poplar trees to anything you like. It will not, however, materially decrease the root action, as they will soon begin to grow again. Seeing that they are pressing against the garden fence, and that you do not want such high trees, you had better take off their tops at once, and from these take some of the young straight branches and plant them between the existing trees. The branches may be 4 feet long, which should be planted in a trench dug out 1 foot wide and the same in depth. If you press the soil firmly about them they will form roots, and before the end of the summer will make some top growth, and in a few years develop into trees. You can then remove the old trees altogether. You will, of course, plant the young ones farther from the fence than the existing trees.—J. C. C.

—These trees will bear cutting back to any reasonable extent without injury, though it spoils the appearance of the Lombardy variety, of course.—H. C. H.

—Lopping Poplars will not injure them, and it will decrease rather than increase the root action—for some time, at any rate. Lopping will reduce the wind power, and they will consequently not press so much against the garden fence. The Poplars are probably the Lombard species.—K. H.

5244.—**Showy Hibiscus.**—All the varieties of the hardy *Althea frutex* or *Hibiscus sylvaticus* are good, except those with striped or bright coloured flowers. Avoid the horrible purple one seen in gardens, and select such as *Celeste* (blue), *carneo-plenus*, *albus plenus* (double white), and *Leopoldi*. This is a fine shrub, far too neglected in gardens, although quite a treasure, blooming late in the summer when very few shrubs are in flower. It depends upon the soil to what height the tree grows, in moist, deep ground, growing many feet high. I have seen several examples in Battersea-park, thus showing that it is a good tree or shrub for town gardens. Remember that it requires a good foundation, so to say, this being a deep soil, otherwise the results will be far from satisfactory. It is a good shrub to make a group in on the outskirts of the lawn, or to plant in front of shrubs with deeply coloured leaves, these bringing into bold relief the large, handsome flowers.—C. T.

Jasminum nudiflorum.—This is common enough in gardens of all sizes, but it is never grown in a really good way. It is left too much to itself, but when well grown few shrubs

are more beautiful, the shoots covering walls or fences and laden with bright yellow flowers in late autumn and throughout the winter even when the weather is mild. Such a climber is worth far more than ordinary treatment and certainly gains in beauty when the shoots of Ivy are trained amongst those of the Jasmine, the deep green and yellow mingling in a pleasing way. The Jasmine will grow in ordinary soil and the most exposed positions, but is always freer in bloom and growth when the more sheltered spots are chosen, as the flowers do not get cut about by inclement weather.—C. T.

Chimonanthus fragrans grandiflorus.—The sweet-scented *Chimonanthus* is a very old friend. It was introduced here as long ago as 1770 from Japan, and the variety *grandiflorus* is the best to grow, the flowers being much larger than those of the type. They appear without the leaves on the twigs, and are rather inconspicuous, as the white-yellow colour is very pale, but atoned for by the delicious perfume. It is unquestionably one of the, if not the, most fragrant shrubs in gardens, and a few sprays cut for the house are a welcome addition to the winter posy. The soil in which this shrub is planted—for a shrub it is, rather than a climber—should be rich and deep. Keep the growth nailed carefully to the wall, and, after the flowering period cut back each year those shoots that have bloomed, except the chief ones, which require little shortening. The new growth will bloom freely the following year. I sometimes see questions in *GARDENING* about the propagation of the *Chimonanthus*, which is best done by layering in the autumn months. There are several good specimens in England, one at Syon House, Isleworth, which covers a large space on an old high wall, and gives plenty of the flower-laden shoots to fill the winter bowl.—C. T.

TREE OF HEAVEN (AILANTUS).

This is a well-known hardy tree, young plants of which cut down every year give a fine effect in the flower garden, and can be depended upon to do this in all seasons. The *Ailantus* should be kept in a young state, with a single stem clothed with its superb pinnate leaves; it can readily be kept in this form by cutting down annually, taking care to prevent it from break-



Tree of Heaven (Ailantus).

ing into an irregular head. Vigorous young plants and suckers in good soil will produce handsome arching, elegantly divided leaves 5 feet to 6 feet long, not surpassed by those of any stove-plant. Propagated easily by cuttings of the roots. It is a native of China and Japan.

5224.—**Ailantus glandulosa.**—I have one of the above trees, but I never prune it. Its common name is Tree of Heaven, called so by the Chinese. The other tree, *Dimorphanthus mandshuricus*, is a tall growing tree with leaves measuring a yard across, closely resembling the *Samach*, the stem being covered with thorns, also the ribs of the leaves. The flowers are borne on the top of stem, seeds size and black like *Elaeagnus* when ripe. It is a rare thing to ripen seeds in our country. Last summer, being hot and hot, it did so with me. Both natives of Japan.—E. VORLES, *King's Norton*.

RULES FOR CORRESPONDENTS.

Questions.—*Queries and answers are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of GARDENING, 37, Southampton-street, Covent-garden, London. Letters on business should be sent to the Publishers. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.*

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as our knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in *GARDENING* should mention the number to which they appeared.

5203.—**Tomatoes under glass.**—At what distance should Tomatoes be grown from the glass?—J. F. P.

5204.—**Oil-stove.**—Would it be injurious to plants to put an oil-stove in a conservatory to heat it?—A. B. C.

5205.—**Pancreum fragrans.**—Will someone kindly let me know how to treat *Pancreum fragrans* after flowering?—QUESTAST.

5206.—**Colous-cuttings.**—When is the right time to strike *Colous*-cuttings, what compost is most suitable, and how should they be done?—J. F. P.

5207.—**Vegetables for show.**—Will someone please to inform me the time it takes to grow Beet, Carrot, Parsnip, to perfection for show?—T. W.

5208.—**Gloxinia bulbs.**—Ought *Gloxinia* bulbs to be allowed to get rot in the winter? And if not, what is the cause, consequence, and cure?—A. E. W.

5209.—**Privet from cuttings.**—Would someone kindly inform me the best time to put in cuttings of Privet, as I have a young hedge I am about to cut down?—I. P. R.

5210.—**Tomatoes, &c., in a greenhouse.**—In a greenhouse (span-root) 2 fruit by 6 feet, would it be possible to grow Tomatoes and Cucumbers? If so, how many of each?—J. F. P.

5211.—**Cider refuse.**—Is Cider-muss (the refuse from Cider-making) when thoroughly rotted and refined to (black) soil, a good substitute for leaf-mould? It is extremely light.—J. F. P.

5212.—**Ipomoea pandurata, &c.**—Will anyone kindly give me some information as to the treatment of *Ipomoea pandurata* and *Cliffort's Hardy Ipomoea*? I cannot get them to blossom or even flourish. They just live.—A. B.

5213.—**Cinerarias.**—The leaves of many of my *Cinerarias* curled up this autumn. They were kept in a cool-house, with moderate watering, dusted with sulphur, without much effect. What was the cause and cure?—A. E. W.

5214.—**"Geranium"-cuttings.**—My "Geraniums" in a greenhouse are making quick growth. Would this suit your growth if inserted now in a temperature of 55 degs, as cuttings make good plants for summer bedding, and would the old roots make new growth and blossom in summer?—J. F. P.

5215.—**Treatment of Ferns.**—How ought Ferns to be treated when a pest is present? I do it as follows: I cut off all the leaves, many of which are dead, and have the roots, which have usually formed a hard mass, and filled the pots. I then shake away the rest of the mould, repot in a sound mixture of loam and leaf-mould, and give a copious watering. Is this right?—A. R. W.

5216.—**Making a propagator.**—As the time will soon arrive when the use of a propagator will be required by amateurs to raise such things as Tomatoes, cuttings, &c., it would be a real benefit if someone would kindly advise how to construct a simple contrivance to be heated by a small lamp, and state what kind of oil or spirit should be used to avoid the collection of carbon above the flame?—W. G. T.

5217.—**Osmanthus.**—In my garden in Hampshire I have four plants of *Osmanthus*. They never have blossomed until this year. One of the shrubs was moved and planted to the north. It was a mass of bloom in September; the scent of the flowers so strong they scented the whole space in front of the house, and so continued until the frost came. Would not the *Osmanthus* force well?—F. H. C., *Wokingham*.

5218.—**Wireworms in leaf-mould.**—Will "J. C. C." kindly help me again out of difficulty? Last autumn (twelvemonth) I had the falling leaves mule into a heap, which has been a good deal turned up, but it is full of wireworms. What can I do to get rid of them? It is well spread out on the empty spaces in the vegetable garden now would the frost kill them? I wished to use it for a Potato-bed.—IVY BANK.

5219.—**Starting Begonias.**—I have some *Begonia* tubers I want to bloom outside next summer. I have cold-frames, but no greenhouse. Will someone kindly tell me when and how best to start them? Would they do planted in a box about the end of February or the beginning of March, and placed on a warm shelf in the dwelling-house, and when struck potted singly or transplanted into a cold-frame until bedded out?—AN AMATEUR.

5220.—**Fruit-trees trained on a wall.**—Mine have been trained for years by nailing with shreds to a brick wall. I think the shreds and holes, made by a succession of birds in the wall, harbor insects. Is this so?

And would it be better to train the trees by tying them to wires strained along the wall after "pointing up" and stopping the existing holes? If so, how far apart should the wires be? The trees are Peaches, Apricots, and Green Gages.—H. G.

6281.—Growth on pots.—I have been troubled lately by a white growth on some of the pots in my greenhouse like the white mould on a damp cheese. Temperature of the greenhouse averages about 50 degs. It does not appear to come from overwatering, as some of the plants have been allowed to get quite dry, and yet have it. I use Ichthonic Gumbo liberally at times. Can it come from this; and if so, is there any prevention? Or is it that there is not enough sand in the soil?—A. B. W.

6282.—Shrubs in a garden.—I have an old house, which is surrounded with grounds planted with Rhododendrons (fancy and common), Yews, Hollies, Portugal and common Laurels, and Box, all of which have grown up into a neglected mass—the Rhododendrons being 6 feet to 8 feet high; the Yews spread out into great awkward bushes; the Hollies with a dozen bushes; and the Portugal and other Laurels are 19 feet to 12 feet high, and with great branches as big as one's arm—in fact, all tangled together and spoiling one another. I am told my only plan is to cut them all down to about 2 feet from the ground in the spring, and that they will then shoot into round bushes, and I shall in the autumn be able to move them. Will someone kindly tell me: 1, Is this correct? 2, What is the best time to do this? 3, Will they be very much injured in the autumn of the same year that they are cut?—Y. A.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

6283.—Coclogyne Dayana grandis.—Pondicola for the proper treatment of this plant? Mr. Curtis found this species in Borneo growing upon branches of trees near the streams in the hot lowlands. I should say it neither requires cool treatment nor drainage.—M. B.

6284.—Cypripedium montanum vars.—Faulstich asks for details of the management of these Orchids? They will grow equally well under roof or full treatment with the other forms of this species. I prefer the former, however, for B, using a little loam in the soil.—M. B.

6285.—Odontoglossum Nebulosum.—J. H. and F. T. both send me flowers of this species, which appears to be a somewhat singular time for them to be blooming. They are, however, good, small flowers, and speak well of the atmosphere about London this season; but if we had a continuance of the fog of last Saturday night, they would have stood a chance of being cut off, I am thinking.—M. B.

6286.—Dendrobium Euclophotum (H. Myers).—This is the name of the plant, and a very long time it remains in flower. I believe it was imported some few years ago from the Malay Archipelago by the Messrs. Veitch and Sons. It has a somewhat fanciful name, but it has recently several varieties of semi-white flowers, which appear to be at a time when very few Dendrobiums are flowering.—M. B.

6287.—Epidendrum ambiguum (J. Beiler).—Yes, this is a very novel-flowered plant, and yours is a very good form of the old species, with the lip of a nice straw colour, and which I like far better than the form having a white lip; both, however, have the blooms excessively sweet. It thrives best when grown in a libok of wood, with a little Sphagnum Moss, and hung up at the warm end of a stove-house.—M. B.

6288.—Dendrobium densiflorum and D. crassinode (T. J.).—These are plants which both require to be kept cool and dry; the first named is, however, an evergreen plant, and does not require so great a drying as the last named, which is a deciduous plant, and which should now be about sending up their flowers, and in which case they require more water and greater heat, and more water as they are beginning to grow again, whilst D. densiflorum must be kept dry and cool for some months later yet.—M. B.

6289.—Oxleya Triana is a fine flower which came to me on Christmas Eve, so that I may say, with a great deal of truth, that I have never been without a flower of some of the hibiscus section for more than a week at a time for the whole season. The photograph sent by Mrs. Burton appears to be of a very good variety called delicate, which is very beautiful, and is preferred by many to the absolutely pure-white form called alba; but this does not hold good whenever it comes in a matter of size or purchase for then the pure-white flower has the ascendancy.—M. B.

6290.—Odontoglossum Uro-Skinneri (J. Jenkins).—Yes; I know a good many British growers who have a great aversion to such freaks; but it will be not of the least consequence after the plant has done blooming. The right way for this plant to adopt is for the spike to rise up from the side of the bulb near the base, but at other times they do proceed from the apex of the bulb, but it is not so frequent as when it occurs to Vanilla, Saccolabium, upon which I have seen it occur, when the growth is stopped, and that stem grows no more, but some side shoots.—M. B.

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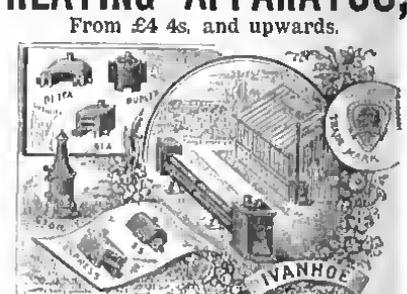
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Founded by W. Robinson, Author of "The English Flower Garden."

JANUARY 20, 1894.

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TREES AND SHRUBS.

FOREST-TREES NEAR GARDENS.

The kitchen and fruit gardens should be kept quite distinct, and apart from the ornamental portions of the ground, for the former cannot possibly produce fine fruit or vegetables if overshadowed by lofty trees, while the latter can hardly be ornamental without them, and any attempt to effect a compromise usually ends in failure. Forest-trees are frequently used for sheltering the fruit and kitchen gardens from cold winds, but it requires a correct knowledge of the distance the roots of any given kind will travel, or a good deal more than goal may be done by the shelter, for Ash, Elm, and many of the deciduous trees one finds planted close up to the kitchen garden will send their roots quite as far from the base of the tree as they will send their branches up in the air, and a full-grown specimen will attain from 80 feet to 100 feet in height, and it is really waste to labour and manure to attempt to cultivate crops in their vicinity, for although they make a feeble attempt to grow, the strongest-rooted subject soon gets the mastery, and nothing short of grubbing up the trees will remedy the evil. Evergreen Conifers do not send out their roots to such a distance as deciduous trees do, and in addition they give shelter more at the time it is really needed, for it is in the early spring that bitter winds are so trying to vegetation, and a plantation of Scotch or Spanish Firs gives quite an improved atmosphere to a garden; but they must be at least 50 feet from the boundary, as I would rather grow my fruit and vegetables in an open field than in a garden that was shaded as well as sheltered by lofty trees.

J. Groom, Gosport.

A good variegated Dogwood.

Variegated shrubs, as a rule, are not worth much, the variegation being sickly and producing bad effect in the garden. But an exception to the rule is the Variegated Dogwood (*Cornus sibirica spathi*), which is not only well variegated, but the leaves are not influenced by a hot summer sun, as are many things, whilst it dies off in the autumn of a rich scarlet shade. The leaves are of a golden tint in summer, and the shrub is perfectly hardy, growing in ordinary soil and a well-exposed position.—C. T.

Hydrangea paniculata.—There are few more beautiful dwarf shrubs than the variety of *H. paniculata* known as *grandiflora*, but much disappointment is sometimes caused by purchasers not getting the true form. They buy the species, which is far less beautiful than the variety, so in purchasing be careful always to name the variety. The flowers of *H. paniculata grandiflora* are borne in profusion in large, massive heads, and when the shrub is grouped on the outskirts of the lawn it forms a splendid feature at the flowering time.—C. T.

5282.—**Shrubs in a garden.**—Such a tangled mass of shrubs certainly requires cutting; but I should not cut all down to 2 feet.

For instance, the Yews, Hollies, and Rhododendrons may be cut into the shape you want them to assume; the Hollies, for instance, may have the number of leaders reduced, but unless naked at the bottom they may not require cutting down. Yew trees, again, may be cut to form pyramids, as they will break very well from any part of the old wood. Rhododendrons may be treated on the same lines, as may also some of the Portugal Laurels. Common Laurels and other common things may be cut down lower to form undergrowth. A judicious pruner, instead of cutting all down to one level, would aim at producing a picturesque group, retaining as much individuality as possible. In the autumn, after cutting down, some may be moved if necessary. Cut them back in March.—E. H.

On the whole you have been rightly advised about the shrubs. You will, however, find that the better forms of Rhododendrons and great Box-trees do not respond so readily to being cut down as the others. There is no help for this, and therefore they should all be dealt with alike; but do not be persuaded to cut down some branches and leave some; leave the whole of them or none at all, as it frequently happens when some branches are cut down and others left that those which remain use up all the strength of the roots, and as a consequence the cut-back parts die. If I hesitated at all about leaving any of the shrubs untouched or only lightly pruned in, it would be about the choice Rhododendrons. If these are not too much in growth, I might be disposed to prune them into shape, if it can be done without cutting into wood not more than two years old. If the garden is much exposed, wait until the end of March before doing the work. In a sheltered place the cutting down may be done three weeks earlier. I do not think any of them will be ready to move in the following autumn; certainly not the Box and Hollies. The latter should not be moved at all.—J. C. C.

The best plan will be to cut all the plants hard back in the spring as suggested. April will be the best month, as then they will break into fresh growth directly. I should not cut them all down to the same height, but leave some 3 feet or 4 feet high—the larger plants towards the back, I mean. Early next November go over the borders, digging out any that have not broken well, or are not wanted, and disposing the rest to the best advantage. If the plants are cut round with a sharp spade about a month beforehand, they will move both better and more easily, and by dropping in a nice young plant here and there towards the front, a very good effect may be made. In case any of the shrubs break very thickly, the shoots had better be carefully thinned out—that is, unless you prefer "pin-cushion" plants to natural ones.—B. C. R.

5277.—**Osmanthus.**—The *Osmanthus* appears to have blossomed in many gardens last summer where it had never done so before. The explanation lies in the exceptional weather we had last year. Given suitable treatment, the *Osmanthus* might be available for forcing; but it would, however, require to be grown in pots under glass for a great part of the year.

rip up the wood, without which it is very evident it would not always form flower-buds. It is, no doubt, a very suitable plant for a cold house if it was always kept under glass, as the foliage is always presentable.—I. C. C.

6590.—**Privet from cutting.**—Privet cuttings may be planted at any time now in open weather. It is one of the easiest plants to strike from cuttings, if planted 3 inches or 4 inches deep, and the soil made firm.—E. H.

Privet strikes very freely from cuttings, and it may not be too late to put them in now. It is usual to get good, well-ripened young growths taken off at a joint, and put them in somewhere in the open garden early in November. They seldom fail to do well. It is necessary, or at least best, to cut through the young shoots at a joint, and in planting treat them in firmly.—J. B. E.

The early autumn—in October or November—is the best time to insert the cuttings, but it may be done now, or as soon as the weather permits, and if placed in a border that is lightly shaded from the sun, and kept moist to dry weather in the spring, most of them will root yet.—H. C. H.

The best time is autumn; but you can put them in about the middle of February with fair prospects of success. Make the cuttings about 9 inches or 12 inches long, and plant them in sandy soil three-fourths of their length. Make them firm, and use the hoe among them a few times in the spring.—F. H.

Verbenas.—Whilst very little interest can be found in Verbenas grown in pots and kept under glass, or planted out in frames where they may produce fine trusses of flower to be loaned for exhibition, there is much that is interesting and beautiful in plants grown in the garden, wherever or anywhere in the summer. Whilst named varieties are still grown in some gardens, and last year I met with a stock of Purple King, Scarlet Defiance, and other old ones at Abinger, Surrey, yet the bulk of plants seen in gardens now is raised from seed, which has so far become asserted that plants can be furnished from seed, white, blue, scarlet, and flaked coming fairly true to colour. That form of raising plants is so simple because no trouble is given to put in cuttings in the autumn or to keep them safely through the winter. It is rather a surprise to find that with so strong a taste prevailing for mixed flower-beds in the summer, especially of the kind that has a carpet of creeping plants and tall plants thinly disposed, seedling Verbenas are not largely employed for carpeting purposes. White, blue, and scarlet hues blend very well, and would make capital groundwork for *Fuchsias*, *Cannas*, *India-rubbers*, or similar plants. Seed may be sown in warmth during February or early in March, and will with ordinary care give strong, well-hardened plants in 3-inch pots to plant out towards the end of May. It is an advantage that, once well seasoned, Verbenas are fairly hardy, much more so indeed than are many other summer bedding-plants. We cannot use Begonias, now so much the rage, for filling beds everywhere, and Verbenas have a grace and elegance about them that even Begonias lack.—D.

5261.—**Growth on pots.**—The white mould you mention certainly does not come from overwatering. The cause lies in the opposite direction. Your allowing the plants to get dry simply increases it. Soft, or insufficiently burnt, pots turn green when wet, and white when dry. It is a certain sign of the state the soil is in. If you keep the plants in the white mould will swell slightly, and soon become a green, mossy fungus. Drought is the sole reason.

INDOOR PLANTS.

CINERARIAS.

The improvement in the flowers of Cinerarias has been very marked during the last twenty-five years, as they are now much larger, the petals broader, and the form more symmetrical. While there has been this improvement in form, it is somewhat remarkable that there has not been any new colours of a definite character added. This is the more noteworthy because in nearly every other florist's flower great advances have been made in this direction. With respect to the increase in the size of the flowers, I do not find it to be any gain. What is gained in size is lost in symmetry, and added to this is a loose and ungainly plant that no amount of good cultivation seems to improve. I am alluding to the Continental strains of this flower which are sent to this country as superior to any other strain. For three years in succession I grew a strain obtained in this way, and although plenty of the plants produced flowers 3½ inches and

of April is the season when the plants should be at their best. In former times the bulk of the plants did not go out of flower until it was quite safe to turn them out-of-doors in some sheltered corner to ripen their seed, but the practice of modern cultivators has altered a good deal in regard to the time the plants are had in bloom, and this has a tendency to lower the merits of the flowers. Next to this, as I have incidentally remarked, rich feeding is decidedly injurious, especially during the early stages of growth.

LIQUID MANURE of any kind, until the plants have been put into the pots in which they are to flower, should not be given. As a matter of fact, these pots ought to be full of roots and the lower-stem rising before any liquid is given. As regards soil, there is nothing better for them than three parts good mellow loam, one part leaf-soil, and a good sprinkle of coarse sand. In a compost like this the plants will produce good heads of flowers if they are not subjected to more heat than is good for them. The cold-pit is the proper place for Cinerarias, while frost can be kept from them by the use

excellent habit, branching out regularly, and growing in the exact outline of trained specimen plants without a single stick or tie. *Specimen Traversi* makes fine bushes, as do most of the other sorts, but unfortunately they are not hardy enough to stand very severe frost, and get cut down or much disfigured, consequently they can hardly be recommended for permanent planting out-of-doors; but they do best outside from May until October, when several kinds will help to keep the greenhouse gay for some weeks, as they flower freely in the autumn.—*J. G. Gosport.*

PROPAGATING PLANTS.

There may not be in many cases, especially with amateurs, sufficient room in a few weeks to do all needful propagation, what with bedding "stuff" and other things, to keep the proper supply of plants for pot-culture. Anything, therefore, that can be attended to at once should not be delayed. The present is, for instance, a very suitable one for propagating

CARNATIONS for next autumn and winter flowering. Where any have been struck in the autumn, those now put in will form a good succession to them, the former flowering in early autumn. The cuttings are not always fit to take off at one time, but this will not matter, being rather an advantage than otherwise, two, three, or four batches being the best to secure a continuance of bloom. I am more impressed than ever with the excellent properties of *Winter Cheer*. It is a worthy companion to *Miss Jolliffe Improved*, whilst as a white, *Mrs. Moore* is strongly recommended. I have now got a batch of cuttings of those sorts striking, most of which were lateral shoots pulled out at the junction with the main stem; others were taken from leading growths simply because we were short of them. These cuttings have been placed five or six into 3-inch pots around the sides of the pots and plunged in a gentle bottom-heat frame of about 75 degs., with a temperature in the house at night of 60 degs. to 65 degs. This treatment will, I think, suit them very well. Previous to taking the cuttings the old stools were in a night temperature of 50 degs., rising by day, so that the difference for the cuttings is not any too much. The soil used for striking is about half Cocoa-nut fibre, the rest loam and silver sand. Sheets of glass are placed over the frame, but there is a fair amount of ventilation on each side through it not fitting closely. I find the crickets a bit troublesome in eating the cuttings; if this continues I shall give them some growths from outside to nibble at, and then kill them, if possible, with hot water. As soon as the cuttings are struck they will be gradually hured to the usual atmosphere, and soon afterwards be taken to a somewhat cooler house. Pipings from Pinks for pot culture can also be put in now, not that there is any time lost, but I find them strike better before the weather gets much brighter. A few old stools of

BOUVARIAS should now be placed in heat to start the plants into growth for early cuttings. Those who have not thus far taken any note of *Priory Beauty* and *Mrs. Robert Green* will do well to work up a stock of them. They have in either case the free habit of *Vreelandi*, the former a soft-pink, the latter more of a salmon shade. *Zonal Pelargoniums* for next autumn and winter-flowering should be struck now, or as soon as possible. With these the better way is striking singly in 2½-inch pots to avoid any after check. Ainery at work will answer well for these cuttings, failing a pit that is suitable for them. What has to be guarded against in this case is an excess of moisture, more so even than in that of striking cuttings from bedding varieties which have been resting more through the winter than the others have. The earliest flowering *Salvias* can also be propagated now; these will do well where the Carnations are being struck. Of these, *Salvia splendens* and its variety *Braunli*, a dwarf form, and *S. Bethelli* (rose and white), with *S. Heeri* (scarlet, now in flower) are about the best for autumn and winter. *S. gomeriflora* being more of a spring-flowering variety, propagation should be deferred for a time. Where the old-fashioned scented-leaved *Pelargoniums* are esteemed for their fragrance, and any demand is anticipated for cutting them, it is very advisable to set about the propagation of these also, so as to



A good type of market Cineraria.

more across, the petals were so loosely arranged that it was difficult to find a well-shaped flower, and besides this there was a great want of variety in colour. All points considered, what is known as the *Covent Garden* strain (see illustration), is the most useful to grow for conservatory decoration. The plants are of good habit and they throw up large heads of perfectly formed flowers. The variety of colours is also great, and a large and well-proportioned head of flowers can be obtained from a rather small plant. The average English strain produces much larger flowers than the *Covent Garden*, but in the hands of a good many cultivators the plants are made through rich feeding to produce such large leaves that the effect of a nice head of flowers is spoilt owing to the larger proportion of foliage. There is another part of the management of the present time which tells against the possibility of securing shapely plants. I allude to the too general practice of getting the plants in flower early in the season, which necessitates the stock being brought on in a closer and warmer temperature than is good for them. The middle of March to the middle

of nuts, as they like to be near the glass and on a bed of coal-ashes. As they are very tender they should be taken to a heated structure when there is danger of severe frost, but not otherwise. It is hardly necessary to grow named varieties now that such excellent strains are to be had, as if the seed is obtained from a good source, varieties equal to the named ones may be had. In raising a stock of plants from seed there is a tendency at the present time to sow too early when large plants with good heads of flowers are required. If a few are required to flower early, the seed may be sown about the middle of May, but plants that are required to bloom at their proper season should be obtained from seed sown a month later.

J.

5246.—**Veronics in pots.**—These are amongst the easiest of plants to manage, and they succeed admirably in a greenhouse temperature; in fact, on the south coast they are planted out, and left summer and winter, growing in large bushes, and forming a splendid sight when in full bloom. They are also of

keep up the stock. In my own case I have struck a good number of cuttings during the winter on a ledge at the back of some Gardenia and Ixora pits. This has been just the place for them, hardly a cutting failing. Now onwards they will strike easily enough in a fair warmth; the warmth of ainery that is fairly advanced will suit them.

CURTAINMENTIONS.—If the usual stock has not been already secured, some more cuttings should be put in as soon as fit. In doing this, do not lose sight of the usefulness of the early autumn varieties as represented by the Des-grange family, La Vierge, and others. In any case, if the old stools are still on hand, it will not be advisable to cast them aside just yet unless the pits and the room are really needed at once. Where early plants of Fuchsias are likely to be wanted, some old stools should at once be put into a good warmth for cuttings, these being taken off before they get too long and then struck in nearly all sand. Only the most reliable kinds should be looked to for early flowering, for which Mrs. Marshall is scarcely beaten yet in its way. Double Primulas should now soon receive attention; it may be possible that the plants are still giving a fair amount of bloom. Even if this be the case, a few should have all the flowers cut off them and then be given a little more warmth; then in a week or two the cuttings will be fit to take off. In the propagation of these, an excess of moisture has to be guarded against as much as anything. Given a fairly warm house, say 55 degs., to 60 degs., they will strike very well in such a place upon a moderately dry bottom; a hand-light, with a movable top, will make a good place for them. Those who cannot—as a rule, strike them satisfactorily should adopt the layering process, first trimming off the elder leaves and then filling up close to the young growths with Cocoa-nut-fibre and sand, or, failing the former, some finely-sifted leaf-soil will answer the purpose. In either case, this newly-added soil should be kept moist to encourage root-action. H.

7278. — **Solanum capsicastrum.** — I would advise "K. J." to grow his *Solanum* on in pots, up till danger of frost is over, then plant out in a sunny spot, and keep well watered. If he has already cut his young plants down close to the pot, they will soon push out a thicket of young shoots from the base. After these have grown a few inches they should be pinched, to induce the formation of a number of side shoots, and if kept under glass until the end of April, or early in May, according to locality, they will be well furnished with shoots that will quickly be covered with flower. They must not be pinched after they are planted out, as the object is to get the crop of berries set as early as possible, or else they will not ripen in time to be of any use. Early in September they may be lifted and potted, placing them in a shaded place for a few days, until they will bear full exposure without flagging, when they may be put on shelf near the glass to finish colouring the berries.—J. G., Gosport.

7265. — **Pancretium fragrans.** — These plants are easily entitrated, and should be freely grown with a good supply of water, and when the bulbs are well formed the plant enters into its season of rest, and at that time does not need much water; but the leaves should not be allowed to flag, and the plant ought to be kept in a greenhouse temperature. When the plant has well rested after flowering, and is ready to start into growth again, water freely, but do not repeat unless it is absolutely necessary.—J. D. E.

— After flowering the plants should be encouraged to make new growth by affording them heat and moisture. A temperature of not less than 60 degs. by night, with a rise of 10 degs. during the day, should be provided. Now is a good time to repute if the roots are not in good condition, but when the drainage is perfect and the plants in pots 8 inches to 10 inches in diameter, re-potting should only be practised seldom. This *Pancretium* flowers more freely when the roots are a bit cramped, providing they are in a healthy state. A compost of three parts fibry loam, with one of peat and leaf-mould, with a free mixture of a little silver sand and charcoal to keep the whole

porous, should grow this plant well. When growth is being made give abundance of liquid-manure to the roots to promote a healthy, vigorous growth. Syringe the foliage twice daily with tepid water to keep the leaves clean and free from dust. When the leaves have reached their full size gradually withhold water for a time, so as to give the plants a rest, but do not allow the foliage to suffer in consequence of dryness at the roots.—S. P.

PERPETUAL-FLOWERING OR TREE-CARNATIONS.

The Tree-Carnations, so called from the tall struggling form that the old varieties formerly grown naturally had, have been superseded by a



A Tree or Winter-flowering Carnation.

race of plants that possess a bushy habit of growth, with free and continuous disposition to flower, so that with a sufficient number of plants they may be had in bloom all the year round. Carnation flowers are justly held in high estimation for bouquets and other arrangements of a like nature. Perfume, enduring properties, and beautiful colours go to rank them amongst the most attractive of all flowers. They can be raised in different ways from seeds, cuttings, and layers. The seeds should be sown about the beginning of February in shallow pans or boxes, in sifted loam, with some leaf-mould and sand added. Just cover the seeds with soil; stand in a temperature of 55 degs., or 60 degs., and they will soon vegetate. Then place near the glass and give air in the day so as to prevent the growth from being drawn; as soon as the young plants have got two or three leaves each put them singly into small pots, using soil similar to that in which the seeds were sown. The increase of sun-heat will now do away with the need of fire-heat, except when the nights are cold. When the roots have made some progress the plants should be moved to a cold frame and aired freely, so as to prepare them for planting out in the open ground towards the end of May. Choose

an open place where the soil is of a good description, and dig in some rotten manure and leaf-mould. Put the plants a foot apart, with a little more room between the rows, pinch out

the points, otherwise they will not be furnished with sufficient shoots, and give water in dry weather. In September lift them and put in 6-inch or 7-inch pots in good rich loam, to which add a little leaf-mould, rotten manure, and sand; water moderately, and stand in a light house or pit near the glass. The plants should now be furnished with from four to half-a-dozen shoots each; these will push up flower-stems through the autumn, and come into bloom sooner or later according to the warmth they are subjected to. When the flower-buds are prominent a temperature of 50 degs. in the night will accelerate their opening; such as are required for later flowering must be kept cooler. After blooming the plants ought to be again turned out in May, or later in the case of those that have been kept back for late spring flowering. In all cases cut out the old bloom-stems at the bottom as soon as the last flowers are over; if this is not well attended to with the young plants, as well as with the old and large, they get into a tall unsightly state, and are much less manageable. When out

IS THE OPEN WOUNDS they must not want for water or be allowed to suffer through the ravages of aphides. Again, in September, take up and put them in pots 7 inches or 8 inches in diameter, and treat as in the preceding season. A portion of the plants this second season should not have their shoots stopped; these will come into bloom early in the autumn, and be succeeded by the remainder that have had their shoots pinched back about July.

CURTAINMENTS should be struck in autumn, several together in 5-inch or 6-inch pots filled with a mixture of sand and loam. Stand them on a slight hot-bed, and if kept shaded and moist they will soon root. Then they must gradually be subjected to more air and a lower temperature, after which put singly in small pots, and keep them through the rest of the season in a frame or pit. Winter out of the reach of frost; stop the shoots and turn them out in a bed in May, and treat subsequently as recommended for the plants raised from seed. Layering should be carried out in the summer, about the same time as in the case of the exhibition varieties of Carnation. Aphides are often troublesome, but can be got rid of by fumigating with Tobacco or dipping in Tobacco-water. Mildew sometimes affects them; for this dust with flowers of sulphur. There are now many good kinds, a list of which can be found in most trade catalogues. B.

7276. — **Gloxinia bulbs.** — Tubers of these plants may become "soft" in two distinct ways—one when they have been touched by frost, when as soon as they show they are "soft," and, in fact, rotten, and for this there is no remedy. Again, if kept too dry and warm, they become limp, and shrivel to some extent; but unless too far gone this does no great harm, though of course it reduces the vitality, but if surrounded with moist Cocoa-nut-fibre and kept moderately moist they will soon plump up again. When not thoroughly and gradually ripened off they are much more liable to shrivel in this way. The best way to keep them is in half-moist Cocoa-nut-fibre in a temperature of about 50 degs., and then if sound and good to begin with they will remain plump and firm throughout, and start away strongly in the spring.—B. C. R.

Gloxinia bulbs should not get soft at any time. Probably the bulbs are rotten, or if badly ripened they might shrivel if kept in a very high temperature. Shrivelled bulbs seldom do much good afterwards.—E. H.

— These generally get a little soft when at rest in winter; but it is a mistake to allow them to go too much in this direction. The best way to treat them is to place the pots on their sides in a hot-house, not a greenhouse, and give no water until it is time to start them again in the spring.—J. D. E.

— I am afraid your bulbs have either been frozen or have got dry rot through being kept much too dry. They certainly ought not to be sown. The consequence is death, and supposing my opinion to be correct, the cause and cure suggest themselves. Put them up soon, and in future keep them in sand that is not sufficiently dry to perish them.—P. U.

5273. — **Cinerarias.** — I had a case of the leaves of *Cinerarias* curling up badly in a house 50 feet long quite filled with the plants, and was surprised at it, as such a disaster had never occurred before in a long experience. I thought it must be mildew, but some of the leaves, badly curled inwards, bore no traces of the parasite, and they were quite free from insect pests. Another thought occurred to me.

We were experimenting with some new fumigating material, and I put that down as the cause, only to find out I was wrong again. At last it occurred to me that it must be the cold winds acting upon the soft, delicate tissues of the leaves, and this it undoubtedly was. Too much air had been admitted on cold days, and ever since, when cold winds are blowing, I open the ventilators only at the highest point, and that but sparingly. The result, no curling of the leaves.—J. D. E.

Cineraria-leaves very often curl up when attacked with green-fly, and if this was the cause sulphur would not be the remedy, though Tobacco-powder would, or the plants may be dipped in a solution of Sunlight soap, about half a tablet in 3 gallons of water, used warm, say 50 degs.—E. H.

5266.—**Coelus-cuttings.**—Any bits of these plants—side-shoots or tops—will root in a few days in sandy soil in a brisk hot-bed, or in a stove or propagating-house, in February, March, or April. They are, indeed, about the easiest things to strike that could be mentioned, given only a brisk and moist warmth. The cuttings will root all right in sand or Cocoa-nut-fibre only, but a mixture of loam, sand, leaf-mould, and Cocoa-nut-fibre in equal parts is best.—B. C. R.

Coelus-cuttings will strike any time in a temperature of 55 degs. The best time for working up stock is in spring, from the middle of February onwards till May, whenever cuttings can be obtained.—E. H.

5274.—**"Geranium" - cuttings.**—The young growths now made in a greenhouse will do very well indeed to put in as cuttings, and they will strike root freely and well in a temperature of 55 degs.; but a moist atmosphere, which would do admirably for other cuttings, will not do very well for Zonal Pelargoniums, which, I presume, is what is intended by "Geraniums." The old stools will start freely again in the same temperature, or in a lower greenhouse temperature. Both the cuttings and the old plants will do admirably for bedding-out in the summer.—J. D. E.

Yes; the young growths you mention will root freely and form suitable plants for bedding out next summer. You will find it an improvement if you can stand the pots containing the cuttings upon a hot-water pipe or flue, seeing your temperature is but 55 degs. These cuttings will bear a lot of heat at the root, but must be shifted as soon as rooted. The old stems will break and be almost as useful as if not cut down, and will be more bushy.—P. U.

Young shoots of "Geraniums" will strike now in a night temperature of 55 degs. to 60 degs, and make good plants for summer bedding if helped on for a time in heat; after being potted off the old plants would make new growth, and would blossom well in summer. If potted on they will do well for filling vases or for centres of beds.—E. H.

5279.—**Starting Begonias.**—I saw a very nice bed of Begonias last year obtained from tubers that had filled the same spot the season previous, and which had kept all the winter in a box filled with dry soil, and this was placed on the brick floor of a coal-cellar. Early in April the lady got other boxes and after filling them with soil put the tubers in them 6 inches apart. The boxes were then taken to an upstairs room and placed in front of the window where they remained until the end of May. Treated in this way the tubers made a display equal to many others that had had the advantage of greenhouse treatment. You, however, with your frames might do better still. The first week in April make up a bed of soil in a frame and plant the tubers in it, give no air until growth appears, and cover the glass at night with a thick mat to exclude frost.—J. C. C.

Do not be in a hurry to start Begonias intended for the open air. March will be quite time enough. They will start themselves when the season comes round if placed in a box and the soil just moistened afterwards. They will do in the cold frame if covered at night, so that frost cannot enter.—E. H.

CROTONS AND THEIR CULTURE.

In answer to "B. H. J." and others, we here give an article on the subject.

PROPAGATION is not at all difficult, where a close pit or propagating frame is at command, with a brisk bottom-heat to induce the cuttings to strike root quickly. If young plants, for table decoration or other purposes for which they are to be used in a small state, are required, select cuttings with clean, straight growth, well-developed and finely coloured foliage, and single stems. If the object is to grow plants for specimens quickly, the better plan is to choose cuttings of a larger size with three or four growths or even more; these when struck will make a

better beginning from which to start a specimen plant; indeed, by making a good selection for this purpose a season may thereby be gained. My practice is to throw the cuttings into a tank of water for an hour or two when first severed from the plant, in order that they may absorb as much moisture as possible. When inserting them make them firm in the pots; and if of large size a support or two may be of service. I generally find them rooted and fit to withstand ordinary stove treatment in a month or six weeks.

CULTURE.—As soon as the young plants have filled their cutting-pots with roots they should be shifted into larger sized pots. This ought not to be overlooked, for if by chance they happen to be allowed to suffer from want of water at this early stage of their existence, they will often succumb to it, or, perhaps, lose some of their leaves, and this they should not do to any extent if due attention is paid them. In fact, it is essential, in the case of small decorative plants, that they should be clothed with foliage down to the pots. Those intended for specimens should be again shifted as soon as they require it, in order to maintain a free, vigorous growth. I find them do well in a compost of good mould, silicious peat (such as one would select for Ferns) and turf loam in about equal proportions; to this I add a fair amount of leaf-mould and some half-inch bones or lime-meal. Charcoal is of assistance in the case of specimen plants if the loam is of an adhesive character. A liberal supply of silver sand should be added, and abundance of drainage should be given, so that the plants can always be freely supplied with water, of which they can take a good deal. They also revel in a moist atmosphere and a maximum stove temperature. The syringing should at all times be plied vigorously among the foliage. I use it at this season of the year at least three times daily; later on, when the weather is hot, another turn will be given them at nightfall. Under this treatment ordinary tying material soon becomes rotten;

contrary, the points of all the shoots should project, in order to give as much diversity as possible, and admit light to the young leaves. Some kinds do not make much lateral growth, and where this is the case pinching must be frequently resorted to. Shading is unnecessary even during bright sunshine, unless the weather is excessively hot, and it should not then be used for any length of time. The best plan is to arrange the Crotons so that they do not receive the shade that is necessary in the case of most other ornamental foliageed stove plants. Their rich colours will then be intensified.

INSECTS.—Crotons afford a refuge for insect pests, against which an incessant war must be waged if the cultivator wishes to produce plants that will do himself credit. In the case of mealy-bug, brown and white-scale, I use nothing but the Chelsea Blight Composition. Other insecticides are doubtless also effectual, but I adhere to the one that I have found from experience to be so. For black and white-thrips fumigation will answer, if repeated two or three times in rapid succession. Red-spider is also a great enemy to Crotons, and I have found another insect closely allied to it, but even smaller, giving almost endless annoyance for some time, ransing the young leaves to fall before they were half grown. As a remedy for this and red-spider, I was advised to keep a bag of soot in the tank from which the water was drawn for syringing. This had the desired effect. Having found this remedy so beneficial, I make it a practice to always keep a small quantity in the tank from which the water is used both for watering and syringing. Soot is not only valuable in a manorial point of view, but a great deterrent to many insects, and even the fronds of the tenderest Fern are not injured by it. I would strongly advise anyone to try the soot-bug remedy and watch the result.

VARIETIES.—There is an immense number of sorts now in cultivation, very many of which are so far inferior to others as to make their



Croton "Baron Franck Seillière."

my practice, therefore, is to use tarred string, which lasts longer. In training specimen plants I have found a pyramid form to be about the best, and in my opinion preferable to that of a bush. In the pyramidal form the height ought to be about one-fourth in excess of the width. This shape, I think, displays their beautifully marked foliage to the best advantage, but a too formal outline should not be adhered to; on the

growth unnecessary. The following are all distinct and handsome kinds: C. angustifolius, C. Crown Prince, C. Baron Franck Seillière (here figured), C. Disraeli, C. Evansianus, C. Hawkeri, C. Johannis, C. majesticus, C. picturatus (Princess of Wales), C. Queen Victoria, C. roseo-pictus, C. undulatus, C. velatus, C. Warfield, C. Weidenhuth and C. Williamsi.

H.

THE KITCHEN GARDEN.

EARLY BRUSSELS SPROUTS.

THE value of a few rows of early sprouts is great where a variety of choice vegetables is required. I am well aware that some persons object to early sprouts before the frost has mellowed them, as it is termed, but much of this is owing to the method of serving or cooking and to the way they are grown, as, though we have not too much praise to bestow upon cooks in general in the way of making the best of the garden products, to a certain extent want of space, insufficient moisture, and feeding are at times the cause of poor vegetables. Early sprouts are at times strongly flavoured, often through being boiled too long in one lot of water. If when partially cooked the sprouts are given fresh boiling water the strong flavour will be removed and a better colour imparted to them. Of course, it is a little more trouble. Not only sprouts, but many other vegetables need similar attention. By sowing early it is also objected to that the sprouts are too coarse or large. This can be avoided. I do not like large sprouts, though they seem to be much appreciated by the market people. Large sprouts soon fill the basket, but are not so good as a smaller, bullet-like growth—hard, and without waste. To get a medium-sized sprout the grower should eschew the sorts recommended for size or length of stem; they are no doubt profitable to the large grower or for exhibition, but for the latter purpose they are now even less grown. When Brussels Sprouts are served at table a miniature Cabbage is not expected, as it is impossible to serve these large kinds to the best advantage, so that in private gardens much of the delicacy is lost when large coarse kinds are grown. There is very little trouble in securing a few early plants if seed is sown at the end of January or early in February. I prefer to sow on a mild heat—that is, a bed made up with fresh leaves early in the year and allowed to settle down before sowing the seed. Others may not have similar accommodation, and may only require a small number of plants. In such cases a single box of seed may be sufficient, but with the latter greater care is required, as often the smaller quantity, if placed in excessive heat, is brought on too rapidly, with the result that the plants are weakly from the first and cannot give a fair return. When sown in cold frames the plants are sturdy, and better able to withstand our cold winds in the spring. I have previously advised a dwarf variety, and for years have grown Paris Market, a dwarf early, small, solid sprout of good flavour, but no doubt there are others equally suitable. Another important point is sowing thinly, as there are more plants ruined by thick sowing than anything else. Early transplanting is also necessary, lifting with as much care as possible. In exposed positions much can be done in the way of shelter by drawing deep drills before planting out, in all cases using a trowel to preserve all the roots possible. Another equally important point is deeply digging ground with plenty of decayed manure. During the early autumn months in case of drought, a good soaking of water or liquid manure occasionally will do much to remove the strong flavour often objected to. I would also advise ample space at planting; a yard between the rows is none too much, and 18 inches or even 2 feet between the plants.

G.

Sowing Cauliflowers.—Many people now rely upon plants raised in the beginning of the year for their principal supply of early Cauliflowers. This being the case, it is now time the seeds were sown. The plants must not be hurried on, thinking to make up lost time, as if so they will be useless, as instead of forming neat little heads, they will turn in prematurely, or, as gardeners say, "lunton." It is also advisable to sow one of the now recognised early varieties, such as Veitch's Early Forcing or Snowball, and to follow on select either Early London or Dwarf Erfurt. Walcheren might also be sown. If a forcing variety is needed to grow on in pits, Veitch's Forcing is very good, although with the late kinds of Broccoli now in commerce, these with the earliest Cauliflowers bridge over the season. That is, if the Broccoli should not be killed by frost,

The seeds should be sown thinly in shallow boxes of light soil, and to ensure quick germination place the box in a gentle warmth. As soon as the seedlings are well through the soil remove to cooler quarters near the glass, but not where they are likely to become starved through either too cold or draughty quarters. Watering must also have careful attention to prevent the seedlings damping off. Directly they are large enough put off into 4-inch or 5-inch pots. The soil also should be substantial, three parts loam to one each of leaf-soil and pulverised horse-manure. Keep close until established, afterwards removing to a greenhouse shelf, eventually placing in a cold frame. The plants may also be pricked out into low light frames. In this case place a layer of rotten manure to the depth of 2 inches on a hard bottom, and above this the same depth of holding loam and a little leaf-soil, into which prick the plants not less than 4 inches apart.—G.

POTATOES FOR SHOW.

THOSE who ask for the names of the best Potatoes to grow for show, I notice want them chiefly in the months of July and August. These early dates somewhat limit the range of choice of kinds, as in neither case are all the sorts available so early in the season. For the first mentioned month the earliest varieties only will do under ordinary treatment. The best of these of kidney shape is Rivers' Royal Ashleaf. This is a very handsome Potato, and the tubers are of uniform size. It is in every way preferable to Myatt's Ashleaf, as the tubers are not so pointed. Ringleader is another first early kidney that is as good for table as it is for exhibition; the tubers are not very large, but they are uniform in size and they are conspicuous for evenness of outline. The earliest round variety is Sharpe's Victor, and if care is used in selecting the tubers a very handsome dish can be had. The cultivator must, however, be prepared to grow a larger number of stools to select from than is necessary in the case of some other sorts. Dalmahoy is an old sort that is still retained by a few exhibitors of early Potatoes, as it ripens off fairly early, and the tubers are of medium size and even in outline. It is a white round sort with shallow eyes. Should larger sorts be wanted than I have mentioned, Beauty of Hebron and Early Puritan may be selected; but under ordinary treatment the tubers will not be ready before the end of July. Those who require one dish of round and one of kidney shape should grow two of each, sons to have a choice. They will find it a good plan to cover the sets with rotten tan or leaf-soil 3 inches in thickness, as the tubers will come out cleaner from either of these materials than from ordinary soil. Those who do not want to exhibit before the middle of August have a much wider choice of sorts, as the second earlies will be available. Amongst these The Dean is a handsome purple kidney, and unsurpassed in its colour. Covent Garden Perfection is a white kidney of a refined appearance when well grown, as the tubers are of fair average size, without the slightest trace of coarseness. International Kidney grows to a large size, and with care in selecting can be arranged very conspicuously on the exhibition table. Its size and even outline are very impressive with some judges; but I would not include it in my selection unless I felt pretty sure that size stood a better chance of winning than high table quality in smaller tubers. Three good round second earlies will be found in Sutton's Seedling, Snowdrop, and Reading Russet. The last named has rather flattish tubers, which are of a dull-red colour. This sort makes a very telling dish in a collection of three round varieties. At a country show at which I was judging last November, I made note of the following sorts as being exceedingly telling dishes: Grampan (red), Main-crop Kidney (white), Chancellor Kidney, Schoolmaster (round, white), and Vear of Laleham (round, purple). J. C. C.

5270.—**Tomatoes, &c., in a greenhouse.**—I can quite sympathise with an amateur who wishes to grow Tomatoes and Cucumbers in a small greenhouse, but the question arises, what else does he expect to grow? The Tomatoes and Cucumbers would do best

trained to the roof of the house, and if the seed is sown now it would require a much higher temperature than greenhouse plants would thrive under to get anything like good growth into the Cucumbers. Three plants of each would quite cover the roof of the small house, and if light was so much excluded by the leaves of the Cucumbers and Tomatoes the plants underneath would do little good. I would recommend sowing the seed of the Cucumbers and Tomatoes about the first week in April, and by the time the plants covered the roof the greenhouse plants would do well out-of-doors, and the house would be free to give them a hot-house temperature, and the entire glass-roof might be covered with the growths of the occupants of the house. It would never give satisfaction to grow Cucumbers in a greenhouse with greenhouse plants.—J. D. E.

By exercising great care you may grow a few Cucumbers if you plant them at one end of the house, but in such a small structure you will find it get so hot in summer that the Cucumbers will get infested with red-spider, unless you shade that part of the house and keep the Cucumber-plants well syringed two or three times a day. The Tomatoes will do right enough if you give them plenty of air in hot weather. Five Tomato-plants on a single stem, and two Cucumbers on each side, are as many plants as you require. The Cucumbers should have the coolest end if you want them to hold on all the summer.—J. C. C.

Better be content with either Cucumbers or Tomatoes. It may be possible to do unmy things which it is not wise to do; besides, the house is too small for two such crops. As an experiment the thing may be done, but it will pay better to keep to one crop. The two plants require different treatment, and except in experienced hands the chances are that one or both would fail.—E. H.

It has been frequently stated that these two subjects do not do well together in the same house, the former requiring free ventilation and to be kept moderately dry, while Cucumbers luxuriate in a warm, moist, and close atmosphere. If you must grow both, plant eight Tomato-plants on one side, keeping each to a single stem, and training them up near the glass, and three or four Cucumbers on the other. But you will find it far more satisfactory to grow one or the other, and not both.—B. C. R.

5267.—**Vegetables for show.**—To obtain a few early roots sow Beet and Carrots end of March on warm, deep soil. Early Horn Carrots and Turnip-rooted Beet may be sown a little earlier. Sow Parsnips end of February. Something must be allowed for latitude, as in a cold district the dates given above would be rather too early. I am assuming the show would be held some time in August, as this is the usual month for holding country shows. If the show is later in the season the Beet and Carrots need not be sown before middle of April, as mere size is not so important as well-grown roots, good both in colour and shape.—E. H.

You must sow Parsnip seed in February in open weather, and Beetroot and Carrot in the second week in April. Dig and manure the ground at once, stirring up the bottom soil to a depth of 18 inches. All the subjects named should be thinned out as soon as the plants are large enough, so that they stand 18 inches apart in the rows. All of them will be benefited if given root-water once a week in dry weather if the soil is at all poor. You must, however, be guided by the condition of the foliage in applying stimulants, or you will get more leaves than roots. If you find the foliage getting too vigorous, leave off applying stimulants.—J. C. C.

Scarcity of Lettuces in early spring.—After such severe weather as we have just experienced there may be a scarcity of Lettuces during the next two or three months, as even those plants stored or planted out in cold frames when not much frosted have in many instances suffered from damp, as it has been impossible to admit light and air. Those who have a daily supply of green salad to send to table will do well to prepare for fresh supplies by timely sowing in frames, choosing an early quick-growing variety of the Cabbage type. A small, quick-ripening kind, such as Veitch's Golden Queen, should be chosen.

This forces readily, and is of dwarf, compact growth. Harbinger is also excellent for sowing in heat in boxes, and cutting in a young state. This system is one that could often be made available in cases of a deficiency, sowing the seed in boxes and cutting in the same way as Mustard and Cress. Of course, the produce is small, but for the salad-bowl it is equally useful, and in the early part of the year much appreciated. For the supply of single Lettuces, a few plants of the varieties named pricked off into boxes or in a frame soon turn in.—W.

VEGETABLE MARROW CULTURE FOR MARKET.

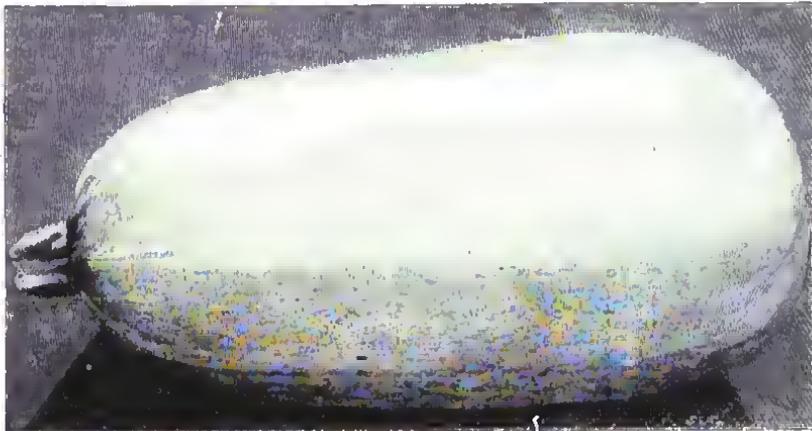
VEGETABLE MARROWS constitute one of the principal summer crops in the immediate neighbourhood of London, and, where soil and other conditions are favourable, they are very productive. They require, however, a rich and substantial soil, liberally manured, and also one that does not readily become parched in summer; therefore light and dry soils are not so suitable for them as such as are heavier. Early in March hot-beds are erected for producing Vegetable Marrows, Cucumbers, Celery, and other plants from seeds, the Marrows being either sown thickly in pots or pans of common soil plunged in the beds, or broadcast on a bed with a few inches deep of soil placed over the fermenting material. As soon as the plants show two rough leaves they are pricked out into other beds or into pots. The usual method is to prepare a series of frames set on slightly heated hot-beds; on the surface of these to place a few inches deep of soil, into which plunge 6-inch pots, filled with common garden mould to the brims, as thickly as they can be stowed together. Into each of these pots two Marrow plants should be dibbled and here they should remain till planting-time, hardening them off by gradual but increased exposure in fine weather. The first plantation is made out of doors during the first week in April, but the plants make little progress until the end of the month. The ground is marked off in lines about 10 feet apart, and each plant is 6 feet or 8 feet asunder in the row. Where each is to be planted, a hole about 20 inches deep, and 2 feet or 2½ feet wide, is dug out and filled with fermenting manure, which is covered over with the soil that has been thrown out in the excavation. Here the plants are planted, the contents of one pot being put in every ridge, and covered over with hand-lights or large clishes. A little earth is at first drawn around the base of the lights, so as to keep all close and free from cold currents of wind, and, in the event of frosty or cold windy weather setting in, mats or litter are also placed around and over the lights. Excited by the heat from the fermenting manure beneath them, and protected from cold overhead, they are almost as snug as in a hot-bed, and consequently they soon take kindly to their new quarters, form fresh roots, and begin to grow. When this is the case the lights are tilted up a little on the south side by means of half bricks or small flower-pots, during favourable opportunities, but shut up at night. When growth, however, begins to make rapid progress, the lights are left a little tilted up at night, so as not to injure the shoots that are pushing forward, and require more room than is afforded under their little glass-houses, until finally the lights are entirely removed, which will probably be in the latter half of May. This plantation, when it does begin to grow in earnest, grows most rapidly, and from it fruit is generally cut in the first or

second week in June—much certainly depending on the warmth of the season.

LARGE GROWERS have generally from four to six plantations of Marrows, each succeeding the other by a fortnight, so that the last planting is made late in June. The seedlings are all raised on hot-beds, as already described; but I have known instances in which the seeds have been sown in June, in clumps of four, where they are intended to remain permanently in the open fields, and afterwards reduced to two; this plan is, however, a very uncertain one. Until the middle of May the plants are planted out on the manure-pits, as in the case of the first sowing; but less care is necessary for them. Where the supply of lights and clishes is deficient, round vegetable half-bushel baskets are used; but, unless these are covered with mats or litter, in the case of frosty winds the plants beneath them often perish. After the middle of May, lines are drawn on the open fields at the required distances apart, and the Marrows are turned out of their pots and planted in the ground, which received no further preparation than that of a slight digging. If the weather be warm and genial, they generally do well, if cold and wet many of the plants frequently succumb; but the blanks are made up from a reserve stock, which is always at hand to meet such emergencies. Although the distances apart of the first planting is 10 feet by 6 feet or 8 feet, that of the June plantations is 15 feet by 10 feet or 12 feet, and the intervening crops are planted at corresponding intermediate distances.

regards thinning the overcrowded vines; but sometimes the growers mulch the ground with litter, which not only enriches it, but preserves its moisture, prevents to some extent evaporation, and keeps the fruit clean from grit. As soon as the plants begin to bear, every fruit is gathered when it attains a marketable size, no matter whether they are sold or not, for if any were left too long it would tend to render the plant less fruitful. They are gathered three times a week, the gatherers being supplied with fruit-collecting baskets, a stick, and a knife. With the stick they turn aside the leaves of the plants in search for the Marrows, and they are thus enabled to go over the ground quickly, and without much bending of the back. When each gatherer has filled a basket, it is carried to the outside of the plantation, and emptied into a heap, or into large baskets or a waggon stationed there to receive them. The trampling the Marrows seem to undergo in the process of gathering does not seem to injure them much. In August some good fruits are selected and marked by inserting an upright peg alongside of each, and these are allowed to

REMAIN ESTABLISHED UNTIL RIFE, when they are cut and placed within frames or in exposed situations before the sun, so as to become thoroughly ripened. They are afterwards placed in a warmer in some of the sheds, to await a convenient season for extracting and washing the seeds. After the middle of September the demand for Vegetable Marrows diminishes; consequently, they are not after that time worth the ground they occupy. Sometimes they are cleared off the ground at once, and at other times they are left until frost completely kills them; but in all cases the land is raked off and carted to the manure-heap before mowing or digging the ground, which is usually planted at once with Coleworts. B.



OUR READERS' ILLUSTRATIONS: White Vegetable Marrow. ForWARDED FOR GARDENING ILLUSTRATED FROM A PHOTOGRAPH SENT BY MR. NORMAN BLAKE, BEDFORD.

Beet "Cheltenham Green-top."

—I am very fond of this variety; indeed, I have often advised its use, but when sown on good land it grows rather too large. I find it best to sow it on rather poor ground. I never saw Beet till the second week in May, and find by so doing that I obtain

The earliest crop is planted on ground just cleared of Radishes and Celery, or, if the Radishes be not cleared at the time of planting, the Marrows are planted in every alternate alley between the beds, thus permitting the Radish crop to be removed at convenience. For the later crops, ground occupied by spring Spinach, Radishes, autumn-sown Onions, Cabbages, or Cauliflowers, forms a good medium.

SPACE between the rows is not lost during the minority of the Marrows, but is cropped in within 2 feet of them with Lettuces, in addition to which there are generally three or four lines of Cabbages or Cauliflowers planted along the centre of the space. Turnips also sometimes form the inter-crop. When the Vegetable Marrows begin to grow, if the weather be dry, little basins of earth are drawn up to them with a hole for the retention of water, of which they get a good supply until their foliage covers the ground, and thus prevents speedy evaporation from it. The plants begin to fruit when the vines are 3 feet or so in length, and continue growing and fruiting until frost, drought, or millew renders them useless. In a dull, rainy season, provided it is warm, they will thrive apace and fruit heavily; but in a hot and dry one they are short-lived and unprofitable. When they are growing pieces of stone or brick are sometimes placed on the advancing vines or they are pegged to the ground to cause them to root at the joints and thus to find themselves increased means of support. No care is, however, taken of them as

just the roots must desired—neither course nor forked. When sown too early or on rich land I do not know of a worse kind for forking and splitting, but, treated as advised, it is all that can be desired. I consider the flavour superior to that of Dell's Crimson and the colour is very good. The Cheltenham Green-top I have now grown for twelve years, and find no other kind to equal it for flavour. This kind originated in one of the large market gardens round Cheltenham, where immense quantities are grown for the milland markets.—S.

5263.—Tomatoes under glass.—Tomatoes may be grown at a considerable distance from the glass, and they will do very well indeed if they have plenty of light and air; but when they are grown so far from the glass, and shaded by Vines or something else between them and the sunlight, they do not succeed well. The best crops of Tomatoes are obtained when the plants are within a foot or even less of the glass roof; in fact, the nearer to the glass the better, if the plants do not run into immediate contact with it.—J. D. K.

—Tomatoes will do very well trained a foot from the glass, or any greater distance if not shaded by any other plants.—E. H.

—The nearer these plants are to the glass the better, provided the leaves do not actually touch it. If the wires or rods are fixed 8 inches or 9 inches from the glass that will do nicely.—B. C. R.

Brussels Sprouts "Dwarf Gem."—This kind, under proper conditions, will bear soil, and when got out early, has stems about 18 inches in height, and these are packed from bottom to top with those set solid sprouts that are not so strong-flavoured as are larger ones.—D.

FRUIT.

KEEPING LATE GRAPES.

The accompanying illustration represents a capital glass which is used by Mr. Stanton, of Park Place, Henley-on-Thames, for keeping Grapes. It is a great improvement on the bottles generally used, and is very cheap. The receptacle is made of clear glass, and having a wide mouth, water can be easily added from a small watering-can as required without the trouble of taking it down or removing the Grapes. Having square sides, too, it may be moved along in the racks to suit the size of the bunches, as there is no need to fix it, the rails being just sufficient distance apart to admit the bottles between, and fixed at such an angle—as illustrated—that the bunches hang clear. The weight of the bunch will press the increased end of the stem against the upper side of the bottle, and so prevent its slipping out. It may be urged that as Alicante and Lady Doyne's—two of our best late Grapes—often produce their best bunches near the main stem of the vine, such bunches could not be kept in these bottles through the stem at the base being too short; but there is no difficulty in this, as the Grapes will keep very well if the terminal end of the shoot be inserted in the bottles. It is always best to leave about 18 inches of stem beyond the bunch when the Grapes are cut, as otherwise the berries are apt to crack through absorbing too much of the water when first stored. It is well also to cut off the immersed end about once in three weeks to maintain a free passage for absorption.

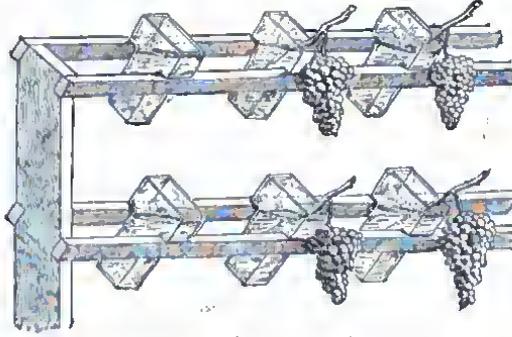
H.

FRUIT GARDENS.

AMATEURS in very many instances display a lamentable want of system in their arrangements of fruit-trees and bushes, and not a few private gardeners are content to plant in a haphazard fashion. Vegetables and fruit can be grown together with a fair amount of success, but in most instances the results would be far more satisfactory if the trees and bushes were grouped together, the vegetables also having their quarters wholly given up to them. The fact of the gardens being on a small scale, or say half an acre or thereabouts in extent, does not materially alter the case, unless to strengthen my arguments in favour of some system of arrangement other than that which generally passes for such. If either standard or half standard fruit-trees of any kind are dotted about the garden, these greatly interfere with the cultivation of the ground, and in the course of a few years vegetables cannot be profitably grown under or very near to them; whereas low or small fruits succeed admirably planted as an undergrowth to the roots. The ground, being broken up to a good depth, or hasted tumbled where the subsoil favours this proceeding, and in fairly good order as far as fertility is concerned, will support the trees and bushes for several years without manurial dressings being applied, while in after years a good surface of solid manure forked in or otherwise during every second or third winter will be all that is further needed. Digging among or about fruit-trees and bushes is most injurious to these, as it inevitably destroys very many of the best or most fibrous roots. Vegetable culture simply drives the roots of fruit-trees down into the soil, and in many cases very poor subsoil, the usual result of this injurious deep root-action being first a strong unfruitful top-growth, and then a gradual decline in vigour till they become stunted, the crops being of poor quality accordingly. Now if

THE TREES AND BUSHES are all grouped together, preferably in one quarter, or else alongside the walks, there is a greater likelihood of these receiving fair play, the vegetables also thriving far better when they get the full benefit of deeply, well-cultivated ground and are not unduly shaded down by the roots of the scrubby bushes, and Strawberries too old ap-

poverty-stricken to produce fruit worthy of being protected from birds prevail in far too many gardens, and more often than not are most apparent where there is no system of arrangement. In these days of cheap vegetables and fruit these must be well grown, or they will not pay for the labour and room expended on them, and I would, therefore, strongly advise the owners, or those in charge of badly-arranged gardens, to take steps at once towards rectifying the blunders that have previously been made. Large bushes of Currants and Gooseberries can be moved readily and without the loss of a crop, always provided an ordinary amount of pains is taken in lifting them so as to preserve a good-sized ball of soil and roots. Old



Glasses in place of bottles for keeping Grapes.

Raspberries do not transplant so well, and the better plan in this case is to form a fresh plantation of these, preserving the old stock till such time as the young canes are strong. Cherries that have not been partially or wholly lifted during the past ten years cannot be moved so easily or safely, but younger trees or any that have been cut round with a view to causing the formation of a thicket of root fibres not more than 3 feet from the stem—a distance of 2 feet being preferable—can be shifted with ease and safety. Aucubas, however, ought not to run any great risks with what good trees they may be the fortunate possessors of, but there is nothing to prevent many of them from making quite a fresh start, more especially with young trees not interfering with the best of those they already have till such time as the new trees are producing freely. Evidently the cost of trees and bushes has no deterrent effect on many owners of small gardens, though they seem to prefer to buy a few every winter and to dump these in promiscuously. Better, far better, that a good, well-selected stock be purchased and properly planted when the garden is first taken possession of, compensation for this judicious outlay commencing during the second summer after planting, and gradually improving till at the end of about ten years, when all would most probably be at or near their best. Even when the trees and bushes are grouped together at one end of a garden mistakes can be, and not infrequently are made, in arranging them too thickly. If

TOO MANY STANDARD OR HALF-STANDARD TREES are planted, the chances are these will soon overgrow and render of little value the bushes among them. What may be termed the orthodox distance for planting standards is 25 feet apart each way, White, Red, and Black Currants and Gooseberry-bushes being arranged 5 feet apart each way all over the intervening spaces. If the standards are valued more than the undergrowth, and there is no mistake about their productiveness during an average season, it may be thought desirable to have rather more of these and fewer bushes. In this case the standards may be planted more thickly if due regard is paid to the habit of the kinds and varieties, those of strong growing, spreading habit alternating with those either less vigorous or of more erect growth. Plums are admirably adapted for alternating with Apples, Pears also as a rule requiring less space than Apples. If Apples alone are planted, then ought such spreading varieties as Early Julien, Duchess of Oldenberg, Warner's King, Blenheim Orange, Brandy's Seedling, Golden Noble, Claygate Pearmain, and the Korol, Peasegood's Nonpareil, Golden Orange Pippin, Wellington, and Winter Queen,

ing to alternate with the more erect-growing Echlinville, Worcester Pearmain, Keswick Codlin, Manks' Codlin, King of the Pippins, Baunman's Reinette, and Pott's Seckling. Under these circumstances, and the ground not being very rich, the standards may be put out 18 feet apart each way and two bushes disposed between them in the lines, and two rows in the spaces between the latter; or if preferred, the standards may be arranged 21 feet apart, pyramids and bushes of

APPLES, PEARS, AND PLUMS, the two former on dwarfing stocks, being planted 12 feet apart midway between and singly in the lines of standards, Currants and Gooseberry-bushes being also planted singly between the rows of trees and 6 feet apart in a line midway between the latter. When first put out the ground will be thinly covered in either case, and there is nothing to prevent either vegetables or Strawberries being grown among the trees and bushes for two or three seasons at any rate, bulbous-rooted flowers, notably Narcissi, Daffodils, and Anemones, also succeeding well for many years, or enough to bear well. Apples, Pears, Plums as long as desirable. If pyramids and bushes are planted alongside garden walks, room can usually be found for Gooseberries in the angles between the trees, Strawberries also succeeding fairly well as a front row. Either single groups of Raspberry-canes may take the place of some of the bushes or they may be planted 15 inches apart in rows in the place of Gooseberries or Currants.

H.

STARTING FORCED STRAWBERRIES.

IT IS WELL KNOWN the slower the plants are forced the greater the certainty of success, so that those who require fruit early in the season would do well to give ample time and force in suitable temperatures. I lately saw it stated that ripe fruits had been secured by the end of December. It would be interesting to know the proportion of fruit to each plant and the quantity of plants forced. Another point worth knowing is whether from last summer's runners or old plants. I fear whatever system may have been adopted no large quantity of fruit would be obtained unless the plants had received a thorough rest. The best results in Strawberry forcing are really secured from plants started early in the air and given plenty of time with abundance of air. The best fruits I ever grew were from plants started on shelves in an orchard-house close to the glass without bottom-heat of any kind, and not removed till the fruit was colouring. This could not be termed early forcing, and one is not obliged to resort to speedier methods to get early fruits. To do this, excess of heat often destroys a good prospect of a crop, so that the longer the growing or forcing season the greater the success. Many excellent cultivators do not use bottom-heat at all, but in such cases to get early fruits early runners are imperative, also well ripened plants. These latter are placed in their forcing quarters early in December close to the glass with a free circulation of air, and in such positions, provided a low temperature is maintained at the start, say 45 degs. to 55 degs., with a rise of 12 degs. by sunlight, the minimum temperature in severe weather, and 45 degs. to 50 degs. at night, with ample supplies of misture, there will be fewer failures and less trouble with insect pests than if a higher temperature were maintained. Those who have a hothouse or orchard-house ready to start may find room for a few early Strawberries. I would advise a thorough cleansing previous to their introduction, as Strawberries are most troublesome in fruit-houses when not thoroughly prepared. If in a dirty state I find nothing better than a little sulphur mixed in water, dipping every plant before placing on the shelves; dry sulphur is also useful when dusted over the foliage. This checks mildew, but does not reach spider, so that it is best given in a liquid form. When introduced thus early

LITTLE WATER IS NECESSARY, as the roots will be in a moist condition. Dryness at the root is the commencement of the grower's troubles, bringing all kinds of insect pests. I also consider the old method of top-dressing the roots of little importance, and here I may be called to back, but I think it a waste of time, a destruction of roots, and a certain means of preventing the proper amount of moisture

reaching the roots. When a certain quantity of fresh material is added to the surface without any roots to absorb the moisture this remains in a damper condition than the ball of earth lower down. In these days, when there is a wide choice of fertilisers that can be used at the time the plants require assistance, this removal of soil (often roots) is not necessary. I would rather advise leaving more space on the surface at potting-time, so as to mulch with rich soil and manure when the flower-spikes are pushing up. When bottom-heat is used it should always be carefully applied; indeed, in some cases, if proper convenience cannot be afforded, I would prefer to stanch the plants on the bed to plunging them. When leaves are used, some fibre or old leaf-mould may advantageously be used for plunging; if stable-litter is the heating agency more care is required. Much good may be done by using thin boards or racks in case of high temperature, and by this means save the plants; 10 degs. to 15 degs. higher temperature at the roots over the day temperature is ample. When selecting the plants for early fruits, let it be remembered that the largest kinds are not always the best fruiters, especially for early work. So far I have found none better than Vicomtesse Héricart de Thury, La Grosse Sucrée, and Keens' Seedling. Early thinning of the blossoms is also essential, as this hastens the formation of the fruit left. In fine weather a free use of the syringe will keep down spider and greatly benefit the plants. When mildew is noticed maintain a drier atmosphere and cover the pipes with sulphur, doing the work in dull weather. Liquid-manure should be used freely after setting. I like cow and sheep-manure in a liquid state, or a good fertiliser sprinkled on the surface. G.

FRUIT-TREES ON VACANT WALL SPACES.

THE annexed illustration will, I think, give a good general idea of what may be done to render

5280.—**Fruit-tree trained on a wall.**—Holes made in the wall by nails do in the course of time harbour insects, so also do old shreds, and it would be better and neater to repair the wall and have it wired. For Peaches and stone fruits generally, I should prefer the wires strained diagonally up and down the wall so as to form diamonds about 8 inches in diameter. This facilitates the training of the trees, and will not be much more expensive. The wires can be fixed to galvanised nails driven into the wall.—K. H.

—Undoubtedly the best plan is to have the walls wired; not only can the trees be more quickly fastened than when nailing is practised, but the wall is not injured in the slightest. The chief point in wiring walls is to avoid having too great a space between the wall and wires in consequence of causing a draught, and thus rendering the trees less successful. Half an inch space is sufficient, or just enough to admit of the material employed in securing the trees to the wires to be passed around the wires. Galvanised driving-nails an inch long answer very well to support the wire, if driven into the wall 4 feet apart, with a stouter one at each end to make fast the wire. If the wires are strained along the joint between every other row of bricks that will be near enough.—S. P.

—It is supposed that the holes made by wall-nails harbour insects; but when we come to look carefully into it, and compare trees trained to walls that are well studded with holes, against those trained to wires, I have not found that there is so much difference—in fact, there is none. The aphid trile and red-spider are the only dreaded parasites which attack fruit-trees, and neither of them lodge in holes made in the walls. The disadvantages of wires over these: The shoots being trained to the wire, they are fixed at a certain distance from the wall, and a draught of cold air circulates between the shoots and the wall, which will certainly retard the ripening of the fruit, and may also cause the blossoms to be injured by frosts

to be galvanised wires, or if galvanised they should also be painted.—J. D. E.

—Yes; the wiring system is far superior to that of nailing the growth to the wall in the ordinary way. For the subjects mentioned the wires should be fixed about 8 inches apart, and 2 inches or 3 inches from the wall. Always cross the ties between the shoot and the wire, or else wrap a bit of cloth round the latter before tying the shoot to it.—B. C. R.

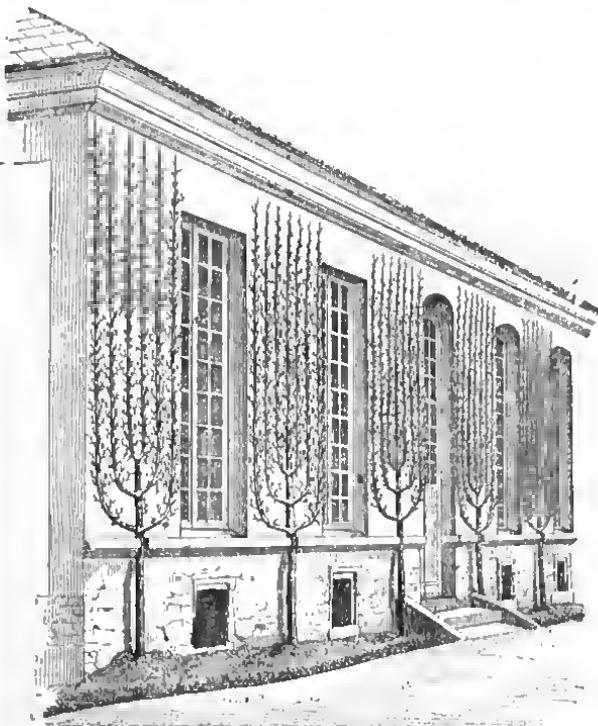
The Vine weevil.—The black Vine weevil (*Otiorrhynchus sulcatus*) is a most tiresome pest. As regards destroying the grubs, no insecticides are of any use; those which would kill the grubs would be equally deadly to the plants. The Vines should be repotted and a careful search made for the grubs; they are probably not more than 4 inches or 5 inches from the surface, so that searching down to that depth would be sufficient. The grubs will become chrysalides in the early spring, and the beetles will emerge a few weeks afterwards. The weevils only feed at night, hiding under stones, little lumps of earth, or wherever they can shelter themselves from observation. They may be trapped by laying pieces of slate, board, or little balls of hay about the soil in the pots, or in hay tied round the stems, or they may be caught at night by previously laying white sheets under the plants, and then suddenly introducing a bright light, which will cause them to fall; if it does not, shake the Vines well over the sheets, secure the weevils before they can get away (they do not move very quickly), and put them into boiling water.—G. S. S.

FERNS.

5275.—**Treatment of Ferns.**—Dead fronds may always be cut off Ferns at any time; but it is not generally wise to cut away all the green fronds when repotting. Maiden-hair Ferns are often cut down just previous, say a fortnight or so. This starts the new growth just a little, and on the least movement the plants may be shaken out and divided. By the fern shaken out it is not intended that every particle of soil is shaken away, as this implies too great a reduction of the roots. When the plants are broken up so very small they are often a long time getting established again, and require extra care, especially as regards watering, and a little extra warmth is desirable. Newly-potted subjects should not be overwatered at first, or the soil may get sour before the roots are in a condition to enter it.—E. H.

—A good grower of Ferns would not treat them quite as "A. K. W." has done. First, as regards cutting off the fronds, please, not "leaves." If they are green and healthy they must not be cut off. Dead or decaying fronds should be removed. If a number of small plants are required instead of large specimens, it is easy to divide them, but better not to do it by cutting. The best way is to thrust the tines of a digging fork into the centre of the plant to be divided, and tear the plant in two. An iron implement invented by Mr. G. F. Wilson, and termed the "Wilson Digger," is the very thing to divide large plants. Two or more plants may be obtained from one. Repot carefully, but do not be too free with water at first. Fibrous peat is better than leaf-mould to mix with yellow loam for potting Ferns. All the soil should need not be shaken away; remove a portion with the broken and bruised roots.—J. D. E.

—Your treatment appears to be quite correct, but in cutting off all the leaves there is no need to disturb the little embryo fronds, so to say. The cutting away of dead fronds requires to be done with great care. I suppose you have hitherto had success with your Ferns, as you do not ask for advice on any particular point. After repotting stand the Ferns in the warmest corner of the house, and if the time of repotting occurs in the spring, shade them from bright bursts of sunlight. Very careful watering is required until they get established, and then more ample supplies may be given. Unless the Ferns are watered judiciously they never root properly. This remark applies to all newly-potted things in general. By saying the Ferns form into a hard mass, I suppose you refer to Adiantums and such like, which may be readily dissected, or the roots carefully reduced, and the same pots, after a thorough cleansing, again used.



Fruit-trees on the wall of an outbuilding

the vacant spaces between windows, &c., in stables and other outbuildings profitable and ornamental. In most cases the system of upright training here shown should be adapted, and many of the finer kinds of Plums, Pears, and Apples, &c., could be so grown to perfection and help considerably in the way of produce whether for sale or home consumption.

in the spring. There is also danger, when the shoots are tied to wires, of some of them being injured by the ties cutting into the wood, and causing gumming or canker. I have had to do with both, and have after many years' experience decided that nailing the trees to the walls is to be preferred to training the shoots to wires. I may add that if wires are used they ought not

HOUSE & WINDOW GARDENING.

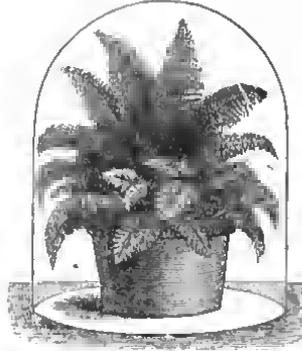
WATERING PLANTS IN ROOMS.

"PLEASE come and look at my plant and tell me how often I must water it?" The above were almost the first words addressed to me when making a visit some few days ago, and I am afraid my answer gave the questioner a very poor opinion of my floricultural knowledge. I simply replied: "I am sure I do not know;" nor did I. Regularity and system are very valuable in many instances, but not among plant life, and least of all when applying water. For example, let us say we water a plant every day. What is the natural result? Sometimes it is sudden, and at others receives hardly sufficient moisture. There are stages in the existence of all plants when they need double and treble the quantity of water that they do at others. Independent of this, let us consider how very changeable the atmosphere is, and what a vast effect this must have in itself. A room has perhaps not had a fire in it for some two or three days, or it may be weeks. During this period the plant has felt need of little water; but when a fire is lighted and the atmosphere dried up, moisture from the plant naturally evaporates more freely, and in consequence the supply must be increased. Again, a plant is in a window; while closed there is not much water needed to keep the soil fairly moist; but if we open the window a short time we shall be astonished how dry the soil becomes, more or less according to the draught occasioned and the state of the air. Then a plant, say of *Arum Lily* or other water-loving subject, wants much more than a *Zonal Pelargonium*, and this is even more marked when growing freely or otherwise. If we except bog-plants, there are none growing in a state of nature which are kept in the same state of uniform moisture as many endeavour to secure when cultivating them in rooms. Nor do they receive regular supplies of water in given quantities. It is surely want of a little thought and consideration which causes persons to ask similar questions to that I have commenced with. As a general rule, all plants need twice as much water when growing to what they do while in a dormant or partially dormant condition. Some require to be kept perfectly dry for a short time, and then be supplied with large quantities. No amount of system will ensure uniform moisture under the varying degrees of temperature and atmospheric conditions our rooms are subject to; therefore, the only plan is to use a little of what my country friends call "gamption." P. U.

FERNS IN GLASS CASES.

In reply to "J. R. T. Z." and others, yes; *Todea superba* is not only the most beautiful of the *Todeas*, but one of the most elegant of all cultivated plants. This and other allied species owe their ability to thrive in rooms where the atmospheric conditions are not suited to plant-life to their need of always being kept closely confined under a glass covering of some kind, either an ordinary bell-glass or a tight-fitting Fern-case, a still, damp atmosphere continually in contact with their delicate leaves being a necessity of their existence. Another merit they present is that they will succeed better in a room which has its windows facing the north than if they were in an opposite direction under the influence of the sun. In fact, these *Todeas* may be said to be completely useless in their wants, only requiring a subdued and limited amount of light; beyond this they will bear without injury a temperature so low that would be fatal to most plants usually grown in pots. Several degrees of frost will do them no harm. I remember once seeing a plant of this *Todea* which was placed in a room such as I have mentioned facing northwards. The pot in which it was growing was plunged in Moss in a large pan, and covered with a corresponding sized bell-glass; its largest fronds were then about 1 foot long. During the summer it made about a score more fronds, many of which were over 18 inches in length. The plant took a handsome vase-like form, the fronds from their base for some length upwards assuming a partially erect position, and then arching over with their points down to the Moss in which it was plunged. This plant gradu-

ally grew stronger and larger, until it became a very fine specimen. All the attention it received was to water the roots freely about every week or ten days whilst growth was in progress, but the top of the plant was never wetted in the least. The syringing or sprinkling overhead which this *Todea* is often subjected to is generally most injurious, causing the fronds to become brown, very different in its effects to the moisture that arises within the glass and covers them with a complete garniture of condensed pearl-like globules. During the winter months it does not require water oftener than every three weeks or so. To those who



The Killarney Fern (*Trichomanes radicans*) under a glass case.

can see beauty in a plant without flowers, it is not possible to have a more charming object in a room. It thrives better where there is not a fire regularly, and does not require any artificial heat, unless there is more than 8 degs. or 10 degs. of frost, which is not likely to occur in many houses.

THE KILLARNEY FERNS (here figured), which is one of the most beautiful of Ferns for glass cases, loves a moist, confined atmosphere. In order to grow it successfully in a room, it should be enclosed in a case, which, when closed, effectually guards it against the draughts and the parched, vitiated atmosphere which often prevails in such a situation. The case may be made of any desired form or dimensions, but it is imperative that provision be made for thorough drainage, one way of effecting which is to form a false bottom, made of punctured galvanised iron. The lower portion of the case should be so constructed that it may be drawn out at will, thus affording means for emptying away any superfluous moisture which may have drained into it. The soil should consist of fibrous peat in lumps, with which should be mixed some pieces of sandstone and a little coarse silver sand. In planting, use the soil in a moist state, and water no more than is necessary to preserve it in a moist condition. In hot weather a gentle dowing overhead will be beneficial; but from September to May syringing must be discontinued, and water at the root must then be cautiously administered. B.

CHRYSANTHEMUMS.

SEASONABLE NOTES.

THE earliest batch of cuttings put in for the purpose of producing large high-class blooms the early part of last month will now be forming roots. The recent spell of wintry weather would be the means of checking their progress, if the cuttings were not absolutely safe from its effects. Even then some care is necessary in affording sufficient ventilation to prevent the leaves from damping during dull and sunless weather. After a frost leaves or cuttings in a confined space are more liable to be affected by damp than at any other time, owing to the larger amount of condensation of moisture that is prevalent. If the cuttings occupy a small frame or hand-light on the stage in the greenhouse or other cool structure, remove the lights regularly for at least an hour every morning to dissipate the condensed moisture that collects on the glass and around the sides of the inside of the frame during the night. It is a good plan to wipe the glass inside the frame every

evening, keeping a sponge handy for the purpose. Such a precaution minimises the amount of moisture in the morning. If any of the leaves exhibit signs of decay remove the parts affected, as this will prevent, to a great extent, the decay of the whole leaf. During the time the cuttings are forming roots but little water will be required. The soil should be maintained in a moist state and no more. It is a mistake, however, to allow the leaves to flag for want of water, as this hinders root formation. Directly roots are formed a little air should then be admitted by tilting the lights slightly at first, and increasingly until they can be removed altogether; but while some of the plants need air the leaves of others will flag. This is caused by those particular varieties not rooting quickly and strongly. These should be removed to a frame by themselves, where they can be kept closer than those which do not flag and require more air to retain that stocky growth which is such an advantage. When the plants are well rooted, and will bear free exposure to the air without flagging, remove them from the hand-lights and place them upon a shelf close to the glass in the same house where they were struck. The temperature should not rise higher than 45 degs. by night, and not more than 55 degs. during the day, admitting abundance of air to maintain a stocky growth. The advantage of a light position is that it prevents their being "drawn up" weakly. If *Chrysanthemums* are placed in a rather warm temperature, and some distance from the glass also, it is surprising how quickly the growth is weakened. It is so important in good culture that a stocky foundation is laid, without this success cannot follow. If the house is not provided with shelves temporary ones can easily be put up by suspending them from the rafters by means of strong wire and screws. The shelves may be about 9 inches wide, according to circumstances, and on each side there should be a groove to run the water off to one end, which can easily be done by allowing a slight slope in fixing the shelves. Any plants standing underneath the *Chrysanthemums* are then not splashed by the water given the plants overhead. E. M.

Summer Chrysanthemums.—There is so much heard about the Japanese and Chinese *Chrysanthemums* in the autumn and winter that we are apt to forget how much we owe to various other members of the family at other periods of the year. The frutescens forms, after all, are, in a general decorative aspect and especially for market purposes, perhaps of much more importance than are any other varieties of species, for they bloom under judicious treatment for fully eight months, will make first class pot plants at any time, are employed in vast quantities for domestic or window decoration, for greenhouses, and for bedding purposes. They can be propagated from cuttings as easily as any greenhouse or bedding plant we have, and the flowers are of the most beautiful kind for ordinary uses when cut. This frutescens *Chrysanthemum* does not lend itself to the winning of prizes at shows; hence we hear so little about it. Of hardy annuals, there are the golden-flowered single forms of *scotum*, the double white and yellow varieties of *coronarum*, all wonderfully profuse bloomers; the singularly varied and beautiful forms of *tricolor*, some of which may be said to present the prettiest of single or Daisy-like flowers in cultivation. All these we can have from seed with the greatest facility and in bloom for fully five months if sown for succession. Then the giant *Daisies* are also *Chrysanthemums*, and *leucanthemum*, *maximum*, *laeustum*, and the tall *uliginosum* give of perennial forms a wealth of beautiful flowers from June till the end of October. Still, of all these forms little is heard, little of fuss is made; they give rise, happily, to no wrangling, and are in no danger of being strangled by the cruel love of the rule-of-thumb florist.—A.

Sweet Peas.—Quite safe from the attacks of both mice and birds are Sweet Peas when sown thinly in 4½-inch pots and stood in a greenhouse or frame. Perhaps in gardens where there is much to do every little labour of this description renders doing it well difficult until the sowing of 100 4½-inch pots with

soil, sowing in each one several seeds, adding a little more soil, watering freely and standing the pots on the floor of a temperate house or in a gently heated frame does not take long, and once done there can be no doubt whatever but that great advantage is gained. If it be desired to have extra early flowers some of these pot clumps of Sweet Peas may be shifted later into 9-inch pots, and in these be early bloomed. If wanted for the formation of clumps in the borders, they can be turned out about the middle of April, when the plants are 6 inches in height, and thus having ample room and well staked will produce clusters of growth and flowers of the most desirable kind. If, on the other hand, wanted to form a long row or line, the clumps turned out from the pots may be divided into two, then be planted in a shallow trench at 9 inches apart, and in that way will soon develop into a beautiful hedge of flowers and foliage. A sowing made in the open ground just at the time these are planted out will give a capital succession for late summer and autumn flowering, and will then be less likely to suffer from the deprecations of mice or birds. When sowing the more recently introduced varieties it is decidedly the wisest course to sow the seeds in pots. There is sometimes danger from mice even in houses and frames, but in such cases the pests can be overcome by persevering with the usual remedies.—D.

OUTDOOR PLANTS.

5260.—**Best Carnations.**—There are very few Carnations that do not burst their flower-pods at times, especially when grown in unfavourable positions as to soil, and during bad seasons. I have had to discard a good many from my collection on account of this failing, among others that well-known old favourite (fleur de Nancy, which, planted in the open in the calcareous soil here, failed some years to produce any flowers that were fit to use without the aid of matting or wire. The list of varieties in GARDENING (December 27th, p. 595) have been selected either on account of their colour, or because I have found them less liable to this unfortunate failing, and are probably the least liable of the several colours to this defect. Probably we shall have, in the not far distant future, plenty of border Carnations which will not only grow in any good garden soil without pod-bursting, but will also bear very fragrant flowers, and among these will most probably be found some improvements on such good varieties which we already possess, as the Old Glove, Blush Glove, or Satin Queen, W. P. Milner, the Governor, the Duke, Ruby Castle, Ketton Rose, Rose Celestial, Comte de Chambord, Gorinania, though this seldom bursts with me—a friend who treats his Carnations very liberally complains that 50 per cent. of his flowers of the variety, Mrs. R. Hole, are spoilt through bursting. Although to some extent a burster, this is a variety we cannot well do without, on account of its unique colour, especially for supplying cut flowers. There are, I believe, varieties in existence which are supposed to be a long way ahead of this variety, but till they become better known, and are to be had at popular prices, Mrs. R. Hole will take a lot of beating.—F. B., Winchester.

5272.—**Ipomœa pandurata.**—This is a deciduous hardy climbing plant from North America, which, as far as I know, no one in this country has ever succeeded in getting it to flower. I remember some years ago that several people tried it, but failed to get any satisfaction out of it. The hardy Hibiscus you mention I do not know; but if it is of the same character as those grown in England, I may tell you that it is more likely to succeed in a peaty soil than any other.—J. C. C.

5255.—**Auriculas in a garden.**—If the weather permits a good top-dressing would probably be the best treatment for your Auriculas. A mixture of two-thirds good fibrous loam and one of leaf-mould and well-decayed manure, with a good handful of soot added, would be preferred, or, failing this, some good garden soil could be used. In this they would root freely from their stems, and

would greatly facilitate replanting after flowering, as you will then know which varieties are worth troubling about.—F. B., Winchester.

A note on Christmas Roses.—It is only in soil of a suitable character that it is safe to lift these plants every two years and then divide them afterwards. Anyone with a soil that is naturally heavy, cold, and unsuitable to the quick growth of these plants will find a difficulty in managing them in this way, unless a large stock of plants is available, so I adopted the plan of making a plantation of the best roots on an east border of a size suitable for covering with an ordinary two-light frame. I took out the subsoil to a depth of 18 inches, retaining that on the surface, while the bottom was thoroughly broken up to allow of the water running away. Loam, peat, and leaf-soil were added in about equal portions. The clumps were planted in the spring after flowering, and now they give a wealth of bloom every year at Christmas, with but a tithe of the trouble experienced in lifting and dividing the roots afterwards. When the last flowers are cut from the plants in February, or sometimes it may be in March, the frame is taken away, if the weather is at all suitable. The old flower-stems not used when fresh are cut away, and a mulching of horse-manure is given to the plants. When growing, abundance of water is given if the weather be hot and dry, and occasional doses of liquid-manure are supplied, inducing good growth, which is all in favour of a full crop of flowers the next year. It is surprising how soon Hellebores suffer from drought. The lights are put on in the middle of October, abundance of air being admitted at all times, except in the case of cold weather, when the flowers are pushing up and it is thought they will not be expanded by any particular date.—E.

NEW ZEALAND REED (ARUNDO CONSIGUA).

This is a capital companion for the Pampas Grass, especially in the western counties of England, and on good soils. In some very fine deep soils it reaches a height of nearly 12 feet, and it is well worth growing where its dimen-



New Zealand Reed (*Arundo donax*).

sions are much less. It flowers before the Pampas Grass, and is a fore-runner of that magnificent plant. It makes a noble specimen for the lawn, where it grows well. It commences blooming in July, lasting until the end of October. Grown in tubs in a cool greenhouse or winter garden this noble Reed is very handsome, and its silky plumes (see illustration) last in perfection much longer than in the open air. It likes strong, fibrous, loamy soil, and plenty of water nearly all the year round. It is propagated by seeds or division. It requires careful planting, and generally several years' growth after transplanting before flowering.

ROSES.

MARECHAL NIEL ROSE.

No doubt this will always be more or less erratic in its behaviour out-of-doors. A few other Roses are somewhat so, but none to the extent that characterises Marechal Niel. Good free-growing, constant-blooming plants may occasionally be met with, but generally its behaviour is indifferent, and it does not always readily respond to our endeavours to induce healthy, vigorous growth. Although I have not actually proved the value of the cutting-down plan in the open air after flowering, I have tried an experiment in this way, and which perhaps was likely to lead to good results. It seemed so in my calculations, but I failed to realise expectations. In my case six dwarf plants on the seedling Brier-stock were planted in a very favourable position against a warm wall with a south aspect. They were rather close together, and as all made a vigorous growth, there was not room to train all the shoots properly. The idea then occurred to me that perhaps by laying in almost full length the shoots of three plants and cutting the others down to near the ground I might have them in succession, assuming that the cut-back plants would, as the result of their hard pruning, make a vigorous growth to lay in for flowering the following spring. Those that were unpruned flowered well and finely, but the cut-backs only make a weak, puny growth, and therefore quite defeated my object. A variety of circumstances has to be reckoned with out-of-doors that do not interfere with or influence culture under glass. With so many really reliable first-rate Roses it seems almost a waste of time and space to attempt the growth of Marechal Niel at all extensively. I have had no experience as to whether it is long-lived as a standard, but it certainly grows very well in this way. A number of standard and half-standard plants that I have seen in Mr. Frank Cant's nursery on several occasions always surprised me with their health and vigour, and they reward him with hundreds of perfect flowers. Nothing like hard pruning is resorted to in spring, but the long strong shoots are brought down more or less horizontally and tied to stakes. So treated they flower almost their entire length. A.

FORCING ROSES.

In the early forcing of Roses, endeavour to maintain a temperature of 45 degs. to 50 degs., then all will be well; but do not be alarmed if, with the appearance of the sun for a few moments, the temperature rises to 55 degs. or even more. This will be of benefit to the plants, but on no account admit air. If the sun be more than usually strong at this season the fire may be steepled for awhile, but be careful this is not too long-continued, as the water cools quickly in such weather, and the temperature of the house will rapidly decline when the sun has again disappeared. One very important item in the forcing of Roses early is obtaining the fullest amount of light, and to ensure this, the glass will have to be washed occasionally to clear off the soot which remains after a dense black fog. Nothing short of hard rubbing will remove this greasy black deposit, which so effectually excludes the light, and nothing is better suited for the purpose than the brushes obtainable from any horticultural tradesman. These affixed to a handle simplify the washing of glass roofs, having a lad with a coarse syringe to damp the glass in advance, and to return at intervals to rinse off what has been washed. During severe frosts it is impossible to do this, as the water freezes too quickly; but advantage should be taken of the earliest opportunity, as the plants suffer considerably when light is thus obscured. Fumigation must be done in advance, as it were, to keep insects in check. Once they get the upper hand it is almost impossible to eradicate them without injury to the plants as well. It will be found better, as a rule, to fumigate twice moderately rather than attempt the destruction of the pest at one strong application. A good preventive measure, and one by no means so much in vogue as its effectiveness and simplicity merit, is that of syringing with clear foot-water occasionally, making the solution several days before use,

Soot is especially valuable in the Carnation-house, and young plants I frequently water overhead with it, particularly if red spider exists. Such simple means as these are too frequently overlooked, and those who have not tried the above in the way now suggested should lose no time in doing so. As soon as the limbs are well formed and have emerged from the foliage, a little weak stimulant may be given, starting with soot-water first, and afterwards about twice weekly, giving some good artificial manure in a weak solution. It will be found advantageous to apply it in a weak state and frequently, rather than in stronger doses at longer intervals. It is also advisable to change the food supplies; when the limbs begin to show colour stimulants may be discontinued. E.

THE GROWTH OF TEA ROSES.

SOLS, situations, and local peculiarities determine a great deal, and in some degree account for the varied experiences of different Rose growers. Reading the remarks of another rosarian and comparing them with one's own experience frequently reveal some decided differences so great as to be almost unaccountable. Observations, however, of the different growth of self-same kinds upon heavy soil in the south and in lighter soil in the eastern counties lead me to suppose that we err in trying to grow all the kinds under uniform conditions, more especially as regards soil. Now that ardent growers, not of Roses alone, but of other plants as well, do so much towards preparing for them a site and soil as congenial as it is possible to be made, I think it is quite an open question whether a bed of lighter soil than that usually sought after and considered the essential for Rose growing might not be the remedy for so-called delicate kinds and the means of inducing greater vigour. There would certainly be increased ability to withstand low temperatures, because hardiness is very much proportionate to the capacity the soil has for retaining water—at least, such is my idea. There is, of course, nothing like uniformity as regards habit of growth, but there is a marked difference between the behaviour of *Niphotes* in various localities. In my previous notes I have alluded to the fact that, being so largely grown under glass, it came to be regarded as a dreadfully tender, if not absolutely worthless, kind for open air culture, and that this was very far from being the truth. In consequence of this pendulous disposition of the flowers, I made a group in walled border, and a very pretty one it became. The bushes grew strongly and flowered most freely. The second lot of flowers came finer than the first, and some of them were borne quite erect on strong shoots. I used to think they had much more substance than the comparatively flimsy blooms I have seen under glass, but, at any rate, especially towards autumn, in the milder days, the flowers were more lasting. The plants never showed any extra susceptibilities to cold, and they have endured the rigours of all the winters that have passed since they were planted entirely unprotected and without suffering. In a less favoured garden I have seen *Niphotes* at the foot of a wall growing vigorously and producing fine flowers. Mr. D. T. Fish used to praise *Niphotes* grown in this way, and I think the majority of rosarians will hardly go so far as to discard it for delicacy or poor growth. *Souvenir de Paul Neyron* has been mentioned by some as a tender, uncertain Rose, but I have always found it the very opposite of this, and, growing in its own way undisturbed, no kind could give a greater proportion of fine flowers than this has always done. My first experience of *Innocent Piroli* was in heavy soil, where it was most unhappy, but elsewhere it proved one of the very best Tea Roses, and the bushes grew quite a yard high. I am not sure of *Cleopatra*, but Ernest Metz last year proved that it possessed robustness. There is a danger of a fine Rose such as this being over-propagated at first, and it is a matter of two or three years before it reveals its true character. *Ethel Brownlow* is held in high estimation by the exhibitors, and I must confess to being astonished with some blooms I saw cut from standard plants in one of the large Rose nurseries last year. With me, growing as a dwarf, its shoots have always been of a thin, wiry character, and the flowers, though well formed, were small and of little time of life too pronounced.

SINGLE ROSES.

THESE ROSES make such beautiful additions to our rosaries that they ought to be far more generally cultivated than is found to be the case. For instance, they include some of the very best climbers—that is to say, climbers that are exceedingly hardy, immensely vigorous, but little subject to disease, and extremely free flowering. Such a one is *Rosa polyantha*, which will grow anywhere to any height almost, and hide itself in June under a snowy awning of white blossoms of delicious fragrance. It may be propagated from cuttings in the open ground more rapidly even than *Manetti*, and it is absolutely hardy. *Rosa Brunneava* (here figured), again, though scarcely so hardy, makes a most distinguished-looking climber, with its glaucous foliage and great trusses of white flowers. Then the North Americans, *Rosa lucida* and *Rosa nitida*, are always attractive for their glossy foliage and brown stems, even when they are not covered with bright, rasy flowers or brilliant scarlet bunches of hips, and they are as hardy and vigorous as possible. *Rosa mucronata* may be regarded as a queen among single Roses, with its great, royal-looking blossoms, flesh tinted, and crowned with a gleaming diadem of golden stamens; and *Hebe's Lip*—not a species, but generally classed as a hybrid Sweet Brier—with large flowers, having a purple margin to each white petal, is not less beautiful. There are



Flowers of *Rosa Brunneava*.

many delightful forms of the Sweet Brier, but most of them are either double or semi-double. The Austrian Briers, yellow and so-called (mis-called) copper, are, of course, amongst the most distinct and gorgeous of all Roses, single or otherwise, and a great mass of either seen at its best is a sight not readily to be forgotten. The Rugosas, white and red, are also very handsome, both in flower and in fruit, and well known, though they cannot on that account be omitted from a list of the best. A single Rose which is not often seen is one of the most fascinating things in the whole rosery; it is *Rosa berberidifolia* (Hardy), which throughout the summer produces a wealth of blossoms. The flowers have clear yellow petals, with a narrow blotch at the base of each, delighting everyone who sees it. A bush of well-grown flowers of this Rose is a never-failing attraction at a Rose show. Anyone who has a rockery—for which it is particularly well adapted—should grow this charming and hardy Rose. G.

3274.—**Making a propagator.**—I made my own propagator, and this is how I did it. I got a box 2 feet long, 16 inches wide, and 18 inches deep. I removed the top, and on one side removed the lower half of the boards and hung it on hinges, so as to get the lamp in and out, and to close it afterwards to shut in the warmth. I then secured a zinc tray 1 inch

deep, the size of the box inside. Strips of very narrow boards were then nailed on to the sides and ends of the box, and 9 inches from the bottom, on these strips, the tray rests. The tray is then filled half full of water, and on the top of it is placed a sheet of perforated zinc, and on the sheet of zinc I place half-an-inch of Cocoa-nut-fibre or sawdust all over. Three ordinary squares of glass are placed on the top, and, except the lamp, the propagator is complete. I use an ordinary petroleum-lamp with a glass, which together is 8 inches high, and the best petroleum obtainable. With this simple contrivance I can get a temperature of 95 degs., if I wanted so much.—J. C. C.

ORCHIDS.

SLIPPER ORCHIDS (CYPRIPEDIUMS).

"JESSE CHAPMAN" wishes to know if I will give him a description of about a dozen Slipper Orchids? Yes, I will; but he must understand that there are many dozens to choose from, and the kinds given may not be just the ones he wants; but they may be added to ever as he thinks proper. The plants all require to be well drained; those kinds which are noted as limestone kinds should have a compost of all limestone; but for the other kinds use pieces of broken pots. The soil for the majority of the kinds should consist of about equal parts of rough peat, chopped Sphagnum Moss, light-yellow turfy loam, and sharp sand; but the species which grow in limestone should be potted in that material, and be likewise drained with larger pieces of the same. The house should be kept nice and moist, and the plants be well supplied with water to the roots, keeping them in a temperature of the East India house, never allowing it to fall below about 65 degs. at night in the winter, rising to 70 degs.—80 degs. by sun heat in the summer. They should be kept warm enough in the winter to allow some moisture being used about them, so as to keep their foliage in a moist and healthy condition.

C. BEALATIUM.—A species introduced by Mr. Stuart Law some four or five years ago, and it is one of the most charming of its kind. The flowers are large and beautifully spotted, and its foliage is richly marked and large. But the plant has not been alone justine in, which arises in the first place, I think, from wrong pitting, and no matter how friends laugh, I advise them being potted in broken limestone and fine yellow loam, besides putting the large pieces of limestone on the bottom of the pots as drainage. The dorsal sepal and petals are very large and round, and they are in colour from pale yellow to pure white, more or less spotted, and blotched with brownish-purple, tinged in some examples with a shade of rose; the lip is small, and is sparingly dotted with the same colour as the petals. It is nearly related to *C. Godefroyi*, but is much superior.

C. CONCOLOR.—This is a somewhat small-flowered plant, the blossoms having a yellow ground over which is spread some reddish-purple dots. It is a limestone plant, and has improved very much under this treatment.

C. CERNIS. is a large-flowered and very beautiful form; the flowers are large, the petals reflexed, with purple dots on a darker ground, dorsal sepal vivid green, with a broad white margin. Some very fine forms have appeared from an importation made of this kind by Mr. Smiler, of St. Albans. The flowers of these are not spotted like many of the section to which it belongs.

C. DIVERSI.—This is a plant found by Col. Drury on the Travancore Hills, quite isolated from other members of its race, and there many others are doubtless to be found. It appears to be somewhat of a sparse bloomer, the flowers being rich yellow, with a broad chocolate band down the centre of each segment.

C. NELLIOTANUM is a strikingly beautiful plant with large flowers, which are produced four and five together at the same time, and which render it very beautiful. It was introduced by Mr. Sander. The flowers are large and spreading, the ground colour is white or creamy, thickly streaked with blackish lines. It appears to approach *C. Stonei*, but it is a much easier plant to cultivate, and more effective when in flower.

C. LAWRENCEANUM.—This is like a very gigantic form of C. barbatum, both as regards size and colour, and it should be in every collection. Its broad dorsal sepal is very conspicuous.

C. LOWI is an extremely handsome species, found growing upon lofty trees in the jungle in Borneo. The segments are greenish, having beautiful reflexed petals some 3 inches long, spatulate, the points being light, the lower part yellowish, spotted with black. It has several blossoms on the spike.

C. NIVEUM.—This is another of the limestone plants, producing pure white flowers, dotted with purple, which makes it a very desirable plant with the ladies. The dorsal sepal and the petals are pure white, saving the fine dots upon it.

C. STONEL.—A superb form, from which originated the only plant of the variety known as C. platyllum. It is a very distinct and pretty Slipper Orchid, having broad, white sepals, having a few lines of black. The petals are long, slightly reflexed, white near the base, becoming yellow towards the middle and upwards, spotted with black, the lip rose colour, streaked with crimson.

C. SPICERIANUM.—This is a very pretty and telling kind, more especially as it blooms in the late autumn months. It has a broad dorsal sepal, of the purest white, saving a broad centre streak of dark chocolate up the centre. The petals are green, beautifully frilled on the edges; lip also a soft green.

C. SUPERBIENS is one of the very best of the C. barbatum group. It is beautiful in the extreme; it has bright, tessellated leaves and large, light-coloured flowers; the dorsal sepal is broad white, streaked with vermilion. The petals are slightly flushed with white, much spotted with lines of blackish warts, and delicate at the edges; the lip of good size, brownish-purple.

C. VILLOSA.—This is a noble species, having very strong foliage, dark green on the upper side, paler beneath, freckled at the base with black. The flowers are large, and somewhat variable in colour, having a varnished appearance; the dorsal sepal brown from the centre, which is succeeded with a green tinge, the outer border white; the petals are broadly spatulate, having a central vein of brownish-purple, the upper half being of a rich chestnut-brown, the lower half paler in colour; lip large, tawny-yellow. There are numerous named varieties of this plant which I pass over to a more fitting occasion; but all of them with the typical plant require rather less heat than is given here for the dozen kinds asked for by "J. G."

MATT. BRAMBLE.

5278.—Wireworms in leaf-mould.

The wireworms must have come up out of the ground into the leaf-mould, and if it was spread out in the winter they would instinctively go out of the mould into the ground again to escape the frost. I believe if the leaf-mould was spread out on frozen ground, and a sharp frost set in to thoroughly freeze the leaf-mould, it would kill them. If it is required for a Potato-bed, I would mix it with good stable-mannure fresh from the stables; enough should be used to cause a good heat and steam. I kill all the wireworms in our turfy heap in this way. A few escape to the outside of the heap, but I turn it over again and that kills all of them.—J. D. E.

5264.—Oil-stove.—If properly managed an oil-stove in a conservatory will not injure the plants; but very often such stoves are not properly managed. The lamp either gets dirty and smokes or something or other goes wrong. Some time ago I went into a conservatory warmed with an oil-stove, and everything in the house was black from the lamp smoking. The stove had been temporarily left in charge of a servant who did not understand its management, or else was careless about it, and the whole thing went wrong. The larger stoves should have a pan of water on the top, as this keeps the atmosphere genial.—E. H.

The danger of oil-stoves is when they are neglected, or the wicks get too high, creating an unpleasant suffocating smoke. When, however, the wicks are kept properly trimmed, and the stove attended to carefully in other respects, there is no risk. Many small greenhouses are heated through the winter months

with an oil-stove, the common form of heating apparatus for amateurs to use. A small stove will warm a comparatively large structure. It is gas that is so destructive to plant life, and a gas-stove in a conservatory is certain to produce undesirable results.—C. T.

—An oil-stove is not injurious to plants in a conservatory provided the flame is properly managed. If too high we get a choking smoke; when not high enough the oil ascending the wick is not consumed sufficiently fast, and we get its fumes in the atmosphere. Lamps of all kinds dry the air very much, and detract from its qualities; therefore it is better to follow the Russian plan and occasionally place a pan of water over the flame and avoid too parching a heat.—P. U.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of GARDENING, 37, Southampton-street, Covent-garden, London. Letters on business should be sent to the Publisher. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent to press some time in advance of date, they cannot always be replied to in the same issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by adding, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions should mean very so implicitly that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appeared.

5291.—Rosa rugosa on a lawn.—I have some Rosa rugosa planted in a lawn. Ought the turf to be removed over the roots?—P. F.

5292.—Grafting fruit-trees.—Will someone give me instructions how to graft Pear, Apple, and Plum-trees, and the proper period of the year to do the work?—BURY.

5293.—Parasitps for show.—Will anyone kindly tell me how to grow these for show, the best kind to grow for size, and when to sow the seed? Soil is of a retentive nature.—D. T.

5294.—Cow-mansurs.—I put a good layer of cow-mannure on my Roses, trill-trees, and Rhododendrons. I am told that it will kill the Rhododendrons. Is that so?—W. D. E.

5295.—White Chrysanthemum.—Will "J. Green" or anyone else, kindly state if there is a White Chrysanthemum of the same type in cultivation equal or superior to Elaine?—T. N.

5296.—Lysimachia Nummularia aursa.—Will someone tell me if the above can be raised from seed; also the culture of same, and can the seed be purchased from any seedsman?—H. G. K.

5297.—Lihonia floribunda.—Will "P. J." kindly say if this plant will flower in a greenhouse without heat in winter, and is Lihonia pentstemonia the same plant or of the same kind?—LONDON.

5298.—A hanging-basket.—What would be the most effective way to adorn a hanging-basket, 15 inches in diameter, for a greenhouse? When and how should the work be begun?—A. E. W.

5299.—Table plants.—Will anyone inform me if there is any in exhibiting table plants as to the height of them, and if so where could I be had? I have been told there is a rule.—W. M.

5300.—Plants out-of-doors.—Would anyone kindly inform me if they have tried to grow the following, and with what result (out-of-doors); they are both hardy: Ipomoea pandurata and Childs' New Hardy Hibiscus.—A. A.

5301.—Creeper for a window.—Would someone tell me a nice Creeper to hang over the sides of window-boxes? I have got a lot of boxes to fill for windows, and should be much obliged to anyone who would kindly tell me.—BENABROOK.

5302.—Treatment of lawns.—I should be much obliged if anyone will tell me the best method of fertilizing lawns, killing Moss, &c., and whether wood-ashes are good, mixed with some phosphate, and if so in what quantities?—COLUMBET J. W. WAGNINER.

5303.—Winter Apples, &c.—1. What is the best way to keep dessert Apples in prime condition during the winter? 2. How long should Ribston Pippin, King of the Pippins, and Ribhish Oranges keep good if treated in the right way?—H. W.

5304.—Pine-apples.—I should be pleased if someone would give me the culture of Queen Pines, now in 9-inch pots and twelve months old, about August, and what degree of heat they should be in now, and should they be potted once more or not before they fruit?—W. M.

5305.—Japanese Chrysanthemum, &c.—Would "Mr. E. Molten" kindly give me a few hints on the culture of the Japanese, Anemone, and large-flowering Chrysanthemum, and when they should be struck, and the names of a dozen in each class?—W. M.

5306.—Treatment of Cannas.—Will someone kindly tell me how to treat Cannas raised from seed last year? I want to increase my stock of them. They are in pots in the greenhouse, and the leaves are still green. Ought they to be dried off?—H. T. O. H.

5307.—Asparagus tenuissimus, &c.—Will someone kindly tell me if Asparagus tenuissimus and Asparagus plumosus name will do well in a greenhouse without heat? I should also like to have the names of a few of the best family Ferns for such a house?—ARTURUS.

5308.—A Privet-hedge.—I have planted a Privet-hedge. The plants have two to four shoots on each one, and are 3 feet high. Will someone please to tell me if I must cut them down, and if so when is the best time to do it? I want a good thick hedge right from the bottom?—R. H. F.

5309.—Crickets in a greenhouse.—What can I do to destroy, or at least prevent, crickets from doing damage in a warm greenhouse? Last spring I was sorely troubled with them eating stuff of as it came up in seed boxes. With me Cherry seedlings seem to be their favourite attraction.—FRESHMAN.

5310.—Sowing seed of Calla, &c.—1. When should I sow seeds of Calla althimica? Will they flower next year? 2. When should I sow seeds of Gralstas? 3. When is best time to buy plants of Genistas and Hydrangeas? 4. When is the cheapest and best time to buy Calla plants?—AMATEUR.

5311.—Room plants nipped by frost.—Will anyone kindly say what is to be done with Hare-foot Ferns and Nile Lilies (Callas) which have been nipped by the frost, and are withered and drooping? Freshman the same. All this happened in a drawing-room, and are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent to press some time in advance of date, they cannot always be replied to in the same issue immediately following the receipt of their communication.

5312.—Lean-to house for a Grape-Vine, &c.—I am about to build a lean-to house over a Grape-Vine. Will someone kindly inform me whether a Lapageria, Oleanders, and Tea Roses in pots will grow in the same house? It will be 10 feet long 12 feet high by 7 feet wide, the situation facing south-east. It will be a cold house.—MAURICE MINNER.

5313.—A saddle boiler.—Can a saddle boiler, with 30 gallons of water in the pipes, be heated with gas and some other material, which I do not know the name of, and it is largely used in heating stoves, and gives a good heat? Could I obtain enough heat for two houses about 10 feet by 12 feet high and 3 feet wide and 18 feet long? Would gas cost more than coke, &c.?—GABRIEL.

5314.—Plants in a cold frame.—I have a lot of cuttings of "Abramites," Chrysanthemums, and Ferns with other things in a cold frame, which appear to be getting very dry, but in consequence of the severe weather I have been afraid to water them. Will someone please say how long this may be put off, and in some cases should the pots be placed in water for a short time?—SOCIETY.

5315.—Best market Melon, &c.—Will anyone kindly tell me the name of the best market Melon, and one likely to succeed in the following house—low span-roofed—framed by a line running round three sides of it. Over this line, on a stage, I propose to grow Melons. This line will give bottom-heat and top-heat. The house gets no sun till nearly March. Which would pay best—Melons or Cucumbers?—MATHEW.

5316.—Plants for a bed.—Will someone kindly give me a list of plants, and advise me how to proceed to plant a bed 50 feet long and 4 feet wide with herbaceous plants, as I want to make one next spring to supply the house with fresh cut flowers, if possible to buy a supply from May to the end of autumn? The soil is good, and the turf will be a sandy soil. I have now some Pentstemon, so do not need any more of these.—THANKFUL.

5317.—An old Pear-tree.—Will someone give me advice as to what can be done to improve an old Pear-tree, the Chaumontel? One of our this summer bore a very large quantity of fruit, but the Pears were such a small size we did not care about them. Some of the finest, however, I kept to ripen, and found them with a delicious flavour that we are anxious to be in a way to improve the tree. Ought the roots to be pruned?—CHARMOTT.

5318.—Vigorous Chrysanthemums, &c.—Would "E. M." kindly inform me which of the following Chrysanthemums are most vigorous and most suitable for growing for decoration: W. H. Lincoln, Arabach, Mrs. Jamieson, Leon Fracke, Alheric London, Lily Bats, Bonle d'Or, J. S. Dildara, Miss P. Darison, Viryland Mord, Noble de Hocher, Pres. Harrison, Edwin Molyneux, Mr. R. Brahm, kindly state which are most suited for cutting down?—R. B.

5319.—Early and mid-season Chrysanthemum.—Will "Mr. Molyneux," or someone else, kindly give me the names of six good early kinds, six mid-season in November, and six late? It is very essential that they be dwarf growers, not more than 3 feet high naturally, and white, except, predominate. If such dwarf-growing kinds are scarce some information how to grow ordinary kinds dwarf and covered with foliage to the pots will be much appreciated?—H. W.

5320.—Plants suitable for growing with Roses in an unheated house.—At page 573, of No. 71, "P. U." writes, in reference to flowers in an unheated house: "Where other subjects are grown they will, of course, be those which need somewhat the same treatment, seeing it would never do to cultivate any which could not stand a low degree of frost." Will he kindly say what plants he would recommend as coming under this category?—NEWHAMPTON.

5321.—A Strawberry crop.—Would someone kindly let me know about how much fruit a thousand plants of Strawberries ought to yield, and which would be the best sorts to grow for profit? I have been told that President and Dr. Hogg are the best, that I could grow on the piece of ground I have two thousand plants. As I shall have to make the beds in April I am told I ought not to let the plants fruit this summer. Is this so? What would be a fair price for the fruit?—A. FREEMAN.

5322.—Asphalting.—Will anyone who has had a good experience with asphaltting be kind enough to set me right with my difficulty? Two years ago I had a good deal done in water, which got soft and kicked up in summer—in fact, even in cold weather it did not set well. My method was to heat the asphalt, boil the tar, mixing all hot, with a little warm sand, and after laying down gave an extra coat of tar, besides well, and mixing in the mixing. I shall be much obliged if anyone can tell the reason of it acting as it does?—BURY.

5323.—Fumigating.—I shall be very glad to receive information of a safe and effectual way to fumigate with Tobacco paper in a greenhouse containing mixed collection of plants, including Ferns and Heliotropes, &c., which on various occasions have always been infected by the smokes. The way I have long before was to place hot cinders in a large flower-pot and the Tobacco paper on the top, never allowing it to blaze. Will saturating the paper in alum and water be safer for the plants, and effectual in destroying green and black-fly?—**FARMERMAN.**

5324.—Fixing hot-water pipes, &c.—I have a lean-to forcing-house against a south wall, 20 feet long, 8 feet wide, 1 foot high at back, and 2 feet 6 inches in front. I have an Eclipse boiler and 36 feet of 4-inch piping, which I purpose putting in. How far should I have the pipes from the front? I want the house strictly for Tomatoes, which would be planted in the border, and have no slugging. How close may the plants be to the pipes without being damaged by the heat? I should like one row between the pipes, and then I think I could have three rows at the back if the wall will admit; in all about forty plants. Would that do?—**H. C. M.**

5325.—Climbing Roses in pots.—I should be much obliged for advice on the following subject: I bought a week ago two climbing Roses in pots, 8 inches across, for my unheated greenhouse. The Marochal Niel I re-potted into a much larger sized pot, 18 inches across. The other Rose, a W. A. Richardson, I planted out in the western border of greenhouse. Both plants have three long shoots, the centre ones being about 4 feet long. Might I top-prune them, and if so how much? When ought I to apply any mulching or top-dressing. They are both planted in garden soil, mixed with a large proportion of leaf-mould. Advice will be very greatly obliged.—**NAKERRATS.**

5326.—Making a flower garden.—I wish to turn into a flower garden, with lawns and tennis-court, nearly an acre of pasture. It is so infested with weeds that on my man's recommendation I am trenching it all over to the depth of 2 feet that he may plant it out February with Daisies and Grass seeds that both crops may come up together. The ground in front of course is available as a garden till next autumn or perhaps later. Would anyone kindly tell me whether the method thus described is the best, and what quantities of Oat and Grass-seed would be required? If not the best method, what would be advisable? Soil light and rather poor, gravel subsoil, near Farnham, Surrey.—**A. C. J.**

5327.—Roses in pots.—I have about sixty Roses in pots, chiefly H. P.'s. After last year's flowering I put them outside, and kept them out until end of November. Finding the frost had not harmed them then, and that they were beginning to show signs of life, I gave them a good top-dressing with nice loamy soil, mixed with a small quantity of bonfire manure, and then placed them inside. The house is span-roofed; size 30 feet by 10 feet, by 9 feet, and I also grow bulbs in the same house—Hyacinths, Tulips, &c. Please say if I treat Roses aright, and will the same temperature suit bulbs and Roses alike? I have house heated with one of Coore's heating apparatus, which I find satisfactory.—**LANSBURRY.**

5328.—Forcing Roses for out bloom.—Thanks to "J. C. C." and "P. L." for their kind information. In reference to the Roses I should like to know how many Roses the varieties "P. U." names (December 30, 1893, page 185) each house will take planted out and if grown in pots? I like it if the plants will grow on the outside of a forcing system, and be cut down each season after flowering? I might say the houses are built in two blocks of three with 20 yards between the two blocks, 3 feet to eaves, side walls, no partition walls, so I can get a free circulation of air through the three houses. They are going to be heated with a 6-feet saddle-boiler with water bars, so I could put more pipes in houses if required.—**M. K.**

5329.—Plants for a small greenhouse.—I have a small lean in greenhouse, facing south-west, no means of heating, except that a window from a room in which a fire is kept all day opens into it. I am a beginner, and want to get the best plants to grow in it. I have a speciality fond of Carnations and Violets. Will someone oblige by letting me know if I can get them to flower in winter in pots, and if so give a few of the best kinds, and the names of a few other flowers for winter blooming, and the best time to plant? In this greenhouse there is a border of earth about 24 feet wide underneath the stage for pots, which is 4 feet from the earth. What would be suitable for planting there, as it looks ugly in its present state? Locally, Kirkwall, N.B.—**B. H.**

5330.—Vines fruiting in pots.—Will someone please give me advice on the following?—I have just purchased four vines, two for planting and two for fruiting in pots. The first two were planted outside, the roots to be brought through a hole in the wall. When will it be a suitable to put them inside? The hole in the wall is large enough to put them through at any time without injury, if an length of rod should I leave when shortening back? The house is 5 feet to eaves, and no side growths will be allowed below that point. The roots are about 10 feet or 12 feet long. The two for fruiting in pots are in 12-inch pots with the same length of root. Should the fruit in the same pots or be potted afresh? What length of root should be left on these? How many bunches on each rod, and when should they be taken into theinery, the temperature of which is at present uniform, 45-55, maximum, 60 days? The kinds are usual at foot of a wall outside. The varieties are Black Hamburgh and Foster's Seedling.—**A. TERESA, Bucks.**

5331.—Marechal Niel Rose.—According to "J. C." statement recently in GARDENING, the only profitable way to grow this Rose is to plant it out in a border. Perhaps this accounts for my not having any blossoms on mine. I bought it last spring in 6-inch pot. It had some buds on it at summer. I set the vine planted outside, and felt about a gavel as high to a 9-inch pot. It has three rods, each about 4 feet long, with some young growths 3 inches to 9 inches long on the upper part of it (some of the largest tips of these I have taken off and potted to strike). At the bottom of the plant on the stock the bark is peeling off, and the stem looks as if it is rusty. It is on the stage in the cold end of an all-glass-roofed house. I should like a Rhubarb forcing cover that will enter the stage and bring the rods through it, so that I would be able to wash the rods with water, and I have placed north side of this out of house, but not south

side), or I could plant it in a conservatory; then it would have to run in a wall 13 feet before it got to the glass. High side of lean-to only heated to keep out frost. I have a corner of rock-work here where it could be planted. This house is north-east, and does not get much sun, as it is shaded with trees. Should I be likely to succeed?—**H. B.**

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

5332.—Poor man's record of Orchid growing.—Very interesting article. I shall keep them to mark how you improve.—**M. B.**

5333.—Remedy for bug and thrips.—A. E. Should obtain some "Sift and Sieve" insecticide, and he will receive instructions with it.—**M. B.**

5334.—Orchids with greenhouse plants.—H. M. must write and tell me what greenhouse plants he grows before I can say anything to him about what Orchids he can manage.—**M.**

5335.—Plants in a hardy fernery (C. C.).—I advise you to get ready for a month of sun. You say it is all right for planting, but you had better let the snow and frost get off the ground before you attempt it. Please ask your question again in a month's time.—**J. J.**

5336.—Ferns for profit (J. P. W. and others).—I do not know what to do about this matter. It seems to me rather overdone, and as others have everything to begin with, and have their houses and pipes in good working order, therefore, I advise you to leave it alone.—**J. J.**

5337.—Summer-flowering Oatleya labiata (J. Birmingham).—I do not know upon what authority your friend names Oatleya Warner as this plant, although Warner is very like the typical flower; the plant you called C. Gaskelliana years ago was known as C. latifolia pallida, but was called the Summer-flowering labiata; but perhaps your friend was not well enough up in Orchids to know that?—**M. B.**

5338.—British Ferns for a cool-house (H. G.).—Evergreen kinds are the only ones which will stand you in any service during the winter months. For instance, the Hart's-tongue Fern (*Asplenium vulgare*), of which there are innumerable varieties, will form a splendid show, as also does the Black Maiden-hair (*Asplenium Adnigrum-nigrum*), commonly known in market as the French Fern, which is always acceptable. The Holly Fern (*Polypodium lonchitis*) is another very handsome species. Any other hardy kind that retains its foliage may be used with advantage.—**J. J.**

5339.—Orchids for a span-roofed house (J. J. C., Lyndhurst).—Angulolabium and Barkeri; Cymbicaria barbatia and cristata; Cymbidium chinense; Masderalia Chinensis, Toverensis, Dalmi, Barranua, Houletiana, Shillworthii, Vietniana; Maxillaria grandiflora, and Sanderiana; tholomiglossum linianum, crispum, Cerrantoid, cirrhosum, glaberrimum, Halli, Himevelianum, luteo-purpureum, maculatum, Pescatorei, Polyanthum, Rosei, sinense, Sanderianum, tringianum; Oculodan coloratum, crispum, hastatum, inermatum, uscaratum, ornithocorymbum, ligulatum, varicosum, and Sophronitis grandiflora. The above will make you a start.—**M. B.**

NAMES OF PLANTS AND FRUITS.

*Any communications respecting plants or fruits sent to us must always accompany the parcel, which should be addressed to the EDITOR OF GARDENING ILLUSTRATED, 31, Southampton-street, Strand, W.C.

Names of plants.—**P. Hardy.**—Hegonia Rex var. apparently, but sent a pair specimen is difficult to name. **Miss Reid.**—Apparently a Selaginella or Club Moss, but specimen so minute as to be scarcely visible. **W. Williams.**—Narcissus Tazetta var. **K.**—Apparently Cryptoceria Japonica, but specimen sent is a better specimen.—**M. G. B. Stafford.**—Schizanthus lincecumii. **A. Bolton.**—Please send in flower; impossible to name from a single crushed leaf. **J. S. D.**—A small form of Lælia purpurata. **S. K.**—Looks like a Linnæa, but shiver too much crushed to name. Send better specimen in a box.—**N. Pears.**—1, Aspidistra lurida variegata. 2, Carnot name. 3, The common Laurustinus.—**W. H. Arthur.**—Paris pretia alba-albida. 2, Adiantum Canaliculatum. 3, Paris arguta. Leaf cannot name. **J. B.**—Strob. Gerythium alpinum. Begonia leaves all varieties of B. Rex. **J. P. Parson.** **Polygala.**—1, Cryptoceria Japonica. 2, Toxica hancata probably. 3, Cupressus Lawsoniana. 4, Cupressus Lawsoniana viridis. 5, Biota orientalis. 6, Biota chinensis. **Lady Amateir.**—We cannot name from description. It may be Brugmansia. Send in flower.—**Ositham Chase.**—We should like to see specimens again when in flower.—**T. Bant.**—Euphyllium truncatum.

Names of fruit.—**Box of Apples.** No name or address.—**Winter Quince.**—**Lee.**—Apple: King of the Pippins. **Mr. Goodrich, Clare.**—Apples: 1, Wellington; 2, Norfolk Seedling; 3, Seekonk Parlier; 4, Ribston Pippin; 5, Roundwood Magnum Bonum; 6, Five-crossed Pippin; 7 and 8, Not recognised; 9 and 12, King of the Pippins; 11, Wellington; 11, Bad specimen. Please do not send so many in future, and more than one specimen of each kind should be sent.—**T. Bant.**—Apple: Northern Greening. Pear: Josephine de Malines.—**Ruff.**—Apple: Mère de Ménage.—**Thos. Borerie.**—Pear: Baster Bourré.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender. **Handker.**—Apply to a chemist or oil-store keeper.—**William Gray.**—Apply to Mr. B. H. Ravencroft, 14 Bell Wood, near Crawley, Sussex, who is the raiser of the Tomato in question.—**A. V. Cheshire.**—Yes; apparently a fair-sized loan, and it should do for potting purposes. **W. B. Butler.**—The leaves have been badly affected with mildew. Fumigate with Tobacco and then syringe the plants with soapy water.—**Disappointed.**—I should

at the roots, most likely.—**I. M.**—Probably the above is dirty. We cannot tell without seeing it.—**Lady A.**—"Greenhouse and Store Plants," by T. Baines, published by John Murray, London.—**L. G. Jersey.**—Apply to Mr. J. Groom, Scotland-avenue, Hampol, Hants.—**Charles Ingham.**—Apply to Mr. E. Molwyn, Swanmore Park Gardens, Bishop's Waltham, Hants.—**Mr. G. B. Southwell.**—Pelargoniums, generally speaking, require but little water in winter.—**Acklan.**—We do not know of a book that will help you. Send in here any queries you wish.—**J. M.**—No; lamps may be used with rare in a conservatory.—**Tou-tii.**—Apply to A. U. Hitler, Esq., The Lilies, 124, Beckenham-road, Beckenham.

BEEES.

5261.—Management of Bees.—Unless absolutely necessary, it is not good policy to feed Bees in mid-winter, and the only safe food to supply to newly colonies now is sugar-cake or honey, which should be placed over the feed-hole on top of the skep, and covered up warily. It is made by boiling about three pounds of loaf sugar with about half a pint of water until it will set hard upon being suddenly cooled. It is then moulded into any desired form, and in half an hour is ready for use. If not inclined to make it, a substitute will be found in the ordinary sugar-candy of trade. The amount of stores required by a colony very much depends upon the manner of wintering it; the less adequate the protection from cold the greater is the amount of food consumed. Strawskeeps require careful consideration when their provision for winter is being attended to. Judging the contents by lifting is not always safe, as age of combs, pretable amount of pollen, &c., has to be taken into account. The wintering of Bees in straw-hives is, however, attended with much less trouble and risk than in frame-hives, although the latter are much to be recommended in the intelligent management of Bees, as in them we have complete control over the inmates, we can interchange the combs and Bees from one hive to another, examine a stock in a few minutes, make artificial swarms, rear queens, remove full combs in the honey season, extract the honey from them and replace them in the hive to be refilled, and save the Bees the labour of wax production by furnishing the frames with comb foundation. Any swarms that may leave the skeps next season should, therefore, be put into bar-frame-hives, if "Young Beginner" wishes to be up to the times in advanced Bee-keeping. A south aspect is very good, but south-east a little better, as the Bees get the morning sun earlier in this position.—**S. S. G., Sharnhurst, Newton.**

POULTRY AND RABBITS.

5262.—Poultry keeping.—I should say that while not being actually "injurious" to setting hens to be in total darkness, it is better for them to be in a small quiet place with light and ventilation. The best food for all fowls during the winter months is a good hot breakfast of boiled Potato parings and table scraps chopped, mixed very stiff with Sharp's Spratts, or Old Cheddar food, and a little poultry variegated added about twice a week. Their next meal should be of mixed corn about 3.30 p.m., and it is a good plan to put some corn down after dark for the fowls to have as soon as it is light in a morning. The straying hen should be caught and penned up for a few days—in fact, my experience proves that fowls are best confined to a run during cold weather.—**NANCE.**

BIRDS.

5340.—Canaries.—Will someone be kind enough to give me a few hints on the rearing, breeding, and management of Canaries? Also how I may tell the cock from the hen bird?—**BEAR.**

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GARDENING ILLUSTRATED.

No. 777.—Vol. XV.

Founded by W. Robinson, Author of "The English Flower Garden."

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SUMMER FLOWERS FROM SEED.

THE propagation of plants from seed to assist in brightening the flower garden at different seasons of the year is now so general, that a summary of things required for various purposes through the summer months is an essential feature before the dispatch of the seed order. I mention for "various purposes," because plants raised from seed adapt themselves to many requirements—for climbers and trailers, as Cucubas and Marandayas; for sub-tropical work, as Acacias, Tubaccos, Wigandias, and Solanums; as substitutes for other bedding plants, as Asters, Marigolds, dwarf Calceolias, Lobelias, and Phlox Drummondii; for summer and autumn cutting, as Sweet Peas, Annual Sunflowers, Chrysanthemums, and Dahlias; and for bold massing in outlying shrubberies, as Camellia, Mignonette, Cornflowers, and Clarkias. The subjoined list is necessarily somewhat curtailed, but I think it will be found fairly comprehensive, and all plants enumerated therein are of easy culture. Not many decided novelties were to the fore last season. Probably one of the most striking is the Butterfly Pea (*Centrosema grandiflora*). It should prove useful for covering trellis work of every description, and if also a good trailer, will be grand for the fronts of boxes and the edges of raised beds. Nearly the same remarks apply to the variegated Japanese Hop; this will prove a decided acquisition if sufficiently pronounced in colour. The new forms of Iceland Poppies (both single and double) will be valuable for cutting, so also will the two white flowers—Guletin White Pearl and the White Margarita Carnation.

MANY novelties are announced in Sweet Peas, but an investment in collections of new varieties is rather an expensive luxury, and really good things are obtainable from mixed packets. Of rather older sorts, Mrs. Sankey and Princess Beatrice are two lovely flowers. Many other things may be found catalogued as novelties, of which some few doubtless deserve the name, whilst others, although in a certain sense new, often represent only a really good strain of things already in commerce. Turning briefly to the general collection, it will be found that among the best bedding annuals are dwarf Marigolds, China Asters, and the newer forms of Calceolias, Phlox Drummondii in various colours, Double Zinnias, Petunias, and East Lothian Stocks. All the larger seedling things can be sown on a prepared bed in a slight warmth; very fine seeds, such as Petunias and Lobelias, are best in boxes. The Stocks should be sown in August, transferred to pots or boxes, wintered in cold frames, and if planted out as soon as the weather gets a bit settled in spring they make a grand bed, and are also valuable in a cut state. All the above are useful for filling beds previously occupied with spring flowering stuff, and have, with the exception of the Asters, a lengthy flowering season, a feature which renders them much more useful for this particular purpose than annuals of equal beauty, but which are comparatively short lived.

IN COMING SEASONS for summer and autumn cutting, Sweet Peas, Digitalis, and the first

place. They should be sown early in deep-lying and prepared ground, be protected from the attacks of birds till well up, and during the flowering season all seed-pods must be promptly and thoroughly removed. Poppies are now in great request, and are special favourites in a cut state all through the summer months. I should place Gaillardias and the annual single Chrysanthemums (*carinatum*) very high on the list for cutting. They are of easy culture and stand well in water. The new race of Comet Asters is also useful, and a hatch of seedling Carnations is indispensable. Of stronger and taller plants the miniature single Sunflower and Helianthus citrinus are very useful, although gardens that boast of grand clumps of the perennial types may hardly require them. Dahlias, both single and Cactins, are now largely treated as annuals, and the flowers are useful for tall vases. Besides these things enumerated earlier in these notes as valuable for sowing in quantity on shrubbery borders and more secluded parts of the flower garden, may be included Eschscholzia, Linum, Whitavia, Nasturtium, and plenty of Mignonette. Into the question of plants for sub-tropical gardening it is hardly necessary to enter at length; they are used but sparingly in the majority of gardens. Eucalyptus globulus and E. citriodorus, Acacia lophantha, Nicotiana glauca, one or two Solanums and Wigandias, and Ferns gigantea are a few good things easily grown. Plenty of Nicotiana glauca must be provided; this is about the most valuable acquisition we have had in the last ten years. Two fine foliaged plants of dwarf habit obtainable from seed, and that are always useful, are Dell's Crimson Beet and Conteaurea rugosa.

THE LATE SEVERE FROST AND GREENHOUSE PLANTS.

THE frost of the night of the 4th of January put to the test the merits of the glass-house heating apparatuses in this locality. In a house heated by a flue I found in the morning every plant frozen, except those actually standing on the flue. I put as many as I could under the stage, and covered the rest with paper. Although I kept up a good fire the whole of the day, I could not thaw the frozen soil in the pot. On the same morning I was in a house (belonging to a market-gardener), heated by two rows of pipes, which the owner thought (the house being low) would be sufficient to keep out frost. The pots were then frozen on the stage, although the pipes were nicely hot. Things were all right in other houses with four rows of pipes. One remarkable thing in connection with this frost is the exceedingly small damage done to vegetation (generally) standing in the open ground. Stocks, Wallflowers, hardy annuals, Camellias, Chrysanthemums, and other things that have suffered severely in winters when the minimum temperature has not sunk nearly so low now show but little effects of the ordeal they have been through—in fact, there is scarcely anything destroyed. How is this to be accounted for? Must I not attribute this wonderful preservation of plant life to the weight of the snow? Not that it shields it

from the severity of the frost, as the snow here did not begin to fall till after the minimum point was reached. It doubtless acted first by checking the action of the thaw by causing a more gradual rise of temperature, and, secondly, at the same time shielding it from the injurious action of light. I am inclined to think that paper coverings act much in the same way. When I banked up the fire for the night of the house with a flue above referred to, I put a newspaper, which I had at hand, over some of the Cinerarias in the house. In the morning I found them frozen along with the rest, and after the thaw I could not see that they were looking any better than the rest. There were three dozen of them. They all looked the worse for the freezing, but only two were killed outright. A dozen had the growing points nipped. Half-a-dozen Pelargoniums in the most exposed part of the house were destroyed, and three or four of the Heliotropes, but all the rest I saved. During the hard frost of three winters ago I saw some paper put over some rooted "Geranium" cuttings. When the thaw was completed it was found that a good number of these had survived, while all those "Geraniums" that were not covered, and everything else in the house except some Indian Azaleas, had succumbed to the rigours of the long frost. By-the-way, I have proved on other occasions that Indian Azaleas will stand several degrees of frost. These facts are another proof of what has been so often taught in GARDENING—that many frozen plants might be saved if treated properly during the thawing.

L. C. K.

WINTER flowers.—Saturday, January 13th, was a lovely day here, more like April than January. The Bess of my large apirny were out in full force, humming round the beds of Snowdrops and Yellow Aconites—planted and blooming in loveliness in the Grass—and curling over the drooping racemes of the middle of December, and though during the severe frost they lay prostrate, the flowers are now bravely erect, no worse, apparently, for the visit of the recent frost. In a corner in sand there is a nice lot of Iris reticulata, which are now 6 inches high, and are very vigorous. The position is a dry one, and they are growing in sand, such as composes the banks along the seashore of Cumberland and Lancashire, with a very little of the staple garden soil mixed with it. These "winter" flowers are indeed precious to the lover of the simple beauties.—JAMES STONEMAN JESSE, Kirkbride, Silloth, Cumberland.

529th. — *Lysimachia Nummularia aurea*.—This is a yellow sport from *Nummularia*, and it is doubtful if reliable seed could be obtained. It is true the Golden Feather is a sport from the common Green Feather, and the Golden Feather comes true from seed; but the *Lysimachia*, in many cases, does not seed freely. At any rate, there is no difficulty in getting the plants, and they soon spread, and may be rapidly increased by division.—E. H.

ROSES.

SCOTCH BRIERS.

THE varieties of our native *Rosa spinosissima* are quite hardy, and if only the ground be well broken up and manured when the plants are first put in, Scotch Briers are better able to take care of themselves than any other kind of Rose of garden origin. Climbing Roses want training and tying; Hybrid Perpetuals require pruning and mulching, not to mention the keeping down of aphids and milliw; Teas and Noisettes need protection in winter, but Scotch Roses, if carefully planted at first on their own roots, need neither pruning nor protection, training nor top-dressing, are victims to neither green-fly nor milliw, and, in fact, may be trusted to thrive without any special attention for a considerable number of years. These Roses are not at all particular as to soil, but if it is very poor a light mulching of short manure in November will keep them in good condition. They should be planted in a place by themselves, when they will throw up their spine-covered suckers freely from the base, and soon entirely cover the ground, and as they do not grow more than 2 feet, or at most 3 feet, in height, they thus make a very ornamental mass, flowering freely at every joint. Indeed, their freedom of flowering tends indirectly to render them

maintained in the globular flowers of the more double varieties, while in soils and situations where the successful cultivation of most other Roses would be hopeless, flourishing plants and flowers in abundance may be had of the Scotch Briers.

5325.—**Climbing Rosess in pots.**—You need do simply nothing to the plants, either in the way of mulching or pruning. When the shoots you mentioned have bloomed, cut them back to about 6 inches from the base and keep the resulting growths as clean and healthy as you can. They will then bloom well the following year. Always avoid heavy feeding, in the form of mulching and liquid-manures, until the soil is somewhat exhausted. Plants thrive better when their food is assimilated almost as applied, and the overabundance too many amateurs affect is often the cause of partial failures. —P. U.

5331.—**Marschal Niel Ross.**—A pot 6 inches in diameter is not large enough to get this Rose to flower in satisfactorily, nor will you get a full measure of success from one 3 inches larger. You would do better by putting it into a large Rhubarb-pot, as you suggest, if you can find room for it in any other position in the house than under the stage. With regard to the stock losing its back and looking rusty, that is not of much consequence. It will be

is to let there be no Grass immediately round the stem, and the reason is obvious, as turf keeps away light, the freshening influence of rains, and deprives the roots of a certain measure of sustenance.—C. T.

— This is such a vigorous-growing Rose that it does not matter much whether turf should be removed from over the roots or not. In the case of any other Rose it is desirable to do so.—J. C. C.

— When a good-sized bush has been formed the roots may be buried over without injury; but to guard against injury from the mowing-machine it may perhaps not be advisable to put close up to the stem.—E. H.

5327.—**Roses in pots.**—The Roses will not take any harm from the treatment, although they would have been all the better if they had been left out in the open for another two months, if the frost had been kept from the pots. The top-dressing, at the time you state, with guano was a mistake. If you had waited until they had shown their flower-buds it would have done me more good. I like to prune and top-dress fl. P. Roses growing in pots, that are not to be forced early, about the middle of December, and unless they can have quite a good-house, they are better in the open air. The buds and the Roses will do very well together.—J. C. C.

— I do not see how "Londonderry" could possibly have done better than he has. Roses and the bulbs he names are eminently suited for the same temperatures. Avoid too great heat for a time longer, and then attend to watering and syringing the young Rose growth, and I feel sure he will realise a highly creditable and satisfactory crop of bloom. I would keep as near to the following temperature as possible: Night, 40 degs. to 50 degs.; day, 50 degs. to 65 degs. Much of this must depend upon the weather, the higher points being reached upon mild and bright periods.—P. U.

5328.—**Forcing Rosess for cut bloom.**—Unfortunately I cannot put my hand upon an issue for Dec. 30, so cannot answer "M. E.'s" query so fully as I would wish. Under these circumstances I can only ask him to kindly repeat his query if the following does not suffice. Climbing Roses of the Marschal Niel type may be planted 6 feet or 8 feet apart, and limited to three rods each. This will give 2 feet of roofing to each rod. When in pots or the side borders, I would arrange them so as to afford this space to each rod; but in the case of pot plants one rod to each would be sufficient; thus needing about three times the number of plants.—P. U.

5326.—**Making a propagator.**—A cheap and simple propagator for raising seeds, &c., may be made in the following way: Take a packing-case about 15 inches deep; remove the lid, and nail a piece of sheet iron (which can be bought from any ironmonger's) in its place. Next cut a piece out of the side of the box large enough to let the lamp pass in and out; this must be covered over with a door to keep the warmth in, but holes must be bored round the top of the box for ventilation. On the top of this another box must be put the same size, or smaller than the first, 7 inches deep in front, and sloping slightly up. This must be covered by a light, which can be made by anyone with a saw, a screw-driver, and some screws. To make it cut some strips of wood (part of the lid of the box would do), two strips 2 inches wide and the same length as the box, add two more strips 2 inches wide, and 3 inches shorter than the width of the top of the box. Next cut two strips 1 1/2 inches wide, and 4 inches longer than the end strips, and one strip, 1 1/2 inches wide. Screw them together firmly, and hinge the light on to the top of the propagator. If the space seems too big to be filled by one pane of glass or more, sash-bars may be made of two strips. The lamp for the propagator should have a low tin tank, a duplex burner, and a glass chimney. It would cost about 3s. 6d. at an ironmonger's. Ordinary paraffin lamp-oil is the best to use, and if any carbon which has collected on the sheet iron is rubbed off whenever the lamp is trimmed it will do no harm. The top box of the propagator must be filled with sand, Moss, Cocoa-nut-fibre refuse, small pieces of turf, or anything that will hold moisture for some time. The pots for seeds, &c., must be plunged in this, and it must always be kept damp.—H. G. ILLINOIS AT



Rose "Scotch Brier."

essentially garden Roses, as opposed to Roses for cutting, for in addition to their innumerable thorns, which make them somewhat uncomfortable subjects to handle, the flowers are so freely produced that they are liable to be inconveniently short-stalked, unless an entire wreath be gathered. It is true that the Scotch Briers are only summer-flowering, but then their delightfully fragrant flowers come so long before the generality of garden Roses that they are especially welcome. Moreover,

ONE OF THE PRETTIEST and most sweet-scented varieties is a perpetual, blooming a second time in autumn. This variety was raised at Stanwell, and distributed under the name of the Stanwell Perpetual. In habit and appearance it is not very different from the summer-flowering varieties, but its pretty globular lush flowers, of a most delicious fragrance, are freely produced both early and late, it being no uncommon thing to find them in good condition during October. Numerous varieties have been distributed at various times. These Roses are now hardly ever referred to or even obtainable by name, being, as a rule, merely described according to colour, as white, pink, yellow, &c. There are, unfortunately, in cultivation many very dingy-colored varieties, which have got these Roses a bad reputation from a decorative point of view. Nothing can be more charming than a mass of these dwarf, delightfully fragrant and very hardy Roses, whose buds are in miniature the perfection of form, a quality which is

better, however, if when repotting it you bury the whole of the stock and about 2 inches of the stem of the Rose. If you make a barrier for the roots you may plant it in the conservatory, and the growth may be trained to the wall until it reaches the glass; but whether the growth in the wall will flower depends on how much light and air reaches it to ripen it. There is no reason, however, why you should not succeed with it in the span-roof house if you give the plant more root space in a fairly light position. I may here tell you that I quite agree with "J.'s" statement that the only profitable way of growing this Rose is to plant it out in a border of good soil.—J. C. C.

5321.—**Rosa rugosa on a lawn.**—I suppose from your query that you are doubtful whether it would do to allow the turf close up to the stems of the Roses. The roots of Grass penetrate to an almost incredible depth, so that they naturally rob the soil to the disadvantage of the Rose. A further reason why I would not have the turf quite close to the plants lies in the great benefits accruing from slight surface culture; this is obviously impossible without injury to the turf; therefore, keep a neat and well defined edge around the plants.—P. U.

— This Rose would take no harm from having the turf up to the stem, but it would be better to have a space of soil round the bush, as though a top-dressing of manure or a good soaking of water may be given during the summer months. In the case of all trees, the better way

HOUSE & WINDOW GARDENING.

5301.—Creepers for a window.—The dwarf forms of Nasturtiums are wonderfully showy when hanging over the front of window-boxes, as also are Petunias. As you want a variety the Canary Creeper is very suitable, so is the little evergreen Virginian Creeper. Nierenbergia gracilis is exceedingly free flowering, and quite a change from other plants. Convolvulus major in variety is frequently used for this purpose, and in sheltered windows the drooping forms of the Tuberous-rooted Begonias will not fail to please you. Root to these the trailing forms of Ivy-leaf Geraniums and you have a good variety.—J. C. C.

—Creeping Jenny (Lysimachia Nummularia) is a capital plant for covering the fronts of boxes in town. Ivy-leafed Pelargoniums, Lobelias, and Nasturtiums are all useful.—K. H.

—The best of all flowering plants to hang over the sides of a window-box is the Ivy-leafed Pelargonium, which is well adapted for the purpose, its long shoots being wreathed with flowers through the best part of the season. It is most satisfactory in every way. The Creeping Jenny is another good plant to use, and if you plant good pieces they will grow quickly, and hang down over the box; their green shoots are surfeited with yellow flowers in the summer. Or you could get some of the small-leaved Ivies, and these are less stereotypical. There are also Campanulas, as C. isophylla alba, C. carpatia alba, or C. garganica; but these will not grow so quickly nor make such a perennial show, so to say, as the Ivy-leafed Pelargoniums.—C. T.

5311.—Room plants nipped by frost.—Take the plants to a warm greenhouse if there is one for a time till new growth is obtained. If no such convenience exists keep the roots just a little drier and wait patiently. The plants will probably shoot up again from the bottom if not too badly frozen.—K. H.

—I am sorry for your mishap, as I am afraid that the prospect of a good bloom is destroyed. Your only plan is to remove the plants, if possible, to a greenhouse, moderately heated—sufficiently so, at any rate, to keep out frost. They will start again, and it depends upon to what extent they were damaged as regards future blooming. From your query I am afraid it is hopeless. Remove the dead leaves, and with gentle warmth they will soon recover.—F. V.

TABLE PLANTS.

BERRIED SOLANUMS.

These are most valuable for table and general room decoration during the autumn and winter. Intending growers should bear in mind that the seed of these Solanums (S. capsicastrum var.) cannot be sown too soon after the beginning of the year, to obtain plants of a suitable size and well furnished with berries. Unless there is a



Berried Solanum.

temperature of 50 degs. available it is, however, of no use to sow very early, for the seed will not vegetate satisfactorily in a lower temperature. As soon as the seedlings are large enough they must be put into small pots, in which they should remain until the soil is full of roots. The easiest way to grow them is to plant them out at the end of May, in a bed of soil, in a frame, where they can have the protection of the lights for a few weeks. In the autumn they must be taken up and put into pots, and shut up again in the frame, until they will bear being sir and sun without being injured. Early in the

autumn they must be taken into the greenhouse, and in due time the berries will assume their proper brilliant colour. B.

5299.—Table plants.—There is no general rule as to the height of these now. Many years ago, when prizes were offered by the Royal Horticultural Society, the rule was for the plants to be grown as standards with 18 inches of clear stem, so that the guests could see each other beneath the foliage; but such plants were gawky and inartistic, and nobody of any weight followed the lead, and the most useful plants now are Feathery Palms, with small variegated Grasses, and similar light, graceful things of different heights to suit different tables and positions, and a good deal is done with foliage and flowers in the clothes. In growing table plants for exhibition sometimes the schedule states the size which must be exceeded, or else they are confined to a particular size of pot. The pots usually selected for table plants are 5 inches in diameter, but it is often found that Maiden-hair and other Ferns may be used in still smaller pots with great advantage, and such things as Fittonias and Mosses may be used in pans for a change.—K. H.

—You must abide entirely by the schedule in such a case. As far as I know, and I am acquainted with the majority of societies, there is no such rule, but many societies have their own characteristics. It would be well if table plants were always kept down to a certain height and used more sparingly than is the case too often. They are a hindrance to conversation between guests at dinner.—C. T.

—I never heard of any rule limiting the height of table plants, although it is well understood by good judges that they should not be too dwarf or too tall. Twelve inches above the pot is a safe rule to follow. The safest plan to adopt is to consult the rules of the particular show you intend to exhibit at. If no height is given you may follow your own inclinations. You must, however, understand that there are other points besides the height that have to be considered.—J. C. C.

—I have not heard of any rule as to the height that table plants shall bear any exhibition. This is a matter always left to the discretion of the exhibitor. Some judges favour very small plants, not more than 9 inches high from the top of the pot, while others consider they should be not less than 12 inches or 15 inches in height. Plants 1 foot high from the top of the pot, which ought not to be more than 6 inches in diameter, are very suitable for the majority of tables. For a large dinner party, where the table is of extra length, it would require taller plants, of course. A point of more importance is to select suitable kinds and as much variety as possible. In a collection of six plants there should not be more than two Crotons, a red and a yellow-leaved one. No chess of plant is better adapted for dinner-table decoration than Crotons. They are not only light and graceful, but the rich markings of the leaves show to perfection under artificial light. In all cases the plants should be of a single stem, with perfect leaves shown to the top of the pot. Dracena gracilis, Andin Veitchi, Crocus Wohllebium, and a well-coloured plant of Pamelans Veitchi would make a capital six.—S. P.

5301.—Cow-manure.—Do not get anxious about the cow-manure killing your Rhododendrons; it will do them more good than harm, especially if it had been lying some time exposed to the weather. Some peaty soils are very poor. If you are of that description you may repeat the application once a year with manifest benefit to your plants. I have found that in a good loamy soil the plants liked a top-dressing of some fine material that washed away into a kind of powder. It is surprising what a lot some people know. I do not, however, object to their superior knowledge if they did not disturb the peace of mind of other people without a cause.—J. C. C.

—Unless it was put on in a very rank state it will not hurt the Rhododendrons. When Sir J. F. Llewellyn lectured at one of the Royal Horticultural Society's meetings last summer, he said that no manure was needed by Rhododendrons; but a gentleman who took part in the discussion which followed said that in his experience and dealing with a soil not adapted to the plants, he found good results followed from the use of cow-manure. A. H.

INDOOR PLANTS.

CAPE PELARGONIUMS.

We very seldom meet with these most useful winter-blooming plants now. Some ten years ago I had a fairly good collection, and I have seen them in fine form at Messrs. Cammell's nursery a few years back. I do not remember just how I lost my own, but they are all gone now. Their extreme usefulness was very forcibly brought to my mind when looking over



Cape Pelargonium "Pretty Polly."

a neighbouring garden at Christmas. In every respect these are unique and showy little plants; they are billians rooted, have very pronounced prickles, and the foliage is almost as strongly perfumed as the Oak-leaf and other scented Pelargoniums. P. echinatum, the type, was introduced from the Cape of Good Hope about a century back, and has trusses of white flowers, spotted and striped with deep maroon upon the upper petals. A variety of this under the name of Spotted Gem has rose-purplish as a ground colour, and is spotted with deep-crimson. It is a more compact truss, but not so close habitually a plant. Pixie, Beauty, Ariel, and Pretty Polly (here figured) are all distinct and good. I do not know how to describe the flowers of Ariel better than likening them to trusses of the old Unicorn, only more plaste in form and colouring. All through the late autumn and winter these Pelargoniums are most profuse flowering. When spring flowers are plentiful, strikes the young growths like the ordinary Pelargonium, and grow them on freely. I used to stand them in the sun on an open border from July to September, keeping them rather dry at the root and so securing wool almost ripe enough to cast its leaf. When introduced into heat in the autumn they bloomed profusely until March and April, when they were then propagated from. P. U.

5320.—Plants suitable for growing with Ross in an unheated house.—"Lewishamite" will find all of the following suitable for his purpose; but there are far too many which might be used to admit of a complete list being given: Spirea japonica, Dentzia gracilis, Lily of the Valley, Hycanthus, Tulips and other bulbs, Azaleas (both the Indian, Ghent, and Mollis sections), Camellias, Ixias, late Chrysanthemums, Carnations, Bonanias, and heaps more. I do not say they should be allowed to stand frost while in full bloom, as at this time Roses are in young growth, but the unheated house should form sufficient protection from frost. There are many foliage plants which would look well in the house during winter, and before other subjects come into growth. Osmanthus, Berried Aucubas, Solanums, Variegated Alms, and others would look well and benefit for the little protection until the sharpest of the spring frosts are past. Ericas, Emerises, and a few of the better forms of highly Heaths, such as E. carnea, E. caerulea alba, and E. clytonia japonica and its

varieties, *Chimonanthus fragrans*, *Myrtle*—in fact, a vast number of subjects are quite suitable for an unheated house and will form attractive companions to the Roses. The *Bomardias*, for instance, would make new growths from older wood which was sufficiently hard to stand a slight frost.—P. U.

5313.—**A saddle boiler.**—By "anno other material," I suppose you mean asbestos; but I do not think—in fact, I am sure—that it is impossible to heat a saddle boiler satisfactorily in this way. A properly constructed copper boiler would give far better results, however, at much less cost, certainly, when the cubic contents of the houses exceed a thousand cubic feet, as in this case. You had better get a good catalogue of gas-heating apparatuses.—B. C. R.

Probably with a very great waste of heat any sort of boiler could be heated with gas, but the proper thing is to have a boiler constructed on purpose for gas. I cannot, however, advise you to attempt the use of gas in this case; it would be much too costly. With a saddle boiler properly set and good coke or anthracite coal you can heat the two houses more economically than by any other means. You had better call in a skillful engineer in the first place to advise you about the position for the boiler and pipes.—J. C. C.

5208.—**Coleus-cuttings.**—These will strike freely at any time of the year; but if wanted for the summer conservatory decoration I should advise "J. E. J." to take his cuttings in the middle of the following month (February), as they will strike quicker and make better specimens than if inserted now, for if taken too early, one stands the risk of losing their under-leaves, which spoils the appearance of the plant. *Coleuses* thrive well in a compost of one-half good loam, one-fourth thoroughly rotted cow-manure, and one-fourth good leaf-soil, with addition of a little sharp sand to keep the whole porous. Great care must be taken that the plants never suffer for want of water. Cuttings are best inserted separately in small pots, placed in a bottom-heat of 70 degs. As soon as the roots touch the side of the pots they may be shifted into larger ones, pinching out the end of the shoots occasionally to secure bushy plants. When well established a little liquid-manure is very beneficial.—F. T.

5311.—**Treatment of Cannas.**—Turn the plants out of the pots, remove all the soil from the roots, and divide them. By pulling them into pieces, every bit with a root attached will grow and make nice plants in a few months' time. Place each piece separately in pots of suitable size; those in which the roots will grow comfortably are large enough. A compost of loam and leaf-mould filling this latter, horse-manure will answer with a little peat added—three parts of loam to one part of the leaf-mould, adding sharp silver-sand, according to the state of the loam, heavy or light. Stand the plants in the greenhouse, giving just sufficient water to prevent the soil becoming quite dry until growth is fairly on the move, when abundance of water will be advantageous. Do not dry them off with the idea of losing their leaves; the plants cannot carry too much foliage. When the plants are freely growing during the summer syringe the leaves once a day at least; this will keep them healthy, and free from dust and insect pests. S. P.

Divide the roots into pieces consisting of one strong crown, or two or three smaller ones, pot them singly in 3-inch or 4-inch pots, using good rich sandy loam, and start them in a gentle hot-bed, or in any warm-house or pit. Shift on as required, harden off in May, and plant out early in June in deep, rich soil and a sunny situation. The plants would have been all the better for going to rest for a short time, but it will not make very much difference to the growth. There is time enough to divide them yet. March will be quite soon enough, especially if you have not much heat at present.—B. C. R.

5314.—**Plants in a cold frame.**—I wonder you have been able to keep "*Ceraniums*" in a cold frame without artificial heat, unless you protected well, but take care in the future. You must not let any of the things mentioned get dust-dry, particularly the Ferns and *Chrysanthemums*. On mild days, such as the present, a good opportunity is given of watering freely. If the *Chrysanthemums* are permitted to go dust-

dry for any length of time they never recover satisfactorily, and always feel the effects of this neglect. Still, be careful not to go to the other extreme, and splash the water about anyhow, as this engenders damp, which means, in the winter in particular, decay.—F.

5310.—**Sowing seeds of Callas, &c.**—The seeds of the *Callas* may be sown in the hot-bed at any time now. If well grown they may flower next year, or some of them. I have had them flower in twelve months from the seed, but the flowers are generally small on seedlings at first. Seeds of *Genistas* may be sown in the hot-bed or in a warm greenhouse any time during spring. All the plants named may be bought cheaply now.—E. H.

Sow the seed at any time now in a pan of sandy loam and peat, placing in heat and keeping moist. The plants will probably not flower till the third year at least. Seeds of the *Genistas* should be sown in March or April, using sandy loam and leaf-mould; seedling plants do not bloom an soon or so freely as those from cuttings. If you want a large or considerable number, the best time to lay them would probably be in the autumn, when such things can often be picked up at the large trade sales very reasonably.—B. C. R.

WINTER GARDENS.

Nothing is more pleasing in the whole range of gardening than the effects which may be produced in a tastefully-arranged and well-kept winter garden. We are therein enabled to give some slight idea of the general aspect of tropical and other vegetation. The house itself need not necessarily be a large one; indeed, one of the prettiest winter gardens I ever saw was very small. It had been built for a lady in infirm health, and was attached to the dwelling-house. In it was nothing rare or tender, but the subjects were suitable, tastefully arranged, and the hands of the owner herself kept them healthy and clean by means of frequent washings and spongings. Many an hour was thus pleasantly spent in the exercise of a boring cure which had its reward in the bright appearance of the

&c. In the latter we get a strong tinge of tropical verdure to the arrangements by employing *Palma*, *Pandanus*, *Strelitzias*, *Brownias*, &c.; some of the Tree and other Ferns can be tried. The great mistake made in winter gardens is overcrowding; it is often just the same here as in outdoor planting, thinning is not done in time, and the whole degenerates into a weary tangle. Ultimately something must be taken away, with the result of more fully exposing the debilitated specimens. So avoid overcrowding and plant well in the first instance in good soil. It is scarcely necessary to dwell upon the uses and advantages of a winter garden; its name sufficiently indicates the end and aim of its existence—a place of resort when inclination, health, or weather forbids wandering far from home. The annexed illustration gives a good general idea of the arrangements of a small winter garden. C.

5297.—**Libonia floribunda.**—You would scarcely succeed with this in an unheated house as regards winter blooming. To get this we need a temperature of 50 degs. to 55 degs. It will bloom in the early spring with heat. *Libonia perhosiosensis* (or *perhosiosiana*) is by no means the same as *L. floribunda*. The leaves are more acute, and the whole flower much brighter than the one heading this note. In the winter it is a deep fiery-red, and at no time has much of the yellow or orange found in *L. floribunda*.—P. U.

5323.—**Fumigating.**—The best of all fumigations is an oil sieve, having a coarse mesh through which the air can easily blow when the sieve is placed on two 6-inch pots on the floor of the house. The advantage of a sieve over any other utensil is that a greater area is employed for the smoke to ascend from. If a few hot embers are placed all over the sieve and covered with Tobacco-paper, slightly damped, a large body of cool smoke will issue from the sieve and quickly fill a large house. The point is not to allow the Tobacco-paper to blaze; if so the smoke becomes heated, and is thus injurious to the foliage operated upon. While fumigating a house water should always

be handy; in fact, it is best to have a small water-pot handy with a fine rose on it, and upon the first sign of the Tobacco-paper blazing sprinkle the whole with water. Covering the Tobacco when burning with freshly-gathered damp Moss is a good preventive from burning. There is nothing so efficacious as thoroughly good Tobacco-paper bought at a reasonable price; that which is sold at a low figure is seldom of much use. S. P.

You should not have accidents with the flower-pot, if you take care; but the way I used to fumigate was to get an old can and make a fair-sized hole at the bottom in the side. If the Tobacco-paper is not too dry it will not flare up, but there is a special contrivance now which you can purchase, I believe, cheaply. You make everything right beforehand, put it into the house, and leave it there, without fear of mishaps. Of course, in the case of the old-fashioned can or pot attention is constantly required and entering a houseful of smoke is neither pleasant nor wholesome.—C. T.

5295.—**A hanging basket.**—A hanging basket planted with Ivy-leaved *Pelargoniums* is very pretty and lasting. The basket may be filled, now and hung up in a



View in a winter garden.

plants. Winter gardens may be placed in two categories—viz., those in which heat is only applied to exclude frost, and those wherein a regular comfortable warm temperature is maintained. It will naturally be seen that the plants used for the two places must be somewhat different in character. In the former we must rely upon the inhabitants of temperate climes, but which we cannot well grow the year through in the open air in this country; such are some of the *Avanearias*, some *Ferns*, also *Ferns*, *Camellias*, *Acacias*, &c.

MARKET PLACE, CHICAGO, ILLINOIS AT URBANA-CHAMPAIGN

FRUIT.

5292. **Grafting fruit-trees.**—Whip-grafting is the best method for all young stocks and small branches of large trees after the young stock or branch has been cut back. A thick slice is cut off the side from 2½ inches to 3 inches in length, and made quite smooth. The scions or grafts may be about 4 inches long, and a slice is cut off the bottom to correspond with the cut in the stock, and the two are then fitted and bound together with raffia. The bark of the scion and that of the stock must join on one side, and the more perfect the fit the better the chance of a perfect union. It will be necessary to prepare some soft clay before the grafting is commenced, as the sooner the chying is done the better, and it should be so fitted round the wounded parts as to perfectly exclude the air. A little chalk mixed with the clay in the tempering will make it hold together and prevent cracking. Successful grafting or budding is very much a matter of selecting the right time. The best time for grafting is just after the sap has commenced its upward movement in March. Some seasons grafting may be done early in March, and occasionally it may be done to better advantage in April. Meet the sap in its full flow, and very few grafts will fail. In the grafting of large trees the tops should be sawed off to within a foot or so of the place where the grafts will be inserted before the sap begins to rise. For instance, all trees intended to be grafted this coming season should be cut back now, and the scions should be cut from the trees intended to be used as grafts and laid in under a north wall to keep the buds from starting, as it is better for the stock to be in advance of the graft. Whip-grafting is not suitable for large trees in most such cases. A cleft, wedge, or ring-grafting is adopted; and usually two or more grafts are placed on each branch according to its size. In wedge-grafting a niche is cut in the top of the stock across its centre downwards. The saw should be set wide for this work. The grafts are made in the shape of a wedge, and may be of more than one year's growth, and are driven in tight, one on each side of the stock, with the bark of each in contact. In ring-grafting the grafts are cut smooth on one side, the bark is removed on the other, and the grafts are then thrust down between the bark and the wood, the smooth, flat side being next the wood. In windy places it is necessary to secure the grafts with sticks as soon as they begin to grow, as the wind may dislodge some of them.—E. H.

5317.—**An old Pear-tree.**—As the tree here a large quantity of fruit the roots cannot require pruning, which is the usual remedy to adopt when fruit is sparsely borne. Some fresh soil and manure might be worked carefully in amongst the roots for at least 10 feet away from the stem. If available, liquid-manure should be poured on to the roots in quantity any time between now and before the tree comes into bloom, choosing dry weather for the work. From fifty to one hundred gallons would not be too much to give the tree at once; all the roots have then a chance of being stimulated in consequence. The tree should receive nourishment also when the fruits are swelling. If the weather be dry and liquid-manure not available, cover the ground for several feet away from the stem with half decayed horse or cow-manure, and give the trench thorough soaking of clear water. The juices from the manure will then be washed down to the roots.—S. P.

5302.—**Lean-to house for a Grape.** **Vine.**—Presuming that the Vine is growing against the back wall, and is to remain there, Oleanders and Tea-Roses may certainly be grown in the front part; but it will be too hot and sunny for a Lageria to do much good, as this plant revels in shade and moisture. If the Vine is trained over the roof neither Roses nor Oleanders will do much good; but Lagerias or Camellias may then be grown on the back wall.—B. C. B.

5305.—**Best market Melon.**—My advice, based on experience, is not to have anything to do with Melons for market. They are imported in immense quantities for cheaper than we can grow them. In nine cases out of ten the consumers will pay better.—B. C. B.

5304.—**Winter Apples.**—After the swelling process is over, wrap each Apple in soft paper, and pack in barrels or boxes, and place the barrels in a dry place or in any dry cool room where the light is not bright. The Apples will come out in splendid condition in March.—E. H.

GRAPE MUSCAT HAMBURGH.

It is much to be regretted that this high-class Grape is often unreliable. At its best it is of taking appearance, and is so much appreciated that it would rightly be placed before any other black variety in open competition, the Muscat flavour and aroma being even more pronounced than in the case of the Muscat of Alexandria. Mr. Barron in his "Vine Culture under Glass" states that it is a very old variety. For a time it was lost sight of, but was again brought into prominence by Mr. Snow, who named it Snow's



Grape "Muscat Hamburg."

Muscat Hamburg. Being well advertised, if I remember rightly, by Mr. A. Henderson, of the old Pine-apple Nursery, there was a very great demand for planting Vines, and it was thought that overpropagation was the principal cause of the variety failing to do well at the outset, but a longer acquaintance with this Muscat Hamburg demonstrated only too conclusively that no reliance whatever could be placed on it. Rather more than twenty years ago, Mr. Venn, living near Bristol, caused some sensation among Grape growers by showing repeatedly very superior bunches of a black Muscat-flavoured Grape under the name of Venn's Seedling. Each time I saw these exhibited I was much impressed with them, the bunches being medium-sized and compact, the berries fairly large, oval in shape, perfectly black, and richly flavoured. Evidently numerous other gardeners also formed an equally good opinion of Venn's Seedling, as large numbers of Vines were bought, planted, and in the course of two or three seasons cut out again owing to its soon being discovered that it was an old acquaintance under a new name. That the true old Muscat Hamburg can be grown to perfection in some few places there is no gainsaying, and if we can discover what conditions are most suited to

its requirements this will be a step in the right direction, as there are numerous gardeners who would be only too pleased to succeed with the variety. Mr. Goodlaere at Elvaston Castle, near Derby, has been the most consistently successful with this fickle Grape, and both in his and other instances where it has done well the soil is of a somewhat strong, retentive character. The latter alone will not ensure success, but it is an important factor in the matter. The variety is not easily grown too strongly, and I have never yet met with an instance of roots in a heated house failing to produce bunches very freely. It is very much the same whether the roots are inarched on the Black Hamburg or any other stocks or are on their own roots. During the first season or two there may be a slight improvement effected, the berries setting more regularly, colouring well, and shanking—but

little; but if there is no "back-bone" to the bonder, or, in other words, the soil is of a light, non-retentive character, a partial or complete failure soon results. A mistake very commonly made is the selection of what promise to be large bunches, but which only too frequently end in becoming mere frameworks. Instead of selecting the largest bunches that show, the wisest plan is to cut these off and save others considerably smaller. Better have a fairly heavy crop of bunches from 1½ lb. to 2 lb. in weight than a small number of great clusters badly furnished with fully-grown berries, and which are therefore an eyesore rather than a pleasure to the grower. Occasionally

EXTRA LARGE, WELL-SET BUNCHES may be met with, but, as a rule, the berries are nearer red than black in colour, while the majority of large clusters give signs of having had far too many small or stoneless berries cut out of them. The small bunches, besides setting and colouring the most surely, are the least liable to shanking—another had failing of the variety. There ought, then, to be no hesitation about either cutting away the large branching clusters, or reducing them considerably, this being done before the flowering period arrives. While they are in flower, a somewhat high night temperature, or, say, not lower than 45 degs., should be maintained, and towards midday artificial fertilisation ought to be resorted to. Supposing the Vines are in a house with Black Hamburg, Madresfield Court, Black Alicante, or other free-setting varieties, some of the pollen from these may well be transferred to the stigmas of the Muscat Hamburg flowers, this being done either with the soft palm of the hand, or, if the hand is too rough and hard for this to be done in safety, a rabbit's tail may be used instead. If the roots are kept active near the surface and overcropping is avoided, these medium-sized to small bunches will colour perfectly in an airy house and no shanking be noticeable. W.

5304.—**Pine-apples.**—Queens of the age named should fruit this summer. As regards repotting something depends upon their condition at the roots. A 3-inch is not a very large pot for a strong Pine, even of the Queen family, which can generally be grown in smaller pots than other varieties. But if they are to have a shift they should soon have it, as some of them will probably soon show fruit, or, at least, they could soon be made to show fruit now by lifting them out of the plunging-bed for a time, and cooling them down, giving all the extra heat afterwards; but under any circumstances 65 degs. at night need not be exceeded at present.—E. H.

5321.—**A Strawberry crop.**—It is simply impossible to answer this question satisfactorily. The yield obtainable from 2,000 plants depends not only upon the soil and season, but upon your experience and treatment as well, and the monetary return will be influenced immensely by the season, the kind of market you have, the system of packing, the distance, and, above all, the time you get the bulk of fruit into the market. President and Dr. Hugg are good kinds, but more of Sir A. Paxton than the former are grown for market, and Noble is just now prime favourite, on account of its earliness, size, and colour, which for market work counts far more than flavour. Further, in some soils certain varieties succeed best, on others, others. Your best plan will be to try half-a-dozen at least of the best kinds, and see which thrives best. If, however, you like to send an exact description of the kind of soil you have to deal with, I will tell you what varieties are most likely to do well.—B. C. B.

5330.—**Vine fruiting in pots.**—I should place the Vines that are planted in the outside border inside theinery toward the end of February, which would be early enough for them to start into growth. In the meantime the house can be utilised for growing plants in, the maximum temperature of 65 degs. being rather too high for Vines at this time of the year. In the meantime cover the roots from frost and excessive rains, first with some stable-litter or leaves, over this putting galvanised zinc or boards; anything that will ward off heavy snows will suffice. In pruning cut back the roots to three eyes above the caves; this allows for one pair of side shoots and a leader above

the canes, thus laying a foundation for the future fruiting of the Vines. All growths below the canes should be rubbed off as they start, thus concentrating the energy of the Vine into the three selected shoots. Pruning may be done at once, measuring the length of stem required to bring it the required length above the canes. No fruit should be allowed upon the canes this year. The pots in which the canes are that are intended for fruiting at once are quite large enough. A piece of turf 2 inches thick may be placed round the inside edge of the pot to provide space for a top-dressing of half loam and horse-manure, with a handful of finely-ground bones mixed. Prune the canes at once to within 5 feet of their base. Half-a-dozen bunches will be quite enough for the Vines to sustain the first year, allowing but one bunch to each shoot. The end of February will be soon enough to place the canes in the house, giving them a position near the front where the rods can be trained up the wires at the front. Pinch the point out of each shoot two joints above the bunch, removing all superfluous bunches early.—S. P.

CHRYSANTHEMUMS.

5306.—**Japanese Chrysanthemums, &c.**—No time should be lost in inserting about sneaker-like cuttings singly in 2½-inch pots in sandy soil, placing the pots under a hand-light on the stage of a coal-house. If the stage is of the ordinary batten type cover it with slates or tiles, laying on these half an inch or so of coal-ashes to exclude air, and provide a cool base for the pots to stand upon. Remove the lights for an hour or so every morning to dissipate condensed moisture from the glass and the inside of the lights, which is a means of preventing the cuttings from damping. Shift the plants into larger pots as required until those 9 inches in diameter are reached. In these the plants are to flower. At all times provide ample space for the plants, so that the growth will be stocky, and not in any way be drawn up weakly. Do not top the plants, but allow them to grow uninterruptedly until the first natural break is made by the formation of a flower-bud at the point of the leading shoot. Remove this bud, and reduce the shoots which will have formed about the bud to three, selecting the strongest, which are those nearest the apex as a rule. Pinch off all other growths so as to concentrate the whole energy of the plant into the three selected shoots. Place a stout stake to each plant, but some distance away from the stem, so as not to interfere with the roots no more than is absolutely necessary. To the stake secure the growths loosely. The bud showing at the point of each shoot, if not before the middle of August, will give the best blooms. With a view to strengthening the selected flower-bud and assisting in its progress all shoots that spring from the nodes below must be promptly removed as soon as they are large enough to handle. A fairly rich soil, pressed firmly into the pots, and abundance of water both at the roots and overhead are points in culture that must not be omitted. The following varieties can be depended on to give good blooms—Japanese Anemone; Queen Elizabeth (silvery-blush, rose centre, tipped yellow), Sir Walter Raleigh (guard florets pale-blush, disc deeper colour, tipped yellow). These two are quite new, but deserving a place in my collection. Duchess of Westminster (long drooping guard florets, silvery-blush, centre very full, rosy-bronze), Sœur Dorothea Souille (blush, white centre, guard rose colour), Phœnix de Médiane (deep-lilac, shaded purple and gold), Jeanne Marty (guard florets, rosy-peach, centre florets tipped white), Marguerit Villagenise (centre white, shaded rose, guard blush), Nelson (rosy-crimson), M. C. Lelecoqz (citron-yellow), Mons. Pankoucke (reddish-orange, bronze-tipped), N. C. Inkes (lovely rose colour, guard petals deeper shade), James Weston (candy yellow centre, guard florets, white), large-flowering Anemone; John Bunyan (candy-coloured guard florets, centre rich-yellow), Mrs. Judge Benedict (tipping light-blush, shading to pure-white, lemon-coloured centre), Sakine (sulphur-yellow, guard florets primrose-yellow disc), Miss Annie Lowe (bright-yellow), Lady Margaret (white), Gladys (pale yellow), a brassy-yellow, W. G. Drover (purple-carmine),

Delaware (guard florets white, centre pale-yellow), Georges Saml (bronze-red), J. Thorpe Junr. (rich-golden-yellow), Laing's Anemone (deep rosy-purple, guard florets lilac-rose disc), Mimi. Nathalie Brun (pure-white).—K. MOLYNEUX.

5318.—**Vigorous Chrysanthemums.**—W. H. Lincoln (yellow) is an excellent late-flowering variety when grown as a bush for decoration. Avalanche is not so good, except when the flower-buds are reduced to one on a shoot, and then it answers very well. To flower this variety profusely is to spoil its appearance, because the flower-stems of the side buds are too short to give a graceful appearance to the plant. It is, however, an excellent variety for cutting down. Mrs. F. Jameson is another that is amenable to the cutting-down method, but it is not so well adapted for decoration when flowering in a mass. Leon Fracho is one of the best late-flowering Japanese kinds we have if cultivated in the following manner: Top the plants when 5 inches high, afterwards allow all growths to develop buds at will, not interfering with them in any form. Alberic Linden is suitable for either cutting down or growing as a bush for decoration. Lily Bates is a free-flowering single variety, good, like all single-flowered sorts are, for culture as a bush. Boule d'Or makes a capital late-flowering bush, but is not so good for the cutting-down method. J. S. Dibbons may be utilized for the last-named method of culture. Virginal Moral is one of those free-growing and flowering Japanese sorts that under any method of culture is a success. Gloire du Rocher is free-flowering and better adapted for bush culture than for cutting down. K. Molyneux is suitable for either method. Mr. R. Braham is like the bulk of the Inverroel section, better suited for cutting down than it is for decorative use. President Harrison is free-flowering, therefore suitable for decoration. Miss M. Davidson I am not acquainted with.—K. M.

5245.—**Whits Chrysanthemum.**—Klaine is a very good variety in its season, espe-

cellent dwarf-growing sort, but not more than one bloom should be allowed to develop from a single shoot. As a late-flowering variety L. Channing cannot well be surpassed. Lady Selborne is quite equal to Klaine for flowering early in November. Mlle. Lacroix is a capital sort where stiffness of flower is objected to, as in the case of Klaine. Beauty of Kilmouth, as a free-flowering late sort, is not surpassed.—K. M.

—As far as I know there is nothing exactly similar to Klaine, and certainly none that are more free or better for cutting purposes. The nearest in form and colour is, I think, La Vierge, an early flowering variety of extremely dwarf habit. Mme. Louise Leroy is also somewhat similar, and a most useful variety, but rather later than Klaine, and Mlle. Lacroix is another capital kind for cutting, flowering about the same time. The new Mme. Thérèse Rey is said to be the finest White Chrysanthemum extant, but whether it will prove as generally useful as Klaine remains to be seen. As a late pure-white kind I consider Fair Mail of Guernsey still equal to any.—B. C. R.

—Klaine is very difficult to beat amongst White Chrysanthemums, and you cannot do better than select this. There are, however, a number of good ones. Avalanche is a splendid white, free, and useful to cut, also Rysford White, which is even finer, and a lovely kind for cutting is Jane, or Snowflake, a single variety, with large, free, graceful flowers, narrow florets somewhat twisted. It produces, when not too much stopped, sprays of bloom. Ethel is a good late white, also Fair Mail of Guernsey and Mlle. Lacroix; but in spite of many good novelties amongst white-flowered kinds, Klaine ranks one of the best.—C. T.

5319.—**Early and mid-season Chrysanthemums.**—The following varieties will be found suitable by "H. W." for the purpose named. Early flowering: Mme. C. Desgrange (white), G. Wernig (pale yellow), Mlle. Leonie Lassalle (white), La Vierge (white, cream centre), Lady Fitzwygram (white), M. W. Holmes (crimson, tipped gold). Mid-season: Avalanche (white), Virginal Moral (blush mauve), Mrs. F. Jameson (orange-bronze, reverse golden), Chante F. Lurani (rose, frosted white), Mlle. Lacroix (white; pinch the point from the shoot when 4 inches long, and again when 6 more inches of growth has been made), Charles Doria (bronze-yellow). Late varieties: W. H. Lincoln (yellow), Boule de Neige (pure white), L. Channing (white), Golden Gem (rich bronze-crimson, elongating to yellow), Princess Teck (blush white, changing to white), Mme. Mezzard (white).—K. MOLYNEUX.

ARCHES IN GARDENS.

The annexed illustration gives a good idea of the pretty effect of a stone archway in a garden when covered with climbing plants. Ivy, Virginian Creeper, Ruess, Honeysuckle, Clematis, &c., may all be used for this purpose with excellent results. Very effective garden arches over walks, &c., may be made with bent wood or iron rods (painted), and covered with Roses, Honeysuckle, &c. These arches are also highly ornamental and profitable when covered with fruit-trees, such as Apples, Pears, or Plums. A Vine-clad arch or archway in a garden forms a picturesque object and very agreeable shade in hot weather.



OUR READERS' ILLUSTRATIONS: Archway in the garden at "Glenwood," Leicester. Engraved for GARDENING ILLUSTRATED from a photograph sent by Mr. A. Newton, 19, Belvoir-street, Leicester.

cially for cutting, and it cannot be dispensed with. But there are better whites than Klaine now. Lady T. Lawrence, Stanthelm White, and Avalanche are better than Klaine if size and bulk of flower counts for anything; but the varieties named are later, and, therefore, would not compete with Klaine.—K. H.

—It is difficult indeed to name a variety more useful than Klaine, and as easily grown. Klaine White will produce more flowers and is more graceful individually. Avalanche is a

very good for top-dressing lawns. From 1 lb. to 2 lbs. per bushel of phosphates might be added, and the mixture may be used at the rate of 14 bushels to 2 bushels per square rod.—E. H.

—(2) Mulch the soil or pot-rows with well-decayed manure or leaf-mould, with a little soap and dust, and plenty of water, top-dressing. Supplies protect the rate of 1 lb. or 2 lb. per bushel is useful.—D. C. R.

FERNS.

A LACE FERN.
GLEICHENIA HICARIA.

Is reply to "R. H." and others, this is one of the most elegant of all the Gleichenias, and it may be grown successfully in a warm greenhouse. It has long, branching fronds of a deep-green colour. Good specimens of it sometimes measure from 2 feet to 4 feet in height, and about a yard in diameter. It is a Tasmanian species, and



Fronds of a Lace Fern (Gleichenia hiearia).

being a good grower, and one of the best of the section to which it belongs, it well deserves extended culture. It thrives well in a compost of good fibrous peat and coarse sand, stone grit, or well washed road or river sand. Drain the pots well.

5275.—Treatment of Ferns.—Only the fronds that are readily dead or past work ought to be cut off. Otherwise your method of procedure is not far wrong; but it is not well to water them too heavily at first, though if kept in a warm-house this will not matter much. You will also find that in the case of most varieties with clustered crowns, such as the Maiden-hairs, they will do better if divided into quite small pieces, placing them singly in small pots and shifting them on by degrees when established. The soil you name, with the addition of some sand, is right, and after potting they should be placed in a close warm-house or pit, and cleared overhead with the syringe almost daily, but water sparingly at the root until these begin to occupy the fresh soil.—B. C. R.

The herbaceous border in February.—Both during the autumn and early spring there is frequently so much to do that many worthy herbaceous plants do not get the attention at the proper time. So many of our herbaceous favourites are benefited by an annual or biennial division that a few notes may be of use. Unless the operation can be done early in the autumn, so that a few new roots are made before the soil gets cold and wet, it had far better be delayed until the latter part of February or March. I prefer the former time if the season has been fairly mild. Delphiniums, Michaelmas Daisies, Phloxes, Monarchs, Dianthus spectabilis, Dorotheas, Pyrethrums, &c., are all much benefited by division and replanting upon fresh soil that has been deeply moved and richly manured. These and many others are very hungry feeders, and cannot be provided with food in a better way than replanting. They also produce better flowers when so treated; but if the operation is delayed too late in spring, a dry time is much against them, and shows its effects more or less all through the summer.—P. U.

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TREES AND SHRUBS.

WILLOWS IN WINTER.

SOME of the fairest and most beautiful trees for adorning our gardens whose soil and situation favour their growth are the Willows; but, unfortunately, one rarely sees them. Perhaps they are not adapted for such general planting as many other trees and shrubs that exist in most gardens; but even then, if only planted where they would grow, how many places would gain in beauty, and what a lovely series of pictures would be the result! The meagre assortment of trees and shrubs that we commonly see in gardens, their monotonous repetition at all times and in all places and districts is one of the worst features of gardens at the present day. This is the result of the want of knowledge as to what to plant, for there is no lack of material. The Willow in its summer dress is one of the loveliest of British trees, and nothing in our land is fairer to see than the great White Willows of the riverside; but the Willows I wish to draw attention to here are those which, whilst pretty in summer, are infinitely more so in winter, for some of them have coloured bark, which is brightest in the depth of winter, and glows in the landscape, then producing an effect that simply astonishes all who see it for the first time. Winter is regarded as a

Dead, summer season in gardens, and so it is when they are filled with pure evergreens to the exclusion of all summer-leaving trees. But some things are most beautiful in winter, and this is certainly true of the Willows here mentioned. Among native or exotic trees and shrubs, excepting the Siberian Dogwood, there is nothing grown in our gardens that can be compared with them. The two very best are the Yellow and Cardinal Willows. The first one, botanically, is called Salix vitellina. It is much grown in nurseries, being very tough, and therefore valuable for tying. Its bark is entirely of a yellow colour, which in winter becomes very clear and bright, and a single tree or a group of trees has a charming and most conspicuous effect. It is surpassed in beauty, however, by the

Cardinal Willow. The popular name I give here is that by which the Surrey nurseryman about Woking call it, and some of them grow it largely for tying. I remember one day in January, several years ago, I was in the district of Woking, and saw a wonderful mass of colour in the distance. It was a hed of this Cardinal Willow, with a forest of young shoots, each one of a brilliant red colour, and the effect of the whole was simply indescribable. In these nurseries the stools are cut close every year, but since that time I have planted a fair quantity of this same Willow, and some are now trees 20 feet in height, the prettiest and by far the most interesting trees in the place throughout the winter months. The Cardinal Willow is supposed to be a variety of S. vitellina, and bears the varietal name Britzensis. Whilst these two are the most brilliant in colour, they are likewise the toughest and most useful in other respects. Their shoots can be tied into knots as tightly as string without breaking. All who have a moist corner, a ditch, stream, or lake, should plant these two Willows in quantity if space permits, and associate with them the Siberian Dogwood (Cornus sibirica). In a very short time they will see the absurdity of the practice that some pursue in excluding from the garden the summer-leaving trees. S. daphnoides is another pretty kind, and very different from the preceding ones. It has long, slender shoots with bark of a dark-violet colour or almost black, and over this a white mealy coating, the shoots looking as though covered with hoar frost. Yet another kind, the name of which I am not sure of, has this same white substance on the bark. It makes a large tree, with long, straight shoots, and its effect is novel and beautiful. S. laurifolia,

The Bay-leaved Willow, has rich nut-brown bark, and besides these there are many more that have been recently planted and look most promising. These Willows are a perfect revelation of beauty of a new kind. Everyone is charmed with their splendid effect, and those who see them for the first time are astonished.

5308.—A Privet-hedge.—If the plants were put in this autumn I should advise their being cut down to within 6 inches of the ground-line; but if the hedge has been planted a year the plants ought to be cut down to within 9 inches. By so doing strong, vigorous shoots will be forced from the lower part of the plants, establishing a thorough foundation for a good hedge. If the plants are left at their present length the hedge will always be thin at the bottom. Two or three times during the coming summer the hedge should be clipped to induce a stocky growth to be made.—S. P.

— If I wanted to plant a hedge, no matter for what purpose, the very last thing that I should think of would be the Privet. If the hedge is to be an ornament the Privet must be excluded, for it is one of the least ornamental shrubs that ever came into our gardens. If a strong barrier is required, then again the Privet is useless, for it offers no resistance to any marauder from the size of a cat upwards. To go into nurseries and see the great breaths of Privet and Laurel one would think there was nothing better for our gardens, whereas if we could get rid of these two things those who had planting to do would then have to look about more, and then, perhaps, by accident they would bring into use some of the numerous and pretty things that are beautiful as well as useful. Then, too, there would be more variety instead of the monotonous repetition of two or three things throughout a thousand gardens.—A. H.

— Cut the Privet down to within 1 foot or 15 inches of the ground to make the bottom strong and full.—E. H.

ALLSPICE-BUSHES (CALYCANTHUS).

THESE are American shrubs with handsome flowers of pleasant fragrance. C. occidentalis (here figured) grows from 6 feet to 8 feet high, with large murrain-erina-shaped flowers of powerful fragrance. A fine shrub, worthy of cultivation in every garden, it requires ample room to spread. It also does well on a wall. C.



Flowering shoot of Western Allspice (Calycanthus occidentalis).

Florida is smaller and not so dense, with purplish-red flowers, strongly scented. The names in catalogues, such as C. glaucus, levigatus, oblongifolius, and macrophyllus represent forms or varieties of either the eastern or the western species. The two described are hardy, the Carolina species having been grown since 1757, while the Californian has been cultivated over fifty years. Their place in the garden is near a moist and shady walk, not in the open shrubbery, as they flourish best when overshadowed by other trees and where the ground is damp. They grow well near streams and wet places.

SOME OF THE HARDIER PALMS.

CHAMÆROPS.

PALMS are so suggestive of the Tropics that it is generally believed they all require a tropical temperature, and in the case of the greater number this is undoubtedly correct. There are, however, considerable numbers of species whose hardier nature renders them capable of cultivation in an ordinary greenhouse. Nothing gives a plant-house a more striking appearance than Palms, and the ease with which they may be cultivated renders them doubly valuable. The kind here figured is perhaps one of the best known of the many Palms which we possess, though its fitness for greenhouse culture is not generally understood.

CHAMÆROPS HUMILIS is the only Palm that is truly European, the Date Palm (*Phoenix*), so extensively cultivated in Southern Europe, having been introduced from North Africa. Although the specific name of this plant implies dwarfness, it is known to reach a height of from 20 feet to 30 feet, a fact confirmed by the fine specimens of it at Kew and elsewhere. It has been cultivated in this country since the year 1731, when it was grown by Phillip Miller, in the Apothecaries' Garden, at Chelsea. It is one of the few plants which produce offsets from the

base, too, is of a more graceful character than that of that species, and is divided into about forty segments, which are again less deeply split than in *C. humilis*. This description will answer for another supposed species named

C. EXCELSA, which is also a native of China, and to all appearances identical with *C. Fortunei*. The plant sometimes met with under the name of *arborescens* is considered to be only a form of *C. humilis*, and *C. tomentosa* is an Indian species also resembling in its young state *C. humilis*. Other less common species which resemble one or other of the above are *C. Martiana* and *C. Ritchiana*, both Himalayan kinds; *C. elegans*, a very beautiful plant, the young leaves of which are covered with meal-like scales; and *C. hystrix*, the only true member of this genus found in America. It is a native of Georgia, and has a creeping trunk, and spines sometimes 15 inches long.

ORCHIDS.

ODONTOGLOSSUM.

I AM much obliged to "Mrs. Cochrane" for sending me an assortment of *Odontoglossum* flowers, and also I am delighted to find her succeeding so well with their cultivation. The

autumn, and now they are rooting and growing finely, the soil being composed of about equal parts of good fibrous peat and chopped Sphagnum Moss, the pots being well drained. These things, having been well done at the time, will carry the plants along for a twelvemonth, so as to avoid potting in the dry, hot weather.

MATR. BRAYBROOK.

AERIDES.

I AM requested by "G. P." to tell him a little more about the East Indian Orchids? This I am the more inclined to do because I find from his different letters to me that he has sufficient heat and general accommodation for their management. It is not advisable to restrict amateurs as to what they should grow, because they take such curious whims in their heads. I recently noticed one of these, who had taken *Phalaenopsis* under his wing for a pet; another at the present moment is writing, urging the claims of *Vanda*. Others, again, I have calling upon me for information respecting the cool-house kinds, whilst numbers are devoting their time and attention to Slipper Orchids or *Cypripediums*, all of which indicate most assuredly that the cultivation of Orchids is spreading throughout the length and breadth of the land. In answer to "G. P.'s" requests, I shall commence with noticing some of the most charming kinds in this beautiful family of Orchids. The genus *Aerides* was established by Loureiro upwards of a hundred years ago. They are widely distributed in India, but seldom exceed six or eight years' growth. They are best grown in pots having ample drainage, the only material requisite for surfacing being clean white Sphagnum Moss. They should be kept in a high temperature—that is to say, 80 degs. in the summer-time and 60 degs. in the winter. There should be an abundant supply of moisture in the atmosphere, and with an abundance of fresh air they must not be dry in the winter, but be kept moderately moist. When growing again, about the end of February, the plants will require to have new Moss applied, and to see that the drainage is sound, and good advantage should be taken at this time to cut back the stems at bottom of any plants that have lost their lower leaves. From this time forward more heat and water should be given. The following are a few of the best kinds:—

A. CRISPUM is a beautiful plant, with dull-violet or blackish-purple stems, stout leaves, arranged in a two-ranked fashion, each some 6 inches to 8 inches long, and 2 inches broad. The spike is racemose and many flowered, the blossoms are large and sweet-scented, each being upwards of 2 inches across, waxy-white in colour, tipped with rosy-purple.

A. CRASSIFOLIA is a plant with thickly-set, fleshy leaves, the flowers being rather smaller than the last named, all of a bright rosy-purple. It is a superb plant.

A. FALCATUM.—Pollage of this plant somewhat glaucous on the other side, paler beneath, and some 6 inches and 9 inches long; racemes longer than the leaves; flowers waxy-white, tipped with light-purple.

A. FLEMINGI (the Fox-brush *Aerides*).—This is a stout, robust-growing plant, with a blackish stem; it has flower-spikes, which are branched at the base, some 18 inches long; but I have seen them nearly 30 inches, many flowered; sepals and petals are white, tipped with purple, lips tipped with bright-purple; a superb plant.

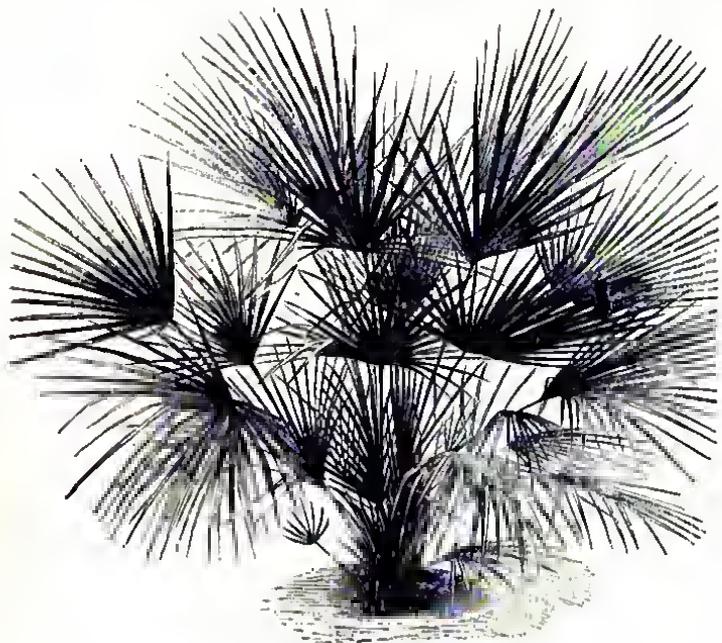
A. HOLLERIANI is a grand plant, the sepals and petals, as well as the lip, being of a light tawny yellow, tipped with bright-purple. It is called in French garden A. *picotianum*.

A. LAWRENCEANUM is a gigantic and superb form of *A. odoratum*, sepals and petals white, tipped with rich purple. This plant is still somewhat rare, but so beautiful withal it could not be omitted.

A. MACULOSUM.—A very pretty plant. The spikes are a foot or more long, much branched, the flowers are numerous, and of good size. They are white, spotted with rich-purple.

A. ODORATUM.—This is a species first found by Loureiro in Cochin China, and which is still amongst the hardiest of its kind; white flowers, deep-purple lips, which are very fragrant. Amateurs should select plants with the longest racemes of varieties of this species, as there are many forms.

A. QUINQUEVASEMUM.—A very fine species



Chamærops Fortunei.

base, by which it may be readily propagated. In the South of England it has stood out-of-doors for many years without any protection from frosts other than that afforded by a mat, and has a very distinct and graceful appearance growing amongst other outdoor vegetation. If in tubs it may be placed outside in summer, sinking the tubs below the ground level; in the winter a place in a cool greenhouse may be afforded it. Grown in this way it has a much richer and more graceful appearance than when permitted to stand outside all winter. In pots it also forms a beautiful plant. A light rich loam well drained is the kind of soil in which this plant delights, and for young plants a little leaf-mould may be added; manure-water given now and then will also be found of benefit to it, especially when large. The petioles of this species are clothed with sharp brown spines; the leaf-blade is fan-shaped, rigid in texture, and divided into from twenty to twenty-five deeply-split segments. This species is what is generally known as the Dwarf Fan Palm.

C. FORTUNEI, of which the unsexed is a representation, is a native of Northern China, from whence it was introduced into this country by Fortune in 1844. It is quite as hardy as the species just described, from which it may be distinguished by the absence of spines on the petioles, which are slightly serrate. The leaf-

flowers sent do not, however, represent a very fine type, and without wishing to discourage her, I can only say that there is scarcely a really good flower amongst them. Those she calls *O. Alexandrie* are not of the true species, but some natural hybrid forms of *O. Ruckertianum*, *O. Andersonianum*, and other crosses inferior to the type; indeed, they appear to me to be plants that have been selected by an unprincipled dealer, and sold after blossoming as unflowered specimens. This is frequently done, and I advise my readers who may be desirous of obtaining new forms to purchase them first-hand when imported. It may be said why am I so sharp on this matter? Because I am only exposing one of the tricks of the trade. "Mrs. C." seems delighted with her plants, and no doubt they are very acceptable ones, and will provide her with blossoms for a long time; but I think I may safely say that in the course of a year or two she will not look upon such flowers with any degree of favour. The cultivation of the plants appears to be correct, the temperature not being excessive, and the minimum point not too low. I quite agree with "Mrs. C." in keeping the plants in a house with a northern aspect, for this I maintain to be the one best suited for the growth of all cool Orchids. I find "Mrs. C." adopted my advice and repotted her plants in the early

ILLINOIS AT
URBANA-CHAMPAIGN

having bright-green leaves a foot long, and racemes exceeding that; the sepals and petals white, tipped with bright-purple, the lip having an incurved horn and a grand spur the same colour as the sepals and petals.

A. SAVIGIANUM.—A species introduced by Mr. Sander some four or five years ago. The flowers are individually somewhat small, are of a rich crimson-purple, white at the base, freckled with crimson-purple. A very choice variety.

A. SUAVISSIMUM.—This plant somewhat resembles *A. odoratum*; the racemes, however, are considerably longer and flowers more rightly set. The sepals and petals are white, each tipped with lilac; in some forms it bears branching spikes, and is then called *nobile*. A very fragrant plant.

A. VIRENS.—This is a more thickly-set plant than *A. odoratum*, to which it is closely allied. Racemes are longer than the leaves, bearing many flowers, having a white, waxy ground, rich-purple tip.

Many more species and varieties might be added, but the above dozen will be sufficient for "C. P." to make a start with; but he can have descriptions of more should he want them when he has established these. Some of the rarer kinds are purposely omitted.

MATT. BRAMBLE.

THE ELEPHANT'S TRUNK PHALANOPSIS (P. LOWI).

This *Phalanopsis* is certainly a very beautiful species, but yet it has not the purity or brilliancy of some others—for instance, such as *P. Aphrodite*, *P. granuliformis*, &c. It has, however, been one of the *Orchids* which I have always failed in managing, seven being the highest number of flowers I have got upon a scape; but I have seen fifteen blossoms on one spike, and when in this condition it is charming. It was generally in its deciduous state that I experienced the most difficulty, but it was from the error in making the resting season too long, and in keeping the temperature too high, that I think was the cause of my failure. Now I have ascertained that two months are quite long enough to keep them under the dry system. *P. Lowi* is a species that delights to be grown in pure limestone rock-raft, and upon this I would recommend it to be placed in preference, as they seldom thrive in any other material. When in first-rate order this plant is exceedingly beautiful with its white flowers, which are suffused with violet. It also has a strange rostrum, from which it takes its vernacular name. I would have given the names of a few others which would thrive well under the same treatment, but I must delay them until another time.

MATT. BRAMBLE.

THE KITCHEN GARDEN.

GOOD SAVOYS.

Savoys are most valuable late autumn and winter vegetables, and if given generous treatment—like other Cabbages—will repay for the trouble. The following are excellent kinds: The Dwarf Early Green-curl (Fig. 1) is one of the



Fig. 1.—Dwarf Early Green-curl Savoy.

best for a general crop, forming, as it does, close, compact heads. The Long-headed Savoy (Fig. 2) is an excellent moderately early variety, of good quality, and it yields a large crop on a small space of ground, as on account of its upright, compact habit of growth the rows of it can be planted rather close together. It also possesses the good property of heading in well in the latter end of the autumn, so that it can be sown to advantage rather late in the season. The Drumhead is a large-growing sort, of good

quality, suitable for large gardens. The Gohlen Globe is a good, useful, yellow-hearted kind, hardy in constitution. Early Dwarf Um is the best dwarf variety. Its flavour is good, and it is very hardy, standing even severe frosts well. Tom Thumb, a small variety, is also crisp and good, and very hardy.

5293. — **Parsnips for show.**—This vegetable requires a deeply-moist soil, so that the root can penetrate easily 2 feet deep. If the soil is not deeply dug and not well broken up, or mixed with large stones, the Parsnips, instead of having one long straight root, will have a number of smaller ones which spoils them for exhibition, of course. The ground ought to be trenched 2 feet deep in the autumn, which allows time for the soil to settle down into its place before the seed is sown early in February following. Before sowing the seed, however, the soil should be forked over a good depth, breaking up any rough parts. Instead of sowing the seed in drills in the ordinary manner, make holes with an iron bar 2 feet deep, filling up the hole with prepared compost, decayed vegetable refuse, wood-ashes, sand, and old potting compost, well mixed together and sifted. These holes, made 15 inches apart in the rows, the rows 18 inches wide, will allow plenty of space for the leaves to develop fully. Sow three or four seeds in each hole, covering them lightly with a little of the compost. When the plants are large enough to handle, pull all out but the strongest. Student and Hollow Crown are the best sorts to grow.—S. P.

5324. — **Fixing hot water pipes.**—I should advise you to fix one row of pipes close against the front of house—near the eaves—and the return along the path, say 2 feet from the flow. Plant one row of Tomatoes between the pipes, and two more at the back; this is all there is room for. Or you might fix the flow and return pipes one over the other close along the front, and the plants behind, with equally good results.—B. C. R.

— In a house only 5 feet wide, the proper place for the hot-water pipes is close to the front wall. Your first row of Tomatoes may then be 1 foot from the wall. Your proposed arrangements of the rows of plants do not, however, appear to me to be right, as the height of the house in front is only 2 feet 6 inches. You had better fix some wires to the roof 8 inches apart, and 1 foot from the glass, and have one row of plants along the front to be trained to wires. You will then be able to attend to the plants with comfort, and if you set out 1 foot apart, and train them to a single stem, the one row will fill up the space on the wires. You may, however, try a row of plants on the back wall. They will be all right for a good part of the season if you do not allow those on the wires to shade them too much. You may depend upon it, if you crowd the house with the number of plants proposed, that you will make a mistake.—J. C. C.

Gloxinias.—These are not so generally grown by amateurs as they deserve, more especially now that a good strain of seed will produce plants of infinitely better quality than those formerly secured in this way. The *Gloxinia* is one of the plants which the hybridiser has taken in hand with remarkable success, and as the seedlings are more healthy in growth and less liable to disease than any propagated in other ways, I would strongly advise one or two of my amateur friends to go shares in a small packet of some reliable strain. Leaf-soil and sand in equal proportions, and only a small layer of this over a well-drained and rough compost will answer very well. Sow thinly, and do not cover the seed. In a former note I gave directions for sowing seeds under glass, and they apply to *Gloxinias* equally with other subjects. Sow in February, and prick off into thumb-pots in May. Never let the seedlings be checked and grow as near to the glass as possible. A moist stove heat during the earlier stages, followed by that of a warm greenhouse later on, with plenty of light and water, will generally be successful in raising good plants. Good drainage, and a compost of turfy loam, leaf-soil, and sand, with a dash of sharp sand, should always be accorded them as soon as the seedlings

pots are full of roots. It is also much best to place them into their flowering-pots direct from the small ones, the leaves being easily injured and retaining any dirt which may come into contact with them. They have a more or less tendency to recurve over the sides of their pots, and this renders future shiftings difficult. *Gloxinias* enjoy a generous treatment, and will benefit from liquid-manure when the pots are full of roots, but care must be taken that it



Fig. 2.—Long-headed Savoy. (See Article "Good Savoys.")

does not touch the foliage, or their woody character will cause them to remain disfigured.—P. U.

OUTDOOR PLANTS.

5316. — **Plants for a bed.**—Judging from the reference to turf in the inquiry, I gather that this is growing on the site for the lairder, or has been. This should be dug in, but not too deeply; if more than 1 foot from the surface the roots will fail to reach it before it has decayed, and therefore would be lost. It is always a good plan to trench the soil 18 inches deep before planting herbaceous subjects. No time should be lost in doing this, to allow time for the soil to settle down into its place before planting is done early in March. With the exception of burying the turf as suggested, the surface-soil ought to be kept in the same position, leaving that from the bottom in the same place, but thoroughly breaking it up to admit of a free percolation of the water from heavy rains. If the plants are put in angle-wise four rows can be accommodated. The back row planted at 3 feet 6 inches from the front will admit of the others coming in very well. Allowing on an average of 3 feet from centre to centre of the plants in the back row, seventeen will be required. The following will be found suitable. I append the height which each grows, varying, of course, according to circumstances. *Helianthus communis*, *Soleil d'Or*, 5 feet, *H. multiflorus*, 7 feet, *Bocconia cordata*, 6 feet, *Chrysanthemum latifolium*, 4 feet, *Achillea millefolium roseum*, 3 feet, *Pyrethrum uliginosum*, 6 feet, *Delphinium*, one double and one single, 4 feet each. *Phlox herbaceous* type, at least two sorts, 4 feet, *Spiraea Aruncus*, 4 feet, *Spiraea venusta*, 4 feet, *Double Peony*, albiflora, *Mono. Vilmorin*, 3 feet, *Lychnis chalcidionica*, 3 feet, *Tritoma glaucescens*, 3 feet, *Aster Novæ-Angliæ* (deep-rod), 3 feet, *Novi-Belgi elegantissimus*, 3 feet. For the rows in front the following is a good selection: *Alyssum saxatile*, 1 foot, *Anemone fulgens*, 6 inches, *A. japonica alba*, 2 feet, *Aubrietia Campbelli*, 4 inches, *Burkholderia salicifolia*, 2 feet, *Campanula persicifolia alba*, 1 foot 6 inches, *C. p.*, 2 feet, *C. murris alba*, 1 inch, *Carnations*, *Dianthus chinensis hybridus*, 1 foot, *Erigeron aurantiacum*, 9 inches, *Lychnis viscaria splendens*, 1 foot, *Gaillardia grandiflora*, 1 foot, *Helenium autumnale*, 2 feet, *H. pumilum*, 1 foot, *Heuchera sanguinea*, 1 foot, *Iris pallida*, 2 feet, *Chrysanthemum maximum*, 1 foot, *Monarda purpurea*, 1 foot 6 inches, *Orolon vernus*, 1 foot, *Rumbeckia Newmani*, 1 foot, *Spiraea astilboides*, 2 feet, *Zauschneria californica*, 1 foot, *Trollius europæus*, 2 feet, and *Tiarella cordifolia*, 9 inches.—S. P.

— You should have the following: The best self-coloured *Carnations*, not forgetting the *Ch. King of the South*, and the white variety *Gloire de Nancy*, which will give plenty of bloom in June. *Ch. King of the South* and *Ch. King of the South* are plentiful in June.

such varieties in particular as Mrs. Sinkins, a large, fine white kind, very free, but too apt, unfortunately, to burst the calyx. For June and July also Lilies, *L. candidum*, followed by *L. auratum*, the Tiger Lilies, and varieties of *L. speciosum* in autumn. *L. speciosum album* is a very beautiful flower, and of purest white. Delphiniums for summer and the lilies will give a splendid lot of cut bloom, the German kinds in particular. Queen of May (rose-lilac, the falls veined with yellow), Anrea (golden-yellow), Celeste (lavender), Florentino (nearly white, free, and sweetly-scented), Gazello (lavender, with the standards marked with white), More. Cheran (white, the standards and falls edged with violet), Ialmatica (lurmer), Rigidetto (golden-yellow), and Victoria (white, with blotches of purple-blue). These are the finest for colour. You could also have a few Spanish and English Irises, bulbous kinds, which have very fine flowers, displaying considerable range of colours. The Tuffed Pansies in variety will prove helpful, and an edging might be formed of them to the bed. There are many varieties, the flowers ranging from purest white to almost black. Pyrethrums for early summer, particularly the single and double whites. Scabious, Blue Carnation, Stocks, Zinnias, very fine in the autumn, Daffodils for the spring, the White Pines Narcissus, and double variety blooming in May; Campanulas, *C. persicifolia* alba, Canterbury Bells; Chrysanthemums in September, especially Maud. Desgrange and its sports; Dahlias in variety, Perennial Sunflowers for autumn, Michelons Daisies for the same season, Gaillardias, Everlasting Flowers, Christmas Roses for winter, besides other things; but you have quite sufficient for the bed, and they will give plenty of bloom from early summer until the frosts occur.—C. T.

534. —**Making a flower garden.**—It appears to me that you are going to a lot of unnecessary expense in trenching up the ground in the way stated, except where there are to be flower-beds or shrubberies. You would have done better if you had sought the advice of a landscape gardener and got him to have given you a plan of the ground to lay out in the way you would like it best. You would then have seen at a glance where to trench and where not, as the space that is to be devoted to lawns certainly does not want trenching. Nor is it necessary to wait until next autumn before you begin forming the flower garden. If you decide to do the work without any further help than your present advisers, mark out the walks in the first place; then do the same with the borders for shrubs and trees, and decide on the number and size of the beds for flowers. For the two latter you may trench the ground, but except to bury the turf I fear that you must not bring the bottom soil to the top, but after stirring it up leave it in the bottom of the trench. With regard to the walks, the top soil, after the turf is removed, may be used to the depth of 6 inches for other purposes. Do not be persuaded to trench up the remaining space. Take off the turf to the depth of 3 inches, and convert it into ashes by making a slow fire; then dig over the ground an ordinary spit deep at once. Early in March fork over the space again, and then spread on the surface the ashes from the turf. Another light forking over to mix the ashes with the soil early in April, and a roller run over the ground a few days after when the surface is dry, and you will have a capital bed for the reception of Grass-seeds to form your lawn, and at the same time keep all your good soil near the surface to benefit the Grass, whereas in ordinary trenching you bury the good earth and bring the inferior to the surface.—J. C. C.

—It is rather difficult to see what can be gained by sowing the land with Oats and Grass if it is truly infested with weeds, for these crops will neither charm the weeds away nor destroy them. The right thing to do is to clean the land, and as mowing the crops will prevent this the proposed plan would hinder operations. I should take advantage of spring and summer to clean the ground thoroughly. The weeds may then be materially reduced, and all the worst of them got rid of by early autumn. The ground would also be in good order for the carrying out of the permanent plan. The luras could be made in the autumn. If the Grass is to be sown, this should be done about the last week in August or the first week in September, and then the

young Grass will make a little growth before winter, and soon make a good turf the following spring. If all the land has been treed up, that to form the lawns should be well rolled and trodden previous to sowing, or there will be unequal settlement, and a lawn not at all fit for tennis. The flowers-beds, and borders, too, could all be prepared during summer, and they, too, would then be ready for planting in autumn. I think I have said enough to make it clear to "A. C. J." that by taking a crop he is only hindering operations and depriving himself of the opportunity of doing the work thoroughly at the most favourable time and in the best way.—A. H.

THE ASIATIC RANUNCULUS (R. ASIATICUS).

This beautiful old plant produces neat, dressy double flowers of almost every colour of the rainbow. Its innumerable varieties are divided into sections, such as the Dutch, Scotch, Persian, and Turkish, each representing a distinct race, but all beautiful, and well deserving any amount of care and attention, for they look well anywhere or in any position, but are best where they can be seen in bold masses. The culture of this Ranunculus, though usually considered somewhat difficult, is simple enough if a few essential particulars are observed. The situation should be open, but not exposed, and the soil a good loam, thoroughly mixed with



Asiatic Ranunculus.

decayed stable manure, equal to a third of its bulk. About a month previous to planting, the bed should be prepared to a depth of 15 inches, and planting should take place in about the last half of February, but in some seasons it may take place in October, though such an early date is not advisable. Drills about 6 inches apart and 1 1/2 inches deep should be made with a small hoe; the claws of the roots should be placed downwards, and be firmly pressed into the soil, which should be raked over the roots, and a top-dressing of about 2 inches of good loam given. If the soil is very light it may be gently luted down with a spade in order to obtain a firm surface, and this may be repeated just before the foliage appears, say about a month or six weeks after planting. As this Ranunculus delights in moist soil, water should be plentifully supplied if there is a scarcity of rain, and in no case should the roots be allowed to become very dry. A light top-dressing of artificial manure or guano just as the foliage is developed will be beneficial. When the flowers are past and the leaves have faded away, the roots must be taken up and dried and stored in a cool place in sand till the next planting season, for roots left in the ground are often injured by rains and are never strong. The Persian varieties are the finest as regards colour, compactness, and symmetry of growth; but the Turkish varieties are of hardier constitution and of freer growth than the edged and spotted kinds, and therefore are better suited for beds, lawns, and masses. The Scotch and Dutch

varieties are also fine for masses in beds being all of highly effective colours. It is useless to enumerate the different varieties, as they are usually sold according to colour and are mentioned in nearly every bulb catalogue. The large semi-double French (de Caen), and the Italian forms of this plant are good additions. G.

TUBEROUS BEGONIAS IN DISTINCT BEDS.

EACH year the Tuberosus Begonia advances in favour, and it is a common practice to have distinct beds of the plants one colour, or shades of one colour, to each bed. This is commendable, as new effect is gained. Of course, one does not require too many beds of this character, otherwise the aspect of the garden will be garish and uninteresting. I noticed last year in the London parks, and also some of the parks in the North of England, that the Tuberosus Begonia was planted in this way, in one instance the bed being composed of a pure white variety, set off by an edging of *Dactylis glomerata variegata*, a very charming, because graceful, plant to associate with the Begonia. This plan is rendered easier now that seed of Tuberosus Begonias in selected colours can be raised true to those colours. During the past few years the Tuberosus Begonia has undergone a great change, and its usefulness for bedding-out increases each year. The plant is now of dwarf, compact habit, the leaves almost resting on the soil, sturdy, and without the scraggy aspect of the older types, whilst in the form and colour of the flowers we can see the same advance, the flowers being broad and very pale in the case of the double kinds, the colours ranging from purest white to intense shades of orange. The Tuberosus Begonia is finer for bedding than the fibrous-rooted types, but we may mention that Princess Beatrice is a gem for edging, the small pink and white flowers appearing in profusion and almost hiding the leafage from view. This is the season for raising Tuberosus Begonias from seed, and in all gardens where effective colouring is desired in the summer months good use should be made of this flower. (Get a good strain of seed, in which the colours are decided, the form and size of the flowers all that can be desired, also the habit of the plant. They succeed better in cool, moist seasons than when the weather remains hot for weeks, as in the year 1887, but it is not often that they fail absolutely, which is more than can be said for the Zonal Pelargonium. A moderately light soil, inclined to be peaty, is the best, and during the summer give the beds liberal waterings if the soil is dry. At Haddon, Lord Rothschild's residence, the Tuberosus Begonia is used by the thousands, and produces rich pictures of strong colour, not so garish and formal as in the case of the Pelargonium or carpet plants. G.)

Callas.—Whilst there seem to be differences of opinion as to whether it is wisest to plant out Callas in the spring for the making of good summer growth, or to retain the plants in pots, I find very many growers adopt the plan of keeping all their stoutest ones in pots, only turning them out at the proper season, removing side shoots, rubbing down the balls of soil, and repotting in as small ones as well can be at the first, keeping them in the pots all the summer, and pushing them along by housing early for the production of early flowers. In many cases a further shift into rather larger pots becomes needful during the summer. The market growers regard this as the best course where Callas have to be forced. That the weaker or smaller stems or offshoots when planted out into highly manured ground do relatively make the strongest growth there can be no doubt, but as these, even if the stems and leafage have become ever so stout, still being newly potted in the autumn are less fitted to stand early forcing than are those which have been kept in the pots all the season. It is very important, however, especially seeing that Callas are of a semi-aquatic nature, that very ample waterings be given, especially to pot plants, and also that the pots stand on a bed of ashes or Cocoa-nut-fibre refuse. Liquid-manures are of more service to pot plants where the roots are densely packed than to plants outdoors, where because of ample manure and root room the chief want is not water but plenty of moisture.—A.

LILIUM AURATUM.

There is nothing in the way of bulbs with which I have had to deal which has disappointed me more than Liliun auratum. I grew it first in pots, and on the whole this system has given the greatest satisfaction, as the bulbs have lived longer than when planted in the open. I think they would have lasted still longer if I had used greater care in preventing bright sun from reaching the foliage when it was quite young. The leaves may perhaps bear the full force of the sun when they are growing in the open air, but it is very different when it reaches them through the glass, and they are at the same time surrounded with a hot and dry atmosphere. It has been after passing through such an ordeal that I have found the leaves more or less scorched, and ultimately turn black. This last condition would make them susceptible to attacks of insects or fungoid growth, to which some people fancy they can trace the cause of failure; but I think the presence of insects or fungoid growth on the injured leaves is the effect and not the cause. The longest time I have kept a bulb of this Lily in a satisfactory condition was six years. This was one that was very promising the first year. It sent up a strong stem, which was well studded with leaves and showed seven flower-buds. These I reduced to one as soon as the buds could be seen. The reduction of the number of flowers had a greater effect on the diameter of the growth than I anticipated, as this plant was conspicuous amongst the others for its stately stem and large and handsome leaves; but, strange to say, the one flower left came deformed. The next and three following years the bulb so treated was in every way far more satisfactory than the others. It is about eleven years since I planted the first lot of bulbs in a bed amongst Rhododendrons, but they all disappeared in about four years, and the same thing occurred with others planted in a well-prepared soil in a mixed flower border. Five years ago, when I made a new garden, I started growing this Lily again in the open air, this time with English-grown bulbs, which came to hand apparently full of life and vigour. They, too, have disappeared, and that in a garden where everything else thrives in the most satisfactory manner. I certainly hope for better things when I grow bulbs in a maiden soil.

J.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of GARDENING, 37, Southwark-street, Covent-garden, London. Letters on business should be sent to the Publishers. The name and address of the writer not required in addition to any designation he may desire to be used in the paper. Where more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, rules, and menus vary so infinitely that several answers in the same question may often be very useful, and those who reply should do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appeared.

- 5341.—Wireworms.—Will someone kindly tell me what are wireworms?—ALFIA.
5342.—Gloxinias from seed.—Will someone kindly inform me how to raise Gloxinias from seed?—S. D.
5343.—Heaths after flowering.—I should be glad to know how to treat heaths that have done flowering?—J. H.
5344.—Preserving Green Peas.—Will someone kindly give a good recipe for preserving Green Peas for winter use?—ELMACARON.
5345.—Striking cuttings of Golden Elder.—What is the best time to strike cuttings of Golden Elder in the open ground?—BALMACRIBOX.
5346.—Treatment of Chinese Primulas.—Will someone kindly inform me as to treatment of Chinese Primulas, and the best time for sowing the seed?—J. H.
5347.—Early Lily of the Valley.—Will someone kindly tell me how I can best get Lily of the Valley to flower early? I have a frame, but no hot-house.—T. HANCOCK.
5348.—Lucilla gretselma.—Will someone kindly inform me the best means for striking cuttings of Lucilla gretselma? I have tried to do so, but they have all failed.—J. M.

- 5349.—Best Lilacs.—Will someone kindly tell me the names of some of the best Lilacs (white preferred) for outdoor cultivation, the times to plant, and the months they bloom in?—W. R. L.
5350.—Making a Tomato-house.—I have some garden frames which I want to make into a lean-to house for Tomatoes. 1. What height must it be? 2. What width from the wall?—H. B.
5351.—Ashes for the garden.—I have a receipted order for 1000 lbs. to receive the dust or ash left from the fire. Can I use them to advantage for the garden, and if so, how?—JIMIE PARKER.
5352.—Using Pigeon-manure.—I have some Pigeon-manure. Will someone kindly tell me how I can use it to the best advantage? Can I use it for vegetables, and if so what kinds?—H. H.
5353.—Aspidistras in pots.—I have some Aspidistras in pots, which are crammed full of roots. The new leaves are a smaller size than last year's. Is it that they have not enough room to grow?—H. S.
5354.—Tomatoes under glass.—Will someone kindly tell me the name of the best Tomato for growing under glass for market? Also the name of any book on Tomato-growing for the market?—S. H.
5355.—Salt for an Asparagus-bed.—Will someone kindly inform me what quantity of salt is required per yard for an Asparagus-bed, and which is the best time to apply it?—F. HENRY, Surrey.
5356.—China Asters, &c., from seed.—Will someone kindly tell me if China Asters and African and French Marigolds can be raised from seed in a cold frame to make good results, and when to sow?—HARRO of TORKIN.
5357.—Ferns for a bank.—Will someone kindly tell me what Ferns would best grow on a bank at the bottom of the garden? Some of our neighbours' trees are overhanging it, but it gets the sun in the afternoon.—J. M. R.
5358.—Flowers for Christmas.—What flowers are there I could have in blossom next Christmas (with preference), either in the open or under glass? A few brief hints as to mode of cultivation would much oblige.—J. F. H.
5359.—Tomatoes in boxes.—What would be the best size to have boxes for Tomatoes under glass? Please give depth, width, and length? Would it be best to have one plant only in each box, or boxes large enough to hold several?—J. F. P.
5360.—Plants for a greenhouse.—I should be much obliged if anyone would give me some advice as to how to fill a greenhouse (also 15 feet by 7 feet) with plants that would not require much skill to manage?—AN AMERICAN, Staffordshire.
5361.—White Cluster Rose.—What is the name of the White Cluster Rose so often seen in the country, both as a climber up the front of cottages, and as a standard, with small, pointed, dark green, very glossy leaves, and a sweet almost scent?—M. H. W.
5362.—Drooping plants.—What are the names of two or three good drooping Fuchsias and trailing Begonias for hanging-baskets? Also any other plants that will hang down and cover a basket (not Campanula or Mother of Thousands)?—M. H. W.
5363.—Rooting cuttings of fruit-trees.—Will "J. C. C." or "J. H. E." kindly give me a few hints on this, especially Cherries, including Governor Wood, Baronne Preost, Anjou, May Drake, King's Black, also Apple and Pear-cuttings?—SEASIDE, ENGLAND.
5364.—Tomatoes in a greenhouse.—If I sow Tomatoes at end of the month, would it be possible to keep my "Geraniums" and other half-hardy annuals in the same greenhouse until bedding-out time? If so, which would be the best way to manage?—J. F. P.
5365.—Yield of Tomatoes.—What is the average yield of perfection and Ham Green Favourite Tomatoes under good cultivation in a greenhouse? When would plants (sown end of January) commence fruiting, and how long would they continue fruiting?—J. F. P.
5366.—Manures for Cinerarias and Calceolarias.—Would someone give me the names of good manures for Cinerarias and Herbaceous Calceolarias? Perhaps "H. C. E." would kindly help me in this matter, as I have some fair plants and should like them to flower well.—I. T.
5367.—Length of a Tomato plant.—What is the average length of a Tomato-plant (perfection and Ham Green Favourite) in a greenhouse (6 feet high open-roof), would it be best to grow them in pots or boxes raised 6 inches off the floor, or on shelves like "Geraniums," &c., and?—J. F. P.
5368.—Wire-netting for Peas, &c.—Will an experienced cultivator of Peas who uses wire-netting kindly give myself and other readers an account of his work? Does he find any trouble with (a) Garden Peas or (b) Sweet Peas? Is a double row preferable to a single one?—A. D. M.
5369.—Tea Rose cuttings.—Last October I had a few Tea Rose plants and cut up a few broken shoots and stuck them in round the edge of a large pot. Some of them have rooted and are growing. Should I leave them where they are, or pot them off into small pots of good soil now?—RINDOBS.
5370.—Corrugated iron for stages.—In a recent issue of GARDENING corrugated iron was recommended as covering or shading over hot-water pipes to be coated with hot lime-wash. Should both sides of the iron be covered, or only the one next the pipes, and should the time be freshly glazed?—ENQUIRE.
5371.—Clematites.—Will "P. H." kindly tell me if any of the Clematites mentioned in GARDENING, January 13, have only four petals, as I do not wish to get any crested varieties? Can I raise them from seed, and where can I get it with the various orders kept separate?—C. J. H., Market Harborough.
5372.—Ferns for a case.—I have a glass-case and wish to know what would be the most suitable Ferns for it? It is in a room in which a fire is burnt daily in a gas-lamp house. I have a upper frame, movable for the sun, and a lower frame for the sun, and should give other hints would oblige.—A. D. C., GARDENING.

- 5373.—Moss on a tennis-lawn.—Will some practical person kindly tell me how to get rid of Moss on a tennis-lawn? It has been raked off and leaf-mould has been spread over it and seed sown, but the following year it is not had as ever. The soil is very sandy and light, so that limo makes it very hot.—S. S.
5374.—Cutting back Rhododendrons.—Will someone kindly tell me the proper time to cut back Rhododendrons? I have some 7 feet and 8 feet high, and I want to cut them down to within about 3 feet of the ground. If I cut them down next month will they shoot again the same as the common Laurel?—T. LLOYD.
5375.—Raising plants from seed.—Will the following plants raised from seeds I sown now come to perfection this summer, or, if not, when should they have been sown?—Phlox Trimmoulli, Scabiosa, Grains, Mikalo Poppy, Sunflower, Antirrhinum, Clarkia, Coreopsis, Eschscholtzia, and Verbena?—M. G. W.
5376.—Climbing flowering plants.—I should be extremely obliged to "J. C. C." or "H. C. E." if they would tell me what kinds of climbing flowering plants would grow in a hopper back wall, and that gets no sun till noon? I want them to grow up my house window, and plants that do not die down every year.—G. H.
5377.—Tuberous-rooted Begonias.—I have some bulbs of these Begonias, and would like very much to increase them by division in the roots. Can I cut the tubers in two like Potatoes, and let it be done before or after starting them? Also, will it weaken the flowering in any way, as I want to have some good flowers?—KENT.
5378.—Datura cornucopia.—Will anyone kindly tell me if the new American plant Datura cornucopia is a delicate one, and requires heat during the winter? I have had some plants which flowered well this summer, and they were housed in the end of September, but killed off in November, and are seemingly dead to the roots.—VERA.
5379.—Heating a vinery, &c.—Would someone kindly inform me—1. When would be the best time to heat a vinery by propagating-houses by means of a boiler and hot-water pipes or by flues? 2. If there are, say, three houses to be heated, I presume it is more economical to have them all heated by one fire, if possible. Locality Isle of Man?—STRELLAMA.
5380.—Rhododendron dropping their buds.—Will someone kindly tell me the cause of sweet-scented Rhododendrons dropping their buds? I have five plants rather large and one small one. The large plants have lost the majority of buds, while the small one is all right, the buds swelling nicely. The buds go black and rotten inside while the outside appears to be all right.—G. T.
5381.—Flower farm in the Riviera.—Which part of the Italian Riviera between Ventimiglia and Leghorn is most suited for a flower farm? Does it require a large sum of money to begin with, and about how much? Which would be the best market for the sale of the produce? Could a practical man to undertake the heavy work be obtained by advertising in GARDENING?—G. M.
5382.—Heating a sitting-room.—I am desirous of obtaining a heating apparatus suitable for a sitting-room 13 feet square, 11 feet high, in order to protect my plants, which are in the bay window, from frost. Will some kind reader say a good apparatus, either oil, or coal, or coke? Someone's experience on this matter would be most welcome. Many of your readers, it is I am sure, much needed just now.—A. SANDERS.
5383.—Good blue annuals, &c.—Will someone kindly give me the names of some good blue annuals, which will bloom well during the summer? I wish to fill in a border at the back of which there are dwarf Roses, so require some flower in front which will not grow too high. I thought of a carpet of white Nasturtiums with some taller blue flower, but any suggestions would be gratefully received. Also if the White Nasturtium is as good a bloomer as the ordinary red? The border is about 34 feet wide in front of the Roses.—FAV. FAY.
5384.—Pruning Vines.—I have in my vinery some old Black Hamburghs growing for a number of years, and pruned on the spur system. These spurs are nearly 1 foot in length (from the main rod) from cutting them back every year to 1 inch or 2 inches. I have been told by a friend of mine to cut these old spurs all away clean into the leader, and that they will break out again and bear on the young shoots this year. I would be much obliged to any person that would kindly let me know if this would be a good course to pursue?—KENT.
5385.—Treatment of Carnations.—I have about 150 last year's layers of Carnations, chiefly Malmaisons, in small pots, now in a cold frame. When should they be repotted, into what sized pots, and also best compost for same? I have some "market" pots 4 inches. Are these large enough? After repotting I purpose standing them in an unheated span-roofed Rose-house. Will this be the best? Last year my plants did very badly. Many of the buds failed to open, others were very small. I thought this was caused by harbing them in pots too large for them—6 inches. Shall be glad of any information re above, and any hints for after treatment will be welcome? I am much obliged to "J. C. C." and "P. H." for their instructions re Roses.—H. S. H. C., Birmingham.
5386.—Window-houses.—I wish to have boxes made to fit on to five windows, with stone ledges, in front of my house at Aylesbeech. The situation is north-east. What is the best material to use, and what should be done to ensure proper drainage without danger of drought? What breadth and depth should they be, and what ought to be the soil, allowing about 12 inches for each box? With what sort of soil should they be filled, and what would be the best kinds of plants to purchase to obtain a constant supply of bloom from spring till late autumn? What kinds of creepers would look well either in climb up the sides of windows or hang them from the front of boxes? And should separate boxes be made to fit on front and side of two windows, or would a continuous box be better?—H. OSBORNE.
5387.—Plants in Rhododendron beds.—I am much obliged to "J. C. C." and others for their kind replies to the above query of mine (see GARDENING, December 23rd, page 64). I should be further obliged to any of your kind readers who could give me any hints what would make a good compost for the peat beds to grow

with the filices. World Lobelia, Golden Feather, Pansies, Crassulium tomentosum, or any of these hardy low-growing plants do in the west? I want to furnish up the beds as they look so bare. The beds are 10 feet by 10 feet and 2 feet deep, a Rhododendron 1 foot high planted in the centre of each in a good open aspect. I would also like to know if the *Gladolium linelecheyensis* will grow in the peat as well as garlybanes mentioned by "J. C. C." A definite answer will be highly esteemed by—K.R.T.

5388.—Name of a bulb.—I shall feel greatly obliged if anyone will kindly tell me what is likely to be the name of the bulb which I must have received by mistake with some others from England a few years ago. When grown it had long narrow leaves somewhat like a Narcissus. The flowers were pendulous, like yellow stars, and reflected when open, the outside and buds a deep orange, almost red, the flowers about the size of a shilling, and there were black spots somewhere, but I cannot remember whether on flowers or leaves. It was raised in a slightly heated frame and flowered in June. The nearest approach I can find to it in any catalogue is *Tritonia aurea*, but this is given as *Crocus aurea*, which is said to be the same as *Montbretia crocosmeiflora*, which I have grown, but it is not the kind of plant I had before.—M. B., Helsenburgh.

5389.—Growing *Dianthus*.—Will anyone be good enough to tell me the best way to grow *Dianthus*? I am most anxious to grow my grand, but they seem most difficult and tiresome to grow. The year before last I sowed them in a shady border in August or September, but nearly all of them died away. The few that were left bloomed very well. I took seeds from them, which have not come up. Then I got some seeds from one of the best seedmen in England, and sowed them in a box, putting them in a sunny gallery in the house, as I have no heated greenhouse. They came up, but now they seem to grow very long and thin, and then die off. Who can I do? Shall I put them in little pots? They are 2 inches high, and 4 inches long. If I sow some out-of-doors in March or April, will they flower this year, or could I get plants of *Dianthus*?—C. M.

5390.—Evergreen hedges.—Two or three weeks ago there was an interesting paper in *GARDENING* on "Evergreen hedges for shelter," either by "J. C. C." or "J. Groom, Gosport," both of whose articles I always read with great interest. I should be grateful for instruction on one point—viz., when to plant laurels (common and Portugal), *Cypripedium Lawsoniana*, and *Hollies*? Should the latter especially be planted in April or May, and not in autumn? I have a large kitchen garden, sloping south, east and west, and much about the year, with the south-west winds which prevail on this coast (near Westmouth). It is surrounded by a high Thorn hedge, getting thin at the bottom, and I want to plant evergreens inside to thicken it without cutting down the Thorn hedge. How near may they be planted? *Hollies* are hardy here, but very slow growing, as it is apt to be very dry in summer.—M. T. S.

5391.—Construction of a propagator.—I am about to make a propagator, heated with a paraffin lamp, and build pretty much as follows. Body boxed in close and made of l-inch match-boarding. Tin pan for water, 2 inches deep, over which is a plate of corrugated galvanised iron, punched full of holes. Cocoa-nut fibre refuse on top. Pots of cuttings, &c., in this, and a glazed and hinged lid lined with the top of boxing and sloped flesh facing. A small sliding door at one end to put the lamp in and out. What height should the tin pan be off the top of the lamp chimney? Should there be a tin chimney constructed to carry the draught up by the end of the propagator opposite to that at which I introduce the lamp, or will there be enough draught by letting the heat (and presumably the fumes too), ascend up between the sides of the box and the edges of the tin pan, and so through the perforations and into the Cocoa-nut-fibre? I want to start seeds, cuttings, &c., for spring.—T. H. BROWNROO.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

5392.—Standard's Manure.—Mrs. Watson should look into the advertising columns, where she will find all she requires to know.—J. J.

5393.—*Cypripedium insigne* (Governey Correspondent).—Pot in about equal parts of peat and loam and chopped sphagnum, adding a little sand.—M. B.

5394.—*Ansellia africana* (T. J.).—The flower sent under this name appears to me to come near to the plant known now as *Ansellia confusa*, which is of a lighter yellow, smaller flowers, and is not nearly so brittle as the typical plant.—M. B.

5395.—*Pholidota imbricata* (T. J.).—This is a plant I used to grow with the greatest ease potted in Sphagnum Moss, mixed with a little peat, and given a large amount of heat. I do not, however, think it is worth the trouble.—M. B.

5396.—*Cymbidium Lowianum* Mandianum (C. J.).—This is a rare plant and should be well taken care of. The flowers are of a buff-yellow, with the lip a tawny yellow. It requires the same treatment as the typical plant. There is much controversy about the beauty of this Orchid.—M. B.

5397.—Orchids in a drawing-room (Mrs. W.).—I do not think you will succeed in growing any of the six Orchids mentioned in the drawing-room, neither do I think you would find much better success with them in a cool greenhouse, but you might manage *Cypripedium insigne*.—M. B.

5398.—*Moorea irrorata*.—J. B. asks for information respecting this plant; but the truth to tell, no one knows very little about it, if having been imported a few years since from Peru. The flowers are produced upon an upright spike and are reddish-brown in colour, with a pale centre, and it is named in honour of Mr. Moore of Dublin.—M. B.

5399.—Plant questions (T. Eastlake).—I really cannot comply with your requests, for your questions would make a perfect dictionary. While quite willing to give all my readers every information they require, at the same time they should certainly remember a good old

saying that Providence helps those who help them selves.—J. J.

5400.—Orchids in plant-house (K. T. Clark).—I quibble with you (that *Odontoglossum Rossi* majalis by no means a warm-house plant or a difficult one to manage) but all are not of such an accommodating disposition, and you must get someone to answer your numerous queries who has had practice with a gas-stove, and knows more about its effect on Orchids than myself.—M. B.

5401.—*Coclogyne cristata* (C. J. P. F.).—Your plant appears to have made a good lot of new limbs. They are all, however, of a small size, and you cannot expect any flower-spikes from them. The fact of keeping to the *Odontoglossum* should not lead you to expect flowers yet, and being so treated I do not think it could have flowered so early as Christmas in any season.—M. B.

5402.—*Cymbidium sinensis* (A. W. S.).—You, like the rest of amateurs, appear to be much troubled about repotting. This plant requires rather a large pot for its size as the roots are thick and fleshy. The soil should be two parts good turfy loam and one part peat, well mixed. The plant may be potted now as soon as it has done flowering. The temperature will do.—M. B.

5403.—*Cypripedium Leeanum superbum* (A. Grant).—A grand flower of this hybrid and prolific species the name of *superbum*. It is very bright and showy kind. It was first raised by Messrs. Vetch and Sun, and which time many others have obtained seedlings of a greater or lesser degree of excellence, yours being a very fine one, but still it must retain its original name.—M. B.

5404.—*Maxillaria tenuifolia*.—H. H. sends flowers of this species, asking if it is a new plant, saying he had never seen it before? This Orchid was sent home here nearly sixty years ago, and has been largely cultivated; therefore, I think "H. H." must be a young beginner in Orchid-growing, or he certainly would have seen it before now. I should advise "H. H." to grow the plants which he has sent in large pots, and to give them bright richly-coloured flowers produced in abundance.—M. B.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we do not answer queries taken from letters to correspondents, or insert queries that do not contain the name and address of sender.

C. J. B. Market Harbor.—Apply to Messrs. Richard Smith and Co., Worcester.—Mrs. Fuldagar.—Apply to Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, London, N.—E. M. P.—The better plan would be to grab up the fruit-trees and plant young ones.—A. B. G.—The Hoses are affected with green-fly and brown-scale. Fumigate with Tobacco and then wash with soapy water, applied forcibly with a syringe.—Ignoramus.—Your best plan would be to get a good local gardener to come in and look at your tree and advise you as to pruning. We cannot do so without seeing it.

NAMES OF PLANTS AND FRUITS.

* * * Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the EDITOR of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, W.C.

Names of plants.—D. Bull.—1, *Cypripedium Spicerianum*; 2, *Cypripedium barbatum*; 3, *Cypripedium venustum*; 4, *Anchidium flexuosum*.—J. Brunner.—*Diclyoglossum japonica*.—Hannah Burton.—1, 2, 3, are very strange forms of *Scopolopentium vulgare*, which we shall be very glad to see again from this year's trade; 4, *Lastrea polypodiifolia* apparently, send again when fertile; 5, Looks like *Lastrea amabilis*, send when fertile; 6, Cannot determine.—G. B.—Cannot name from leaves only.—Miss Morrison.—1, *Asplenium germanicum*; 2, *Adiantum Capillus-veneris*; 3, *Pteris acrostichata*; 4, *Adiantum species*; 13, *Polytrichum angustifolium proliferum*. Would have named the remainder had they not been such very little pieces.—C. Brunet.—*Callitriche prelobata*; 2, *Adiantum macrophyllum*; 3, *Cheilanthes scabellata*; 4, *Polytrichum triangulatum*; 5, *Conoclinium javanicum*; 6, *Onopordium harpeodes*.—Henry Thomas.—1, *Odontoglossum triumphans*; 2, *Odontoglossum crispum*, fair var.; 3, *Oncidium triquetrum*; 4, *Cypripedium Meirax*; 5, *Laelia autumnalis Arnoldiana*; 6, *Laelia alida bella*.—G. Piggitt.—1, *Trichomanes humile*; 2, *Hymenophyllum leptopteris superba*; 3, *Ceterach officinarum*; 4, *Adiantum formosum*; 5, *Nephrodium venustum*.—R. Rose.—1, *Eranthemum pulchellum*; 2, *Urtica racemosa*; 3, Bad specimen; 4, *Humbugo cespitosus*; 5, *Maranta zohrina*; 6, *Ophiopogon Jaburan variegatum*.—Rosemary.—1, *Cralagea Pyraechtha*; 2 and 9, are apparently varieties of the common *Green Oak*; 3, *Nand in flower*; 5, *Biota orientalis*; 11, *Stachys lanata* (Grey Wound-wort). Other specimens of Conifers sent again when bearing cones. Please give your name and address next time and send good specimens.

BEEES.

SEASONABLE NOTES.

The wintering of Bees in straw hives is attended with much less trouble and risk than when wooden hives are used. When the combs do not touch the sides, as in the case of the bar-frame hive, the heat escapes round the ends of the combs, and extra precaution is required to be taken by the Bee-keeper in order to maintain the right temperature within the hives. If, however, the Bees in frame hives are crowded into as small a space as possible by means of division-boards, one on either side of the frames, and the space between the division-boards and the sides of the hive filled with chaff or Cork (or, better still, small cushions are used

outside the division-boards and over the frames, being stuffed with Cork-dust and sewn through and through to keep them in shape, all draughts are excluded, and with plenty of stores the Bees winter very comfortably.

WINTER TREATMENT.—During the winter the hives should be kept at as regular a temperature as possible. Bees, as a rule, do better in cold winters than in mild ones. In cold weather they cluster into the centre of the hive, and in the severest weather become dormant; there thus being but little wear and tear, they live well into the spring. When snow falls it should be swept away from the neighbourhood of the hives as much as possible, or the frosts of the hives shuded from the rays of the sun, because when the sun shines upon snow numbers of Bees leave the hive, and, settling upon the snow, become chilled and unable to return; thus great loss is sustained. It is, therefore, a wise precaution to place something in front of the hives, on the appearance of snow, to form a shade from the rays of the sun. A good shield to use with the bar-frame hive is in the form of a hinged porch, which, when unsupported from below, leans on the alighting board at a distance of about 2 inches from the hive front, leaving easy means of exit at both ends. In front, opposite the entrance, there are two 1/2-inch openings, cut out of the lower edge of the porch, which gives easy access to the Bees alighting at their usual place. Other hives can be shaded by fixing before them, about 1 foot away, a wooden screen, nailed to a post sunk into the ground, and large enough to shade the whole front from the rays of the sun. Many of the old Bees of a colony die during the winter months, and are, as a rule, cast out of the hive. In very cold weather, however, the Bees are unable to cast out their dead, and in consequence it sometimes happens that the entrance of the hive becomes blocked; it is, therefore, good policy to pass a searching wire round the floor-board occasionally, with a view to removing any dead collecting there. If, on inserting the searching wire into the entrance healthy Bees are disturbed, and they show great activity, it may be taken for granted that the hive is in a prosperous condition, and attention need only be given to keeping entrance clear to promote ventilation; but if on withdrawing the wire dying Bees are discovered, it may be concluded that the colony is suffering from hunger or disease. The best thing to do in this case is to stop the hive entrance with a piece of perforated zinc, and carry it into a warm room, and supply the Bees with some warm syrup, so that they may get immediate relief. Upon their showing signs of returning life and activity the hive may be returned to its stand, and as the Bees become quiet from the excitement of feeding, the entrance may be unstopped, a cake of candy placed over the feed-hole at the top of the hive, and the whole covered up warmly. In the case of a bar-frame hive a feed-hole may be cut through the quilts over the frames.

KEEPING HIVES DRY.—Roofs of bar-frame hives should be examined, and where there is any doubt as to their being quite weather-proof they should be painted, barred, or covered with roofing felt. Where hives are in exposed situations precautions should be taken to guard them from the full force of strong winds. Roofing-felt makes very excellent covers for straw skeps, being very durable and impervious to water. Beneath these outer coverings plenty of warm material should be used. Outer cases of wood are also very serviceable for straw hives, and have the appearance of square bar-frame hives. Bees suffer from dysentery, which is brought on through dampness of hive, cold, and partaking of unsuitable watery food, such as unripe or fermented honey. All unnecessary manipulation and disturbance of Bees during the winter causes excitement within the hive and an undue consumption of food, and tends also to bring about this disease. Hives found to be foul with dysenteric discharges may have the combs and Bees transferred to fresh clean hives during mild weather, all soiled frames being scraped and washed over with a weak solution of carbolic. The Bees should be supplied with a cake of candy, or a comb or two of sealed stores, the division-boards moved so as to reduce the size of the hive to the number of combs covered by the Bees, the spaces filled up with chaff or

Cork-dust, proper ventilation given, the hive well protected from cold, and the Bees disturbed as little as possible.

S. S. G., *Sturminster Newton.*

POULTRY AND RABBITS.

5272.—Poultry keeping.—It certainly is not injurious to keep a hen in darkness whilst she is sitting, but is rather to be desired than otherwise, for in my opinion hens sit more steadily and the broods are more successful when they are out of sight in as secluded a spot as can be found. Of course "Kitty Belluwa" will take care that there is some fresh air obtainable and will not sit the hens in a small box and refuse the light, so to speak, upon her. With regard to feeding the laying hens at this time of year, I prefer to use sharps and Spratt's meal mixed with hot water for the first feed in the day. I occasionally add a little cress or mixed meat, and should the mornings be very keen I should give some earlote which answers much the same purpose as crumbe. Shortly after dinner the fowls are fed with hard corn, Buckwheat or Wheat for choice, but now and then I may give a feed of Barley. I never use Indian Corn. If a hen will not roost with the others, but gives a lot of trouble, I should certainly send her to the kitchen, unless she is extremely valuable for breeding purposes. It must be remembered that the cost price of an ordinary hen is not as a rule very high, and therefore it cannot pay her owner to spend much time upon her. To sell or kill the offender would thus appear to be true economy. —DORRINA.

—Fresh eggs at Christmas.—If there is one thing which causes a poultry keeper to feel annoyed with his birds and everything around him during the winter months, it is the fact that while his fowls are doing nothing what-aver towards earning their keep, his neighbour's poultry are laying freely, in spite of frost and snow, or rain, as the case might be. The case is doubly trying when good housing, the best of feeding, and careful selection of stock are all attended to, for the owner has then good reason to feel disgusted with his stock. One important point remains, and it is to the neglect of this simple matter that so many owe their failure to procure eggs at midwinter; it is to hatch at the proper time. It is out of the question for pullets to lay at the beginning of October, unless they are fully six months old, yet this is what many expect them to do. What, then, I would urge at this moment upon the readers of GARDENING, is that they should take time by the forelock, and contrive by some means or other to have some chickens out by the middle of March. Then they may look forward to an abundance of fresh eggs from October onwards, and for once in their lives be in a position not only to supply their own wants at a season when fresh eggs are scarce and a luxury, but also be able to meet the demands of their neighbours. —DUFFING.

BIRDS.

5105.—Crossing Canaries.—I am anxious this spring to try crossing between a Nonpariel bird and hen Canary. Would anyone who has tried the experiment tell me if they were successful, and if the young ones were delicate to rear? Any advice on the subject would be gratefully received. —J. F.

RUGS! RUGS! good, all-wool; 8 ft. long, 6 ft. wide, and weigh over 4 lb.; Government grey; only been used a little; much better than common now.—I will send one post free for 3s. from H. J. GASSON, Government Contractor, Eps.

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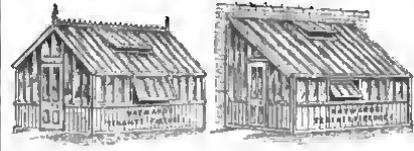
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G. HAYWARD F.R.H.S.

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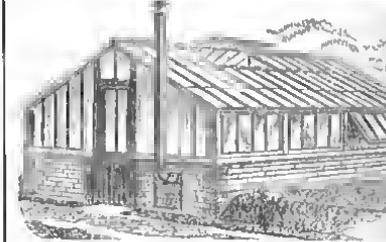
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URBANA-CHAMPAIGN

soon as the Asparagus-roots are exhausted and removed early Potatoes are planted, which have been started in boxes in gentle heat, and after the Potatoes are lifted some other crop will be planted, such as Cucumbers, Capsicums, or Tomatoes, so that each bed carries three crops, and the manure afterwards comes in useful for the garden, after being turned and incorporated. Sowed a bed of the Queen Onion. Though not large it turns in early, and is always useful. Sowed a box each of Sweet Basil and Marjoram to have it early. Mint, Tarragon, and Chervil are required in a green state. The latter stands outside very well in the average winters, but it is always advisable to have some inside to provide for bad weather. Stirred the soil among spring flowers in the beds and borders. Bulbs are pushing through, and care is necessary not to disturb these.

OUTDOOR PLANTS.

MECONOPSIS.

The most familiar of this genus is our Welsh species, *M. cambrica*, a true perennial, while the others, natives of Northern India, two of which only are found in general cultivation, are only of biennial duration. They are all, I believe, quite hardy, but require considerable attention on account of their biennial duration, as they have to be raised annually from seed, the seedlings requiring great care in handling while in a young stage. They are also difficult to please as regards position, and strong, vigorous plants are almost impossible, unless in rich, deep, light soil and a partially shady situation, where they can have abundance of moisture without its becoming stagnant. The better way in handling seedlings is to grow them in pots during the first winter, planting out early in spring, when the stronger plants may be expected to show flower in July. The smaller ones will go on growing, forming large rosettes which will make robust specimens the following summer. Unless under the most favourable conditions a slight protection will be required in wet autumns and winters, this being best effected by squares of glass raised a few inches above the crowns. All the species usually flower the second year, and the grower's aim should be to get as much vigour into them in that time as possible.

M. ACULEATA is usually a small plant in gardens, but capable under proper and liberal treatment of forming bold, massive pyramids of purple flowers. It is a singularly beautiful plant. The leaves are cut up as in *M. Wallichii*, and the flowers are produced much in the same way. It is a biennial also, and a native of the Himalayas.

M. CAMBRICA.—For the truly wild portion of the garden, for the rock garden, or for the flower bed the Welsh Poppy is one of the most charming and useful. On old crumbling walls wherever it can get hold its ample Fern-like foliage and abundance of orange-yellow blossoms are striking and attractive. It will grow almost anywhere. It requires no attention, unless that of thinning out occasionally, as it is a free grower and will overrun almost anything. On the other hand, where it can be allowed space in out-of-the-way corners, stony ground, or even the edges of gravel paths, it flowers freely.

M. NEPALENSIS, the commonest Indian species, found in gardens, is altogether smaller than *M. Wallichii*, but withal a pretty fine-folaged plant, and on this account alone should be much oftener seen in collections of hardy plants. The soft yellow-green leaves form dense rosettes, which are said in a young state to close up or fold over as a protection to the tender crowns. The flower-stems vary from 3 feet to 5 feet high, producing numerous nodding blossoms 2 inches to 3 inches in diameter, and of a soft golden-yellow. It is also biennial, requiring a rich deep soil and partial shade. A native of Nepal.

WALLICH'S GIANT BLUE POPPY (*M. Wallichii*) is, perhaps, the finest of the Poppy-worts in cultivation. It is a truly handsome herbaceous biennial, remarkable inasmuch as it is one of the few, if not the only truly blue-flowered Poppy in cultivation at the present time. It

grows from 4 feet to 7 feet in height, forming a perfect pyramid, extremely beautiful in full flower, the drooping Poppy blooms, of a fine pale-blue colour and perfect in shape, being always interesting. The flowers first open at the top or ends of the branches, continuing until those nearest the main stem have opened. Although, as a rule, not more than about twenty flowers are fully open at one time, there is something fascinating about *M. Wallichii* in full bloom that attracts those not even specially interested in plants. Its curious, deeply-cut leaves, the conspicuous long red bristle-like hairs, its general habit, &c., all tend to mark it out among its fellows for special attention. It was first discovered in Sikkim by Sir J. D. Hooker, and seeds sent home produced plants that bloomed in the Royal Gardens, Kew, in June, 1852. It forms a rosette of large leaves, 12 inches to 18 inches long, deeply cut, and so brittle that,



Wallich's Giant Blue Poppy (*Meconopsis Wallichii*).

although well able to stand our winters, they are apt to be damaged by snowfalls, heavy coverings, &c. The plants naturally like a moist situation in a rich, deep, peaty soil, and partially shaded from the midday sun. It is biennial, and to keep up a stock, seed should be sown annually, and this as soon as gathered. In strong plants and from the first flowers the seed is invariably good and sound. It is an interesting and conspicuous rock plant (see accompanying figure). The varieties fuscopurpurea and purpurea are not so desirable as the type, and when allowed to grow together, spoil the fine blue of the old form. D.

5316.—Plants for a bed.—The most satisfactory system of planting an herbaceous border, to my mind, is to set out a good bold group of any one thing, keeping the tall subjects to the back of the border, with a due regard to arrangements of colours of the various clumps

that are likely to be in flower at the same time. "Thankful" will find a good and varied choice of useful herbaceous perennials suitable for supplying cut flowers in the following list: *Achillea Ptarmica* fl. pl. (1½ feet, double white); *A. Ptarmica* "The Pearl" (larger variety of preceding, 3 feet); *A. Mongolica* (2 feet, single white, summer flowering plants, very free and useful); *Alstromeria chilense* (1 foot, colours various); *Anemone japonica* (rose) and *A. japonica alba* (white, 2½ feet, autumn flowers of great beauty); *A. sylvestris* (the Snowdrop Anemone) (1½ feet, will grow almost anywhere, flowers white, flowers in spring); *Calystegia pubescens plena* (the Double Bearbind) (3 feet to 4 feet, needs support, flowers from June till October); *Campanula persicifolia* (blue) and *persicifolia alba* (white, 2½ feet), the perennial Cornflowers (white, yellow, and blue forms are very free, 2 feet); *Chelone barbata* (scarlet); *Chrysanthemum maximum*, the best hardy Marguerite (1½ feet); *Coreopsis lanceolata* (yellow, 2½ feet, flowers nearly all summer); *Delphinium* (hybrid varieties, 3 feet to 5 feet, various shades of blue); *Dielytra spectabilis* (2 feet, early summer); *Doronicum austriacum* and *D. plantaginum* (Harpur-Crewe) (1½ feet, yellow spring flowering plants); *Gaillardia* (2½ feet, shades of yellow, orange, and crimson, very showy and useful, and with a long-flowering season); *Galega officinalis* (blue) and *G. officinalis alba* (white, 3 feet); *Geum coccineum* and *G. atrosanguineum plena* (bright-scarlet, 1½ feet to 2 feet); *Cypso-phylla paniculata* (2½ feet, very small starry flowers, borne in great profusion); *Helianthus rigulus* and *H. multiflorus major*, and several other perennial Sunflowers (yellow, 4 feet to 6 feet); *Hemerocallis* (Day Lilies) (yellow, 2½ feet), the Everlasting Peas (*Lathyrus latifolius* and *L. alba*), (4 feet, are very prolific if not allowed to seed). Of Lilies probably *L. candidum*, the Madonna Lily (white), *L. cruceum* (orange), and *L. tigrinum* are the most satisfactory without special treatment. *Lycnis chalcidonica* and *L. Haageana* (scarlet); *Malva moschata* (pink) and *M. moschata alba* (white, 2½ feet); *Matricaria inodora plena* (white, 1½ feet), the Iceland Poppies, *P. nudicaule* 1 foot (this can be had in distinct colours—yellow, white, bronze, and rose); Perennial Phloxes are very numerous, and can be had in various heights. *Pyrethrum nigrosum* (a tall, autumn flower, white, 4 feet to 6 feet); Hybrid *Pyrethrum* (double and single, about 1½ feet, are very valuable, can be obtained in any shades of colour required); *Ranunculus acemitifolius plena* (2 feet, double white, spring flower); *Rudbeckia Newmanii* (1½ feet, yellow, with black eye); *Scabiosa caucasica* (2½ feet, mauve); *Solidago* or Aaron's Rods (yellow autumn flower, several varieties vary in height); *Spirea Filipendula plena* (white, 1 foot); *S. japonica*, 1½ feet, white); *S. palmata* (2 feet, rose). Then we have Pinks, Carnations, a great variety of choice of Gladioli, from early summer flowers, like *G. Colvillei* alba, to the later-flowered hybrids of *gamlavensis*; nor should we forget the newer race, Lemoine's hardy hybrids, showy biennials, like the Canterbury Bells, and a host of hardy annuals.—F. B., *Wurcheater*.

5376.—Climbing flowering plants.—You could select Honeysuckles, which are very charming growing against a wall; Clematis Jackmanii and other kinds of Clematis; Rose Gloire de Dijon, the best of all climbing Roses; Jasmines, particularly the Winter-flowering *J. nudiflorum*, which bears a profusion of bright-yellow flowers on the naked shoots throughout the winter when the winter is mild. These will all succeed in the position mentioned.—C. T.

5373.—Moss on a tennis-lawn.—It seems to me that the best remedy is to thoroughly overhaul the lawn and put down fresh turf in the places where it is needed. Your patching-up process will not make a lawn fit to play upon in the coming summer. Get some good turves, and if you are not able to do so yourself, get a competent man to lay them down. This will be far the better plan in the end and save much vexation.—C. T.

—There are two causes of Moss on lawns—viz., damp and barrenness. In your case the soil appears to be poor, and rich heavy soil should be beneficial.—E. H.

5380.—Good blue annuals.—Two of the best blue annuals that I can suggest for this special purpose are *Lupinus nanus* and the blue *Draba* of the annuals. The Lupin is

a very pretty and continuous blooming species. Its flowers are really blue and white, but its effect is that of a blue flower. These two things would come in at the back of the Nasturtium, as proposed; but I may say there is no truly white Nasturtium, and the nearest approach is a very poor thing in colour, not a plant to be made much of in front of a border. Two other good blue annuals that would be charming in front of the border are *Nolana atriplicifolia* and *Phacelia campanularia*. If one was not restricted to the use of annuals the old Blue Salvia and the Blue Daisy (*Agathina caelestis*) are quite two of the most beautiful things. They can be bought cheaply and planted out in May.—A. H.

— One of the best blue annuals, *Phacelia campanularia*, would probably be too dwarf, as it only grows a few inches high. It would look well in front of the dwarf White Nasturtium. *Nemophila insignis* is pretty, but will hardly last all the season. I need to have beautiful seedlings of *Viola cornuta*. Seedlings raised now will flower during summer.—E. H.

5389.—Growing Dianthus.—I presume you mean the varieties of the Chinese or Indian Pink (*Dianthus Fuldewigi*), the seed of which must be sown under glass in the early spring. You do not appear to have been very happy in your management of this very beautiful and varied-coloured flower, but avoid the dusty, quixotic colour, which may be quaint, interesting, or æsthetic, as they are sometimes called, but very ineffective in the garden. They require a good rich soil, plenty of space to develop, and careful treatment during the summer. I should pot up your little plants; keep them near the glass to prevent the growth getting long drawn. If kept in a shady place or a long way from the glass the growth soon gets drawn.—C. T.

TREES AND SHRUBS.

HONEYSUCKLES (LONICERA).

These graceful, fragrant, and beautiful plants may be made a charming aid to the flower garden or pleasure-ground. Whenever picturesque gardening is attempted they are beautiful, if isolated and allowed to ramble as tufts in their own way, while occasionally in bold rock gardening, on banks, in groups, or in tufts, they would be charming. The common native Woodbine or Honeysuckle (*L. Periclymenum*), particularly its fine varieties, the Dutch (see Fig. 1) and Late Dutch, are as beautiful as any. Both varieties bear dense clusters of fragrant red and yellow blossoms, and are vigorous climbers. The late Dutch variety blooms throughout the autumn, and hence is perhaps preferable to the

japonica (also called *L. Hilleana*) is one of the loveliest of all, being very elegant in growth and profuse in bloom. It has broad, pale-green foliage, and its deliciously-scented flowers are first white and then pale-yellow. It is an extremely vigorous grower and free bloomer, continuing in flower for several weeks in July and August. *L. etrusca*, with very sweet-scented flowers of a yellow and purplish hue, is a strong twiner, and so is the

NORTH AMERICAN L. FLAVA, the flowers of which are a rich yellow, though it requires the warm shelter of a wall. A variety of *L. flexuosa*, having foliage netted with yellow veins, is called *aureo-reticulata*. It is an elegant and effective climber, but not so desirable a flowering variety as the typical *flexuosa*. The North American Trumpet Honeysuckle (*L. sempervirens*) (Fig. 2), though usually grown as a greenhouse climber, is quite hardy enough for open walls in the south, and a very cheerful climber it is throughout June when covered with an abundant crop of orange-scarlet flower clusters, which are often borne again in September. It must have a light warm soil, and grows admirably in sandy peat. The commonest variety of it is that called minor, which blooms more freely than the type. A little known, but elegant Honeysuckle is *L. acuminata*, from the Himalayas, a tall, strong shrub with large leaves, which bears large purple flowers in pairs from the leaf axils throughout July. Besides the twining Honeysuckles, there is a group of them which do not climb, these are called Bush. They are numerous, and several are worthy of attention. The winter-flowering *L. Staudishi* and *fragrantissima* belong to this group. Though strictly non-climbers, they are usually grown against walls or trellises. Their very fragrant white flowers, sometimes produced in mid-winter, make them most desirable for the walls of a house or garden, where their fragrance may be enjoyed; or they may be grown as bushes in the open shrubbery. *L. Ledebouri* is a common Bush Honeysuckle of strong, wide-spreading growth, bearing in summer an abundance of yellow and red-tinged flowers, and, as it rapidly spreads in a graceful mass, is an admirable lawn or bank shrub. *L. tatarica* and *Xylosteum* are common shrubs, not so important as the foregoing; the first bears pink flowers, the other, a native plant, has white blossoms. G.

5392.—Cutting a Privet-hedge.—If you want a thick hedge cut it down within one foot of the ground in March. If you state the height you require it to be I will be able to give you more instructions.—P. D. D.

5435.—Striking cuttings of Golden Elder.—Cuttings 3 inches or 40 inches long at the ripened young shoots, planted firmly in the ground, will soon make good plants.—E. H.

5371.—Clematises.—The best petalled Clematises in the list I gave on page 690 are in the Jackman section. The old Jackman frequently only carries four petals, but this is not hard and fast rule.—P. U.

5374.—Cutting back Rhododendrons.—You may cut down your Rhododendrons to any height you like. You must, however, understand that the lower you cut them the harder the wood will be; consequently, the longer it will take them to start into growth. Old wood makes very freely shoots the first year and does not quite recover until the end of the third season's growth. Something depends, however, on the condition of the roots. If these are in a deep bed of natural soil the growth will be fairly strong the second year. If the plants are in a prepared bed, not more than 18 inches deep, you had better give the bed a surface-dressing of peat or suitable loam 3 inches thick to help the roots. If these materials are not available, make up a mixture of rotten turf, leaf-soil, and sand, and lay it on the bed. The end of March is a good time to cut them down.—J. C. C.

— If cut back in March they will break and get green during the following season, but the wood is harder than that of Laurels, and the buds will consequently be longer in breaking.—E. H.

5387.—Plants in Rhododendron beds.—Please avoid such commonplace things as you have mentioned. Such a position gives ample opportunities to plant the finer kinds of Heaths, which are delightful in such a position and succeed remarkably well, and you may have the pretty Dog's-tooth Violets, Grape Hyacinths, the *Hebe* (spring Star-flower), Glory of the Snow, and many other flowers. The dwarf varieties of Lily would do also, but I should plant the

various forms of Heaths. They are much neglected, and yet as charming as anything one can get in a garden. A peat bed is exactly the place for them. I have usually seen *Gladiolus brechenleyensis* in a good loamy soil, but possibly it would succeed well. It is a glorious *Gladiolus* for planting in a mass, none better—far preferable than many of the high-priced hybrids for this purpose. A good clump of this scarlet flower in the autumn is a gay picture.—C. T.

— Seeing that your beds have only a single plant of *Rhododendron* in the middle, and this only 1 foot high, you have a good space of uncovered ground to fill up. For the summer you may fill up between the Lilies and *Gladiolus*, the



Fig. 2.—North American Trumpet Honeysuckle (*L. sempervirens*).

remaining spaces, with *Lobelia* and Golden Feather, and plant a few Zonal Pelargoniums, China Asters, or Ten-week Stocks. The *Gladiolus brechenleyensis* will grow in the peat as well as the other kind. Next October, when these subjects are over, you may put in their place such bulbs as Hyacinths, Tulips, Snowdrops, and Crocuses; also a few Pansies and Forget-me-nots.—J. C. C.

5350.—Evergreen hedges.—There is nothing that associates so well with Thorns for a hedge as Privet, and if you get the oval-leaved form it is nearly evergreen, and grows quickly, and will bear clipping or cutting back in any way you like. There is certainly nothing better for filling up the bottom of your hedge quickly. The common Laurel is the next quickest-growing plant, but it resents constant clipping after a few years. As Hollies are so slow in growth, my choice would either be the Privet or the English Yew. The latter makes a neat hedge, and is thoroughly wind-proof.—J. C. C.

5177.—Tuberous-rooted Begonias.—If the tubers are large they may be successfully divided, but each piece must have one or more "eyes" or they will not grow. The best time to divide them is just as they are on the point of starting. Cut them clean through with a sharp knife, and lay the pieces on a dry shelf for a day to heal the cuts thoroughly. Then place them singly in small pots of sandy soil, place in gentle heat, and water very sparingly till they are well in growth. I do not consider divided bulbs equal to whole ones; but in one way it does good, as the stems will be stronger, and with good culture they will do very well.—B. C. R.

5351.—Ashes for the garden.—Nothing better, especially if the soil of the garden is naturally heavy or damp. Even otherwise good coal-ashes contain a certain amount of manurial properties. All you have to do is to spread the ashes on the soil and dig it in.—B. C. R.

5370.—Corrugated iron for stages.—Only the upper surface of the iron need be lime-washed, the other is of no consequence. The lime should be fresh and hot.—B. C. R.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of *Gardeners' Flowers* and good fruits and vegetables for drawing. The drawings so made will be engraved in the next number and will appear in due course in GARDENING ILLUSTRATED.



Fig. 1.—Flowering spray of Dutch Honeysuckle.

other. In Continental gardens it is sometimes the custom to train common Honeysuckles as low standards for borders, and when in flower their appearance is pleasing. *L. Caprifolium*, also found wild in England, makes a beautiful garden climber, and is a good deal like the native kind form. A very charming climber is *L. flexuosa*, from Japan. It can always be recognised by its dark purple stem and very hairy purple-stained leaves. The flowers are purplish-yellow and very sweet-scented. *L.*

INDOOR PLANTS.

5346.—Treatment of Chinese Primulas.—These are among the easiest of all greenhouse plants to manage, and at the same time some of the most useful, flowering continuously for six months at a stretch, and often longer still. To obtain nice plants in bloom by Christmas or even earlier, the seed should be sown early in April, though for late or spring flowering a month later will do. If large plants in 6-inch or 7-inch pots are wanted better sow in March. Any well-drained pan or box will do to raise the plants in, or pots may be employed, though these dry too quickly to please me. The best soil is a mixture of fine loam and leaf-mould in equal parts, with plenty of sand and a little sifted Cocoa-nut-fibre to keep it open; drain well, press the soil gently to an even level, sow the seed, water in well, and just cover the seeds with a little sifted leaf-mould (or Cocoa-nut fibre will do almost as well) mixed with a fourth of sand. Place in a temperature of about 60 degs. (I have often raised the plants capitially in an unheated house in May and June), and keep regularly moist and shaded from sun. Prick the seedlings off when fit, and pot them first into small 60 pots, and afterwards into 4½-inch or 5-inch size. Grow on till October in a cold frame, lightly shaded, but with plenty of air, then house. These charming plants are much hardier than many suppose, and when hardily reared will endure several degrees of frost uninjured.—B. C. R.

5385.—Treatment of Carnations.—The plants now in small pots should be repotted into 6-inch ones in February. These are not anything too large for single plants of "Malmaisons." They would do very well in an unheated Rose-house if the plants are placed near the glass-roof and kept clean. Some of my last year's layers of Malmaisons are so large that they will be potted to flower in 7-inch and 8-inch flower-pots. The pink-flowered one is stronger in growth than the blush.—J. D. Y.

5343.—Heaths after flowering.—Harden the plants off slightly (especially if they have flowered in a warm-house in the winter), and give rather less water than usual for a time, then prune them moderately, cutting out most of the weak spray, and shortening the strong shoots that have flowered to half or a third of their length. Afterwards keep close in a warm house or pit and not the syringe freely overhead, but give water at the root only, so as to prevent the soil becoming really dry. As soon as they have fairly "broken" again give more water and thin out the shoots a little, if necessary. When these are an inch long give the plants a moderate shift, using good sandy peat made quite firm. Keep moderately warm and close for a time until well in growth again, when the best place for the plants of most varieties is standing on ashes in the open air; at least, until the middle of September. The hard-wooded kinds will not bear so much pruning as those of a comparatively soft growth, such as the well known *E. hyemalis*.—B. C. R.

— Pick off all dead flowers, and shorten back all long shoots. The soft wood Heaths such as *Hyemalis gracilis*, *Melanthera*, &c. will be benefited by a little warmth after pruning, till they break into new growth. When the young shoots are fairly started the plants may be repotted.—E. H.

5353.—Aspidistras in pots.—Doubtless the reason why these plants are not making such strong healthy leaves as heretofore is owing to the plants having exhausted the soil in the pots in which they are now growing; the only remedy for this is to repot the plants into large flower-pots. Good yellow loam, leaf-mould, and decayed manure is the compost they thrive best in, a little coarse sand added serves to keep the compost open. If it is undesirable to have the plants in larger flower-pots than those they are now grow in they may be broken up, and the plants can be replanted in smaller flower-pots. They are easily grown plants.—J. D. E.

— Your plants are evidently in a starved condition, and require to be repotted. Give them a few doses of weak guano or root-water, and in a month or six weeks' time shift them into other pots (clean and dry), 2 inches or 3 inches larger across the rim. Use a mixture of loam (or good garden soil) with a third as much leaf-mould, and some sand; drain the pots well, and make the soil quite firm.—B. C. R.

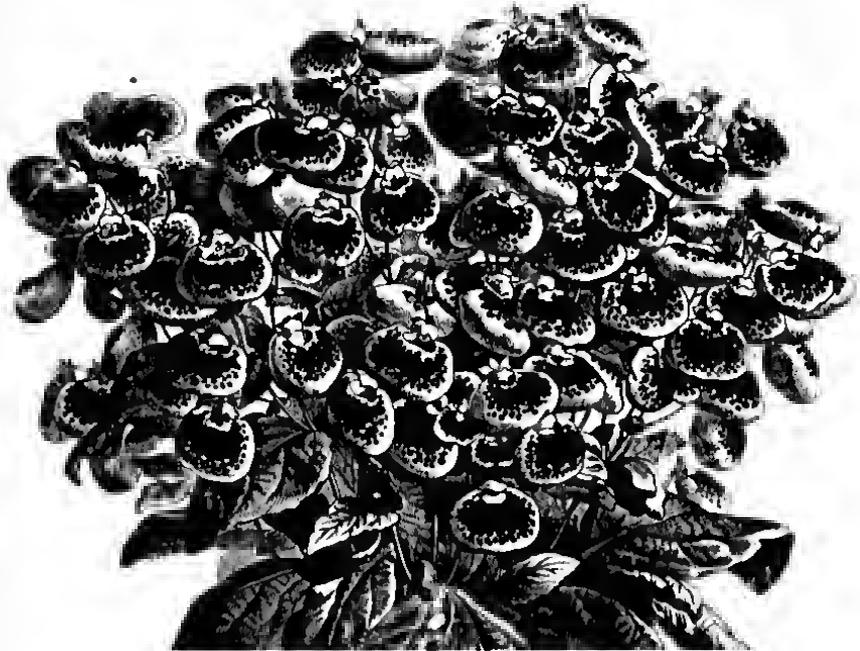
— The leaves will get smaller when the roots are cramped. To obviate this divide and repot or shift into larger pots, or give liquid-manure.—E. H.

HERBACEOUS CALCEOLARIAS.

These plants come in capitially to succeed the Cinerarias. The flowers in a cut state do not last a long time, but the plants when used for the decoration of the greenhouse or rooms, and placed so that they receive a fair amount of light, are very showy and most interesting, as the colours vary much when seed is procured from a good strain. The habit of growth, compared to what it was a few years ago, is also so much improved by careful selection as to render this plant much more desirable in every way. The accompanying engraving shows an excellent type of plant—dwarf, bushy, and one mass of bloom. To have the plants in full flower by the end of April or early in May, the seed should be sown thinly in large pans about the first week in June, using a compost of half peat and leaf-mould, adding to this a plentiful supply of silver sand, the whole passed through a fine sieve. Sow the seed thinly. If the soil is moist no water will be required for a time; but when water is required it should be allowed to soak through the bottom of the pan until the whole mass is thoroughly moist, care being taken not to wash the seed off the surface. Thoroughly drain the pan by filling it three-parts full of crocks, and over these place a layer

of 2½ inches in diameter, using rather more loam and not sifting the soil so fine; return the plants when potted to the frame. By keeping tho

FRAME UNDER A NORTH WALL during the summer months shading is dispensed with—an important item in the culture of these plants, as it often happens that when the frame is placed in a sunny position sufficient moisture is not maintained without the plants, and they fall a prey to green-fly, which, if not quickly eradicated, soon cripples the plants to such an extent that they hardly ever retain that vigour which is essential to success. During the summer months a damp atmosphere within the frame must be preserved, the plants standing upon a thick bed of coal-ashes. As soon as the roots reach the sides of the pots, and before they are in the least pot-bound, shift them to a larger size, according to the size of the plants, until they are in their flowering pots. Those plants in 6-inch pots are the most useful. After the first shift the soil may have more turfy loam and a small quantity of partly decomposed horse-manure added to the previous mixture, and leaving out some of the peat. For the final potting, which usually takes place in January, when the plants are in their winter



A good type of Herbaceous Calceolaria.

of rough leaves, pressing the soil firmly in the pan and maintaining an even surface to within half an inch of the rim. Upon this surface sow the seed thinly, gently pressing it down and covering the whole with white sand, which induces a quick rooting of the plants. Over the surface of the pan place a square of glass, covering the same with Moss, which assists in retaining the moisture in the pan; or a piece of slate, which preserves the moisture better than glass, may be placed over the top of the pan. Place the latter in a cold frame behind a north wall. The seed will quickly germinate, and as soon as the seedlings appear above the soil admit air by slightly tilting the glass on one side and removing the shading, and if slates have been used substitute glass. As growth progresses remove the glass entirely, and give a little air to the frame. When the seedlings are large enough to handle transplant them carefully into other pans about 1 inch apart, using the same kind of soil, with the addition of some loam, sifting all fine as before. Return them to the frame, and keep close for a few days until the roots have taken to the new soil. Gently dew the plants overhead with tepid water, and admit air gradually as growth proceeds. When the leaves touch each other the plants will be ready for their first shift into

quarters, should be well prepared. About the middle of September, or sooner, should the weather be cold and dull, they should be placed where they will obtain more light and a little sun. A cool-house from which frost is excluded suits admirably. They will need but little fire-heat during winter.

AS THE SPRING ADVANCES and the pots become filled with roots a little weak sheep or cow-manure three times a week will be very beneficial. Early in March the flower-stems will begin to develop above the foliage, and they will each require the support of a small stake. When in flower in April and May a slight shade from hot sunshine is required. Mind, if the plants are allowed to become pot-bound or ever-dry at the roots they seldom regain their natural vigour. When there are any signs of green-fly on the leaves smoke the plants carefully with Tobacco in the evening, and again in the early morning, as the second application will generally effectually destroy any that may be left alive from the first fumigation. After this give the plants a good washing with the syringe. B.

Original Flowers for Christmas.—There are few flowers that will open their blossoms in the open air at Christmas. The Christmas

Rose (*Helleborus niger*) will do so. The best variety is that with pinkish flowers named major. It is also grown in some districts under the name of *altifolius*. There is a pretty variety later in flowering, but with whiter flowers, grown as *angustifolius*. Under glass the best white flowers are the handsome *Arum Liliæ*, Roman *Hyacinths*, Double and Single Dutch *Hyacinths*, Double and Single White *Azaleas*, *Eucharis amazonica*, and the tall spikes of white-flowered *Callianthes*.—J. D. E.

5368.—**Plants for a greenhouse.**—You could begin with a few good vigorous-growing Ferns, such as *Pteris cretica*, its variety *abnormalis*, *P. tremula*, *Onychnium japonicum*, *Cyrtidium falcatum*, and *Adiantum cuneatum*. These are not at all troublesome to manage, and may be brought in, when so desired, for room decoration. Then you could have *Aralia japonica*, *Aspidistra lurida variegata*, both good easily-grown things, *Cytisus racemosus*, producing a wealth of yellow flowers, bulbs in variety, *Hyacinths*, *Tulips*, &c., *Campanulas*, as *C. carpatia* and the white *C. isophylla alba*, or *C. muralis*, very charming in a basket, *Zonal Pelargoniums*, and Ivy-leaved varieties particularly, the salmon rose-coloured *Mme. Crousse*, *Cinerarias*, Chinese *Primulas*, the sweet-scented Tobacco-plant (*Nicotiana glauca*), a very useful pot-plant, bearing a profusion of large ivory-white, sweetly-scented flowers, *Maréchal Niel* Rose planted in the border, and the graceful *Grevillea rubra*. Amongst flowering plants I should rely chiefly upon the *Pelargonium*, which is very easily grown, as possibly you are aware, and there are a number of splendid varieties, both single and double.—C. T.

5348.—**Luculia gratissima.**—After the plants have all been pruned back young shoots will break out, and when the smallest of these are 3 inches or so long take them off with a sharp knife, cutting a small heel of the old wood with each cutting. Dibble in pots of sandy peat, a layer of sand being placed on the top. Cover the cuttings with a bell-glass, and shade from bright sunshine. Wipe the bell-glass dry inside every morning.—E. H.

—The cuttings should be inserted in March, in well drained pots of sandy peat, sifted with pure sand, covered with a bell-glass, and placed in a warm-house or propagating-pit. They must never be allowed to flag, or they will fail to root. Of course, the condition of the cuttings is a matter of considerable importance.—B. C. R.

5342.—**Gloxinias from seed.**—These plants are very easily raised from seed; but the *Gloxinia* is a hot-house plant, and the seed, which is small in size, should be sown in fine soil, and slightly covered with the finest particles, which should contain a good deal of white sand. The seed vegetates most freely if sown in pots or pans, and they ought to be placed in the forcing-house or plant stove, and the seed will vegetate all the more freely with a little bottom-heat. When the small plants have formed the first leaf or two after the seed-leaves they may be pricked out into other pots or pans, and after making good growth they may be planted singly in flower-pots, and if the seed is sown now and the plants grown on freely in a hot-house, they will flower well during the ensuing summer and autumn, and well into the winter.—J. D. E.

5329.—**Plants for a small greenhouse.**—The fact that the window of a sitting-room opens into this greenhouse would not be sufficient to keep the frost from it in severe weather, but with due care *Violets* might be grown well in it, and many other plants, such as *Auriculas*, *Roses*, and *Carnations*. These, however, will not flower in winter except in warmth, but they might do well in spring and autumn. Climbing *Roses*, such as *Niphetos*, *William Allan*, *Richardson*, *Gloire de Dijon*, and *Reine Marie Henriette*, may be planted in the border, and this edge with English Ferns, especially *Hart's-tongue* (*Scelopendrium vulgare*), *Asplenium Adiantum-nigrum* (sometimes called *French Fern*), and *Holly Fern* (*Polystichum lonchitis*), which are all evergreen, and therefore are decorative in winter as well as summer. Small hot-water arrangements for heating are now so attainable that "B. B." might easily keep the frost out, and have more flowers in winter. Bulbs of many sorts can be grown, however, without heat—*Tulips*, *Narcissus*, *Hyacinths*, &c., and *Wallflowers*. Forget-me-not (and *Pink-roses* used to make a spring show. The *Rose* *Begonias* can be grown here in summer.—I. L. R.

HOUSE & WINDOW GARDENING.

CUT-FLOWERS IN THE HOUSE.

NARCISSUS.

WHERE cut-flowers of these are desired they should be planted in bold groups on borders, in beds, or on Grass sheltered by hedges or shrubs. The first crop of blossoms can be obtained from pots or boxes in the greenhouse, and these will be quickly followed by fully formed and bursting buds in sheltered and sunny places. These buds will open large, fresh, and fair if placed in pots of water in a warm greenhouse or a sunny frame or window. In cutting *Daffodils* or *Narcissi* for indoor decoration, cut the flowers when the buds are opening or even



OUR READERS' ILLUSTRATIONS: *Narcissus biflorus*. Engraved for GARDENING ILLUSTRATED from a photograph sent by Mr. J. R. Pearson, Chilwell, Notts.

just before, and let the stalks be long, as the flowers group better with long stalks. Do not cut the leaves of choice kinds, but use the foliage of common sorts with choice flowers. Put each kind in a separate glass. Put together as many of the same kind as you like, but always avoid overcrowding. Amongst the many kinds of *Narcissus* useful for cutting, the creamy white, *N. biflorus* (here figured) is valuable. It is one of the easiest of all kinds to naturalise, spreads rapidly and flowers freely. B.

5311.—**Room plants nipped by frost.**—These plants should not be placed in strong heat or sunshine, but be syringed overhead in a moderately warm place when frost-litten. But by this time they will have probably partially recovered, and will be useful next year although their beauty is spoiled for the season. The *Callus* must be kept safe from frost until the end of May, and then turned out of their pots to gather strength, in a rather shady border, until September; placing them in good soil, and giving them an occasional drenching with water or liquid-manure in dry weather. They should be potted up in September, and brought on, in slight heat, to flower by Christmas, giving them abundance of water, but carefully sheltering them from frost. The *Hardy-foot Fern* will recover best in the damp warmth of a fernery, where it will throw out new fronds in time; and the *Freesias* should be kept in their pots until their green has quite turned to brown, and repotted in July; then placed in a warm sunny position out-of-doors to start. The best way to save room-plants from the frost is to remove them at night to a heated greenhouse; if this is not feasible, take them away from the windows, and place them together in a corner near the fireplace, covering them at night with several newspapers, which are light, but keep out a good deal of frost. During intense cold, the fire should be banked up and left burning, with a guard on; a lamp, if placed on the floor between the plants and the window, prevents the air freshening (the current of hot air rising between) and if the

lamp be placed in a metal tray it will be safe from accidents. A bath-room, where hot-water pipes are constantly warm, is a good night refuge for plants in frosty weather; but if placed out of all draughts, and well covered with newspaper, they are safe in ordinary weather. This covering should not be removed until after the room has been aired and brushed out in the morning; a most dangerous time for delicate plants in pots, or during the prevalence of cutting winds.—I. L. R.

5386.—**Window boxes.**—The window-boxes should be made of wood, painted green or other suitable colour, which may be left to individual taste, but avoid anything conspicuous. Each box should be about 1 foot in depth, and have two or three good-sized holes in the bottom for drainage. As regards the breadth, the box should fit the window, and a local carpenter will give you an estimate. An ordinary window-box should cost little, but it is better to have them substantial in the first place. If covered with virgin Cork they will look less formal, but this is a matter for you to decide. In my own case I have little separate boxes to fit into the side windows, but perhaps a continuous box, so to say, would be better, as then you could get a regular fringe of flowers. Fill up with ordinary soil, such as used for *Pelargoniums* and greenhouse plants generally. Put in a few large crocks in the bottom, and then some *flake* leaf-mould to prevent the fine soil from running down and choking up the drainage. You must make good use of the Ivy-leaved *Pelargoniums*, which are numerous; but I like the salmon rose-coloured *Mme. Crousse* as well as any. It is a very charming variety, and will bloom throughout the summer and until cut by frosts. There is really nothing better than this class of *Pelargonium* for the summer, and for growing up the sides of windows you have the quick-growing *Virginian Creeper*, particularly the variety *marialis*, the leaves changing to fine colours in the autumn, or you can make good use of the annual *Convolvulus*, very pleasing with their gay-coloured flowers. Ivies, particularly the pretty variegated kinds, could be also trained up the window, or the gay yellow-flowered *Canary Creeper*, which is a remarkable free bloomer, with its pretty light-green growth and bright-yellow bloom. Then you may make use of the climbing *Nasturtium*. To fill up the centre of the boxes you may use *Lobelias*, *Musk*, *Tuberous Begonias*, *Night-scented Tobacco*, *Zonal Pelargoniums*, *Fuchsias*, and similar things.—C. T.

—Although the metal boxes are lighter and occupy less space, I consider the wooden ones superior in several respects. They are easily made of flooring-boards, which run to 6 inches to 6½ inches wide, and about ½ inch thick—these for the sides; for the bottoms use the same, or those 9 inches or 10 inches by 1 inch thick are sometimes more convenient. The front can be ornamented with either the glazed tiles now so common or pieces of virgin Cork nailed on. Make them the full width of the sills, so as to have two or three rows of plants instead of one if possible, and a depth 6 inches (inside) is quite sufficient. For bow windows three boxes will be necessary, each made to fit its place as nearly as possible. Bore five or six 1-inch holes in the bottom of each for drainage, and place 1 inch of broken bricks or ashes in the bottom, with some rough siftings over. Soil, three parts of good loam to one of leaf-mould or well-decayed manure, some sand, and a little soot. The best plants are ordinary "Geraniums," *Fuchsias*, *Calceolarias*, *Margarites*, *Begonias*, *Lobelias*, &c.; for the front Ivy-leaved *Pelargoniums* and *Fuchsias*.—B. C. R.

5382.—**Heating a sitting-room.**—Why not heat your sitting-room at night with one of the oil-stoves, like *Toopoo's* or *Rippingille's*, either of which would suit you admirably, as if there should be any smell to them the fumes could escape up the chimney? It is when there is no escape for the injurious fumes that they are objectionable. The main point, however, is, in such a case as yours, to light the stoves only in frosty weather. Place a thermometer on one of the pots nearest to the window, and when it gets down to 35 degs. light the stove and put it out again when the same instrument indicates 45 degs.—J. C. C.

—The best way to heat a sitting-room of fair size with an oil-stove. It is surprising the perfection

to which the oil-stove has been brought in recent years, and when the wicks are kept properly trimmed and the bowl, so to say, not too full, no small arises, except perhaps a little when first lighted. Light the stove some time before the room is aired, and if stood in the centre, the whole place will soon get comfortably warmed. An oil-stove in a bedroom or bathroom is of great service.—C. T.

— I should say that one of the numerous stoves on the slow-combustion principle, and preferably one cased with terra-cotta or porcelain, would be very suitable, as they give off a nice gentle warmth for many hours without attention, and at a very small cost for fuel. One of the small hot-water apparatuses, heated by either gas or paraffin-oil, such as are advertised, would do equally well if fixed in the window beneath or near the plants. These require next to no attention, and give off a perfectly steady heat.—B. C. R.

DOUBLE-FLOWERED FUCHSIAS.

Fuchsias make admirable window-plants, and can be so grown to great perfection. Though opinions may differ as to whether single or double-flowered Fuchsias are the more beautiful, there can be no doubt whatever that the double flowers are admired by many, and the demand for them is, I think, greater than for the single forms; consequently among the new varieties sent out within the last few years there is a preponderance of double-flowered kinds. Some of the rather doubles were rather apt to run up tall, and were therefore not so well suited for growing in the shape of little bushes useful for rooms as many of the single ones; but this cannot now be urged against them, as the accompanying illustration of Frau Emma Tejfer will show. Few classes of plants had themselves to so many different modes of treatment as the Fuchsia; for instance, they may be grown as bushes, pyramids, or standards, employed for covering roofs and furnishing pillars, or for beds in the open ground. For all these varied purposes suitable varieties with double blossoms are to be found among the numerous forms now in cultivation. These double-flowered Fuchsias are not so popular with the market grower nor for exhibition as the single forms, for, owing to the blooms being much heavier, they are far more liable to drop when shifted about than those of the single-flowered varieties are. In making a selection of the best double-flowered Fuchsias, I should be inclined to give a place to the following with light-coloured corollas:

FRAU EMMA TEJFER, a free-growing, freely-branched variety, with a very large corolla, of a kind of pinkish-white, deeper towards the base of the petals. The sepals of this are coral-red, and, in common with many large-flowered varieties, they do not appear of sufficient size for the huge corolla. The blossoms of

MISS LACEY FINNIS (a spray of which is figured on page 688) are something in the way of those of the last, except that the corolla is pure-white and the plant is not so free in growth. This when first sent out (about sixteen or seventeen years ago, I think) attracted a large amount of attention. It makes a good pot plant, but as the branches are weak and the flowers heavy, ample support must be afforded them. It is largely grown for Covent-garden-market.

MME. JULES CURETIN forms a fine large specimen and is suited for furnishing a pillar, as it grows quickly, while the flowers are bold and effective. The corolla is large and pure-white, and the sepals are more conspicuous than in either of the preceding.

MOLESWORTH is a good variety for any purpose, and one that has become popular with our market growers. The corolla is large and pure-white, while the bright coloured sepals are of a proportionate size and reflex in a very pleasing manner.

BUFFON, a somewhat upright-growing variety, is noteworthy from the peculiar pinkish-tinted corolla. The last variety to mention of those with white corollas is

DUCHESS OF BOWSWORTH. Of this I have had but a limited experience, but still sufficient to lead me to think it will turn out one of the very best of this section. It was introduced by Mr. George Ruddle, so well known in connection with the Fuchsia, and was announced as a cross

between Molesworth and Mrs. E. G. Hill (one of Lemoine's varieties). It is a large bold flower, while the petals are unusually thick and wax-like.

Of dark-flowered varieties there is a great number, many of which differ in little else but name from each other, though of course there are some very distinct forms:—

AVANCEUR, which was sent out about twenty years ago, is still one of the best, the habit being good, while the flowers are freely borne.

PHENOMENAL flowers profusely when small, yet the blooms are, with one or two exceptions, among the largest of all Fuchsias. The corolla of this is of a deep violet-purple colour, marked with rosy-crimson at the base. It is a good variety for growing in the shape of little bushes.

NOUVEAU MASTROUNTE has a large purplish corolla, flaked more or less with red. This latter feature renders it when well marked very attractive.

CANTON LEON TUSTOI is notable from the closely-packed corolla being of a deep bluish-purple, without markings of any kind. The habit of the plant too is very good.

LA FRANCE has large, well-reflexed sepals and a distinct tinted corolla, which has been described as blue, and though a long way from that colour it is very distinct shade.

SIR GARNET WINSLEY is a good variety for any purpose, with a large plum-coloured corolla.

GENTLE FLASHBET, one of the newer French varieties, is of good habit, free-flowering, and

it received a certificate from the Royal Horticultural Society in 1875, but it is now not much grown. About twenty-five years ago a variety was sent out under the name of Norfolk Giant, that attracted a good deal of attention from the size of its flowers, but it was much inferior to Champion of the World, although from the many points of resemblance there is, I should think, but little doubt that this last was a seedling from the older one. Of light-flowered Fuchsias, that is to say those with white tube and sepals and coloured corolla, there are, as far as I am aware, none with double blossoms. The Fuchsia is a good illustration of the varying fashions in flowers, for from 1880 to the present time only three garden varieties have been noticed by the Royal Horticultural Society—viz., Mme. Galli Marie 1880, Mrs. Ruddle 1883, and Dorothy Fry 1889, while in the ten years previous to that no less than forty-two varieties received certificates. H.

5301.—Creepers for a window.—The Tropaeolum family undoubtedly furnish the prettiest window creepers, having both bright flowers and neat foliage. Tropaeolum canariense is one of the best for this purpose, bearing masses of yellow flowers in luxuriant sprays, if well cultivated. Seed can be put in during March out-of-doors, unless in a very cold situation, when it may be raised in a pot inside the window, and planted out in May. Tropaeolum Ledebianum, too, in several handsome varieties, with brilliant scarlet flowers, is very



OUR READERS' ILLUSTRATIONS: Double-flowered Fuchsia "Frau Emma Tejfer." Engraved for GARDENING ILLUSTRATED from a photograph sent by Miss Helen, Hamstead, N.

especially noteworthy from the corolla being of a very distinct lilac-mauve tint. We have had two or three of this class lately from the Continent, another being

OTAVIE FROUILLÉ, a good deal like the last, but with more of a rose tinge in the corolla.

CHAMPION OF THE WORLD, a gigantic flowered variety, whose massive corolla is of an intense dark-purple. This does not bloom so freely as many others, and the flower-stalk is of unusual length, so that it is useless for blooming in a small space, but as a pillar plant in the conservatory or in some such position it will often prove to be one of the most striking of all Fuchsias. This variety is by no means new, as

suited for the purpose, and can be sown at the same time as the Canary Creeper. An twiler to hung from the windows the Ivy-leaved Pelargonium ("Geraniums") are very useful, especially such free-growing varieties—Mme. Crousse, Mme. Thibaut, and Souvenir de Charles Turner. These can be bought now as small plants, repotted, and pinched back, if straggling; they will then be ready by put out at the end of May, when they should be covered with bloom.—I. L. R.

—Original and new-leaved Pelargoniums in variety, Tropaeolum Ball of Fire, Fuchsias of drooping habit, such as Mrs. Marshall, single Geraniums, and Lobelias of the double type, some of the very best plants for this purpose.—H. C. H.

ORCHIDS.

COCLIODA VULCANICA.

This is the plant which I have before brought to the attention of my readers under the name of *Mesospidium vulcanicum*, but that given above appears to be the one most recognised now. It is a great beauty, and well deserves the attention of everyone. The flowers are of a bright rosy-carmine. I see the Messrs. Veitch quote its discovery many years ago by Dr. Spruce, the German botanist, and I have always been under the impression that Spruce was a native of Yorkshire. The plant appears to grow at a great elevation, between 10,000 feet and 11,000 feet above the sea being given as its range. It is one of the beautiful small-growing kinds which every amateur should possess, being a fine companion plant for many of the cooler *Ophitoglossums*, and its gay colour is a very attractive foil for the whites which are so prevalent in the last-named genus. These plants were formerly included with the *Ophitoglossums*, but Lindley had established the genus *Cochlidia* upwards of fifty years ago. These Orchids should be kept in a cool-house and in a shady part of it, and they must be well drained, for they like an abundance of water during the growing season. For soil use peat-fibre and Sphagnum Moss in about equal parts, pressing it down firmly and elevating the plant upon a cone-like mound above the rim of the pot; but do not use much soil in potting, these plants do not like it, for the species grow generally amongst the erupted lava of the volcano of Tunguragua, from which it was introduced by Mr. Backhouse, of York, little over twenty-one years ago. One or two other plants of great beauty are also included in this genus. "Miss Chisholm," who has caused me to write this article, sends me some fine examples of this species, which shows that she has just the sort of accommodation which the plant requires, may add the following to her collection with the greatest confidence: *C. Ruziziana*, which is a handsome species introduced some two or three years ago by Messrs. Limon, of Brussels, and Messrs. Charlesworth and Shuttleworth, of Bradford, and which has not yet become thoroughly established in our collections. *C. rosea* is another species well deserving attention; it is a little less bright in colour than *vulcanicum*, but everywhere sought after when it was grown under the name of *Ophitoglossum roseum*. The above three species should be grown by all amateurs, therefore; little expense in their culture, they produce long spikes of gay flowers which last a long time in full beauty. MATT. BRAMBLE.

ONCIDIUM LURIDUM.

This is a plant which is widely dispersed over the West Indian Islands, and of which "Mr. J. Rook" sends me a specimen which has rotted off at the base. This I should say arises from excessive moisture with a short supply of air. This *Oncidium* was known to Linnaeus, and has been an inhabitant of our gardens for over seventy years. "J. R." wishes me to state the kind of flowers it bears, but this I would rather not do because the varieties are so numerous that I might be altogether misleading. Suffice it to say, a good variety of this plant is very handsome, and as your friend brought them home personally you must give him credit for having obtained a pretty variety. The plants naturally grow in the shade, and in very hot and damp situations, and therefore require similar treatment when under cultivation, but at the same time they need a good circulation of air. Indeed, this is a point that is quite ignored by some growers; they give any amount of heat and moisture and they exclude air. The plant should be well drained and elevated upon a cone-like mound of good peat-fibre, mixed with Sphagnum Moss. It should be placed in a shady position, and during the summer season have an abundant supply of water. The good drainage before mentioned will quickly carry this away, but in the winter the plant having no bulbs must be carefully watered from time to time to keep the thick leaves from shrivelling. This will be required very seldom, and so that not much water is necessary this time of year, and in giving too much arises the cause of "Mr. Rook's" failure.

COELOGYNE LOWI.

I AM asked by "J. J. Tilley" to give him some information as to the treatment this plant requires to grow it successfully? It is better and more correctly known by the name of *C. asperata*, but it is a beautiful species under whichever name it is grown. The plant was imported just upon fifty years ago from Borneo by the Messrs. Low, of Chaptin, and was named *Lowi* by Paxton, but Lindley had named it *asperata* before. It remained a very scarce plant under cultivation for a great many years. Why that was I do not know, for it is one of the commonest Orchids in the Indian Islands, where it is found growing upon trees in swampy ground in the neighbourhood of streams and also in the shade. Some two or three years ago very large quantities of this species were imported from time to time, so that if the plants were properly treated there should now be an host of grand specimens in the country. Yet my memory does not call to mind many of them. There is one, I know, in Sir Trevor Lawrence's collection, which is under the care of Mr. White. This plant is thriving very vigorously. *C. Lowi* is a strong, hoist-growing plant, with oblong, lanceolate, dull-green leaves, some 18 inches or 2 feet long. It bears a raceme about a foot in length, bearing some dozen flowers 3 in. across, which are creamy-white, having a bright orange-coloured lip, margined with cream colour. The



Flowering spray of Double Pheasant "Lucy Finnis."
(See page 687.)

plant is best grown in a pot, which should be well drained, and as it delights in a little loam a thick layer of living Sphagnum should be placed over the crocks in order to keep the drainage in good, open order. For the compost use a mixture of peat-fibre and Sphagnum Moss, adding a little light loam, from which a greater portion of the soil has already been beaten out. It requires ample pot-room. The plant should be kept well elevated above the rim of the pot in the summer season. When growing it requires an abundance of water, but during the winter months just sufficient to keep the bulbs and leaves in healthy condition will be all that is necessary. In the spring of the year, when the roots and growths begin to appear, the plant, which should have been resurfaced or repotted some time previously, should have an extra amount of water given it. It is an Orchid which enjoys a vast amount of heat, without which very few flower-spikes will be seen; therefore, grow it in the warmest part of the East Indian-house, keeping the atmosphere well charged with moisture. The flowering season is usually in June and July. MATT. BRAMBLE.

DENDROBIUM LINAWIANUM.

This species is an old inhabitant of our gardens, having been introduced some seventy years ago; but it does not appear to have been imported since, for no localities are recorded as yielding the plant. The flowers sent by "T. Murray" are of good size and pleasing appearance, the

sepals and petals being bright cherry-colour in the upper half, passing to white at the base; the lip also is white at the base, tipped with rich magenta. This *Dendrobe* was grown before 1860 under the name of *D. moniliforme*, but when the true moniliforme came to hand from Japan it was found to be a white species and of a very dwarf habit, so that another name had to be found for the Orchid now under consideration, which, indeed, looks more like *D. nobile*, and when grown into a good specimen it is equally pleasing. It is a plant with clavate bulbs, growing some 18 inches high, requiring the same treatment in all respects as *D. nobile*. When the situation that this plant grows in comes to be known we may have some new species introduced. MATT. BRAMBLE.

5347.—**Early Lily of the Valley.**—The only way to get early blooms of Lily of the Valley when there is nothing besides a garden frame to grow them in would be to pot up the crowns as soon as they can be obtained in the autumn. About Christmas get some fresh stable-manure, and prepare it by allowing it to heat a little until the rank steam is thrown off; then make up a hot-bed and place some Cocoa-nut-fibre-refuse or some such material over the manure into which the flower-pot containing the roots may be plunged. Care must be taken to allow the violent heat to subside if necessary, as it can easily be violent enough to kill the plants. Cover up the glass lights with mats or sacking if the weather is frosty. The leaves and flowers grow up together this way; when forced in a strong heat, but without bottom-heat, the flower-spikes have a tendency to come without the leaves.—J. D. E.

5391.—**Constructing a propagator.**—You appear to have grasped the idea of making a propagator very well. Your pan for the water is, however, too deep by half. It should be only 1 inch deep, and then only half filled with water, as the more water there is to heat the more oil you must burn to keep up the temperature. Moreover, the more water there is in the pan the more condensed moisture you will get on the glass, and which you will find troublesome. You do not want a tin chimney to carry off the fumes if you manage the lamp properly and do not allow it to smoke. If the top of the lamp is 1 inch from the pan that is sufficient.—J. C. C.

5366.—**Manures for Cinerarias and Calceolarias.**—For these and most other plants of this kind there is, after all, nothing to surpass, if to equal, a weak clear infusion of horse or, preferably, sheep-droppings given once or twice a week after the pots become well filled with roots, with a very little soot occasionally as a corrective. Failing the above, as good plants as anyone could wish to see may be grown by mixing a proper quantity of Thomson's Vine and Plant Manure with the soil when potting, and afterwards giving weak solutions of sulphate of ammonia and soot alternately every week or ten days.—B. C. R.

—A good compost for these is four parts good loam, one leaf-mould, one decayed manure, and some coarse white sand. Bone-meal added gives a more vigorous growth and finer flowers.—J. D. E.

5341.—**Wireworms.**—Wireworm are the larva of a click beetle; but as there are many species of click beetles, the larva of most of which may be classed as wireworms, it is difficult to say to which species any particular wireworm may belong. According to the best authority the eggs of the click-beetles are of a yellowish-white colour and are very small, almost invisible to the naked eye. The larva grows very slowly, usually taking five years to arrive at maturity, and all these years they are living upon vegetables, working their way into a vital part and destroying much more than they can eat. The wireworm is a terrible pest to both farmer and gardener, and if some one with leisure would devote a few years to the study of this subject and then tell us all about its history, and the best means of getting rid of it, he would be a national benefactor. Judging from the habits of the insects the best means of getting rid of them is to continually harass them by frequently stirring the soil, and by the application of such substance as salt, soot, and lime, freely intermixed with the soil.—J. D. E.

THE KITCHEN GARDEN.

CABBAGE LETTUICES.

THERE are many kinds of Cabbage Lettuces, of which Tom Thumb may be taken as the type, which do not grow more than 4 inches in height, and a large number of heads are produced on a small area. Cabbage Lettuces, on account of their compact growth, are very valuable for winter use, as they can be well accommodated in shallow frames or hand-lights.

SEED may be sown from February to September. The earliest sowing should be made in boxes or pots filled with light soil, and these should be placed in a little heat to germinate, and



Cabbage Lettuce "Large Bossin."

for the seedlings to grow for a time. A very little seed, if good, will be found enough to produce a great many plants. It is a great advantage to keep the young Lettuce plants up near the glass to keep them short and robust in habit, as when drawn up weak and spindly they are useless. Transplant the young plants before they become too crowded, and early in spring a special frame or two may be set apart for them, or they may be grown to a useful size between Potatoes and other early vegetable crops in frames. About the end of March will be quite soon enough to sow the first lot of seed in the open ground, and from that time onward a little seed should be sown every three weeks until the end of September. By adopting this plan

A CONSTANT SUPPLY of succulent produce can be kept up. Those last sown at the end of September will not produce plants of any service that year, but they will winter in the open air if the weather is mild, or, better still, under a little protection, and if planted in a good position in February or March they will produce useful heads before the spring-sown ones are ready for use. These Lettuces will grow anywhere in a rich, well-tilled soil, and in an unshaded position. It is not often necessary to plant a very large number of them in any private garden, as small quantities coming on in succession are the most acceptable. Winter crops do best on south borders, and when the weather is very severe a quantity should be lifted and planted in frames or under hand-lights, or protectors may be put over them where they stand. Of varieties there are many which vary much in size, the larger growing kinds being best adapted for summer culture. Summerhill and Marvel are good kinds for summer, and so is the large Bossin Cabbage Lettuce (here figured), one of the finest large sorts, sent out some years ago by Messrs Vilmorin, of Paris. Early Paris Market is a very fine spring kind. All the Year Round is what its name implies—a good sort for summer or winter. Stanstead Park and Hardy Green Hammersmith are very hardy and excellent kinds for winter use; and there are also several comparatively new varieties that are said to be excellent, and may be worth a trial for the sake of novelty; but the list of well-tried kinds here given are quite sufficient for all ordinary requirements.

Planting Tomatoes.—A few words on the above subject may not be out of place, especially as many people will soon have their plants ready for their fruiting quarters. The universal way of setting plants out is, in my mind, quite a mistake, people in most cases earthing the material up in the form of a ridge.

Thus when feeding commences the roots of the plant never get the full benefit. My idea is that instead of a ridge if a furrow was made, and kept so always, keeping the soil up at both sides, of course top-dressing all over alike; thus whatever you gave to them would go direct to the roots of the plant. A layer of cow-manure night with great advantage be laid in the furrow, washing it in as required.—J. G. PETTINGER, *Harrogate*.

5350.—Making a Tomato-house.—I should say the width of the house must be guided by the length of the lights and the number of them you have. You do not want any glass-lights for the front if you have this 18 inches high. Ventilators made of boards will do in the place of glass. You will require stout posts and cross-pieces of timber along the front and 9 inches away from the wall at back to support the lights, a strip of quartering nailed to the wall, and a 9-inch board fixed to it by hinges, and you have a top ventilator, which is easily worked by a pulley. A house 7 feet high is the least you can have to be serviceable.—J. C. C.

—Supposing that the frames are of the usual 6-feet length, and they are fixed at an angle of 45 degs. (a very suitable pitch for this purpose), with a 2-feet wall in front, that will give a height at the back of about 6 feet 3 inches, and a width from the back wall of 4 feet 3 inches. This will allow of two rows of plants being

grown along the front, and as the height at 1 foot from the back wall will be just over 5 feet, that would probably suffice—that is, if the path could be sunk 6 inches or a foot, so as to obtain more head-room. If you want more height, raise the front wall; if greater width, fix the frames (or rather lights) at a less pitch, in this case also the front wall requiring to be raised. But to make a really good job of it, I should recommend obtaining a sufficient number of other lights 2 feet or 3 feet wide to go along the top, hinging them to the ridge-plank fixed to the wall, and allowing them to fall on to the top of the long lights, these being carried in stout rafters. In this way the width of the structure could be easily increased by 18 inches or 2 feet, and made higher at the back also, with a 2-feet wall in front, while provision is made for ventilation also—a most important point. In any case you should have a 9-inch board hinged along the top, as well as ventilators in the front wall.—B. C. R.

5367.—Length of a Tomato-plant.—Plants of Perfection and Ham Green will often run 10 feet or 12 feet during the season, the seed being sown in early in the year, and the plants kept growing on freely. In a house only 6 feet high the plants should certainly be planted in pots or boxes placed right down on the floor, or even in the ground itself, and not on shelves or stages of any kind. But with such a limited space at command you would find it much more satisfactory and profitable to grow a dwarf or short-jointed variety, such as Field Gem or Conference, rather than those mentioned.—B. C. R.

5359.—Tomatoes in boxes.—Tomatoes are very often grown in orange and other cheap boxes which may be obtained from the grocers. Anything that will hold soil will do; its shape, provided it will hold half-a-bushel of soil, is not of much moment. If boxes have to be made or bought, in some cases it might be cheaper to run troughs the length of the house of sufficient size, say, a foot square, to hold plants from 15 inches to 18 inches apart. This will be cheaper than having separate boxes for each plant, and when not required the boards might be taken down and used to make stages or some other purpose.—E. H.

5365.—Yield of Tomatoes.—Plants of a good strain of Perfection (the selection or "strain" makes a lot of difference) will yield under skilful cultivation from 20 lb. to 25 lb. of fruit during the season, commencing in May and continuing until some time in October; Ham Green, 10 lb. to 15 lb., for though a fine handsome fruit, this kind is very long in growth and does not crop equal to the foregoing. Plants from seed sown the end of this

month should, if grown on freely, commence to ripen the first fruits at the end of May or early in June, and with a due supply of nourishment would continue fruiting until the end of October, at least, and until Christmas, or later, with the aid of a genial warmth.—B. C. R.

5364.—Tomatoes in a greenhouse.—With care it would be just possible to manage young Tomato seedlings and bedding plants in the same house, until the end of April, at any rate. Place the seed-boxes or pans in the warmest place, over the flue or hot-water pipes, until it is well up; then remove them to a shelf near the glass at the warmest end. Do not let the temperature fall below 50 degs. at any time, and as soon as possible draft the bedding stuff off into pits or frames.—B. C. R.

—If you sow Tomato-seed at the end of this month (January), and heat your greenhouse sufficiently to keep the plants steadily growing, the warmth will be too great for your bedding plants. You had better give up the raising of your own plants, and purchase what you want about the middle of April. There are sure to be plenty of Tomato-plants advertised for sale in GARDENING. At that time it will be safe to place in the open air all the strongest of your seedlings, if you protect them at night with a mat. Your house can then be kept warm enough for Tomatoes.—J. C. C.

5366.—Salt for an Asparagus bed.—One pound per yard should not be exceeded, and in some cases half a pound per yard will be enough. Apply it now.—E. H.

5321.—Tomatoes under glass.—The best Tomato for market or any other purpose is undoubtedly Field Gem, and "Tomato Culture for Amateurs" is an excellent book on the subject for trade or private growers. Both are advertised in GARDENING.—B. C. R.

ROSES.

DAMASK ROSE (ROSA DAMASCENA).

In reply to several queries as to old Roses in general, and this one in particular, we may state that it is a native of Syria, from whence it was brought to Europe about 1270 by Thibault IV., Count of Brie, returning from a crusade in the Holy Land. In Syria this Rose is so common that there is a valley called the "Valley of Roses." It is a parent of the Hybrid Red Roses. The Damaska have pale-green leaves (three to seven leaflets), green shoots, with numerous spines, are of free growth, and hardy; the flowers are pretty in form (see illustration) and very fragrant. They need but little pruning. Among the kinds, besides the com-



Damask Rose.

mon one, are La Ville de Bruxelles, La'sa, Madame Hardy, Madame Stoltz, Madame Zouman, and York and Lancaster (true).

Marechal Niel Rose.—Reading from time to time in GARDENING of failures and difficulties in the growing of this splendid Rose, I ventured to send you a record of my experiences. I got a plant several years old about five years ago. It had been grown in a large pot and always proved a failure. I planted it in a well-drained narrow border, composed half of chopped turf and half of old hot-bed, inside a very small "cold house." Last year I cut 250 magnificent blooms from the plant; many when half expanded would not enter the rim of a tureen without a gentle squeeze, and every blossom when half blown down was surrounded

and hidden in glossy-green leaves. The moment I take the last blossom I cut every flowering-rod quite away, leaving only what I may call the stumps or main stems of the Rose. These soon put out new wood in long trailing branches which I tie in 9 inches apart, and the same distance from the glass. By the winter these branches begin to drop their leaves. They are not much shortened, and in spring they flower at every joint. As soon as the flower-buds are plainly discernible I soak the border with weak manure-water. If three blossoms come at one joint I pick off the two side ones. I never have syringed, and have never seen a green-fly on the Rose. I always cut the blooms early in the morning at a point a little past half open; they then keep well in water and open fully in a vase.—J. I.

5369.—**Tea Rose cuttings.**—The rooted cuttings should be removed and be potted off singly in flower-pots 3 inches or 4 inches in diameter. Plant them carefully and keep them in frames or a greenhouse until well established. Good soil for them would be yellow loam, about four parts, one part decayed manure, and one part leaf-mould, with a little sand added; or if leaf-mould cannot be obtained, fibrous peat is excellent for Tea Roses to use in the same proportion.—J. D. K.

— You would perhaps be wiser to pot off the cuttings as soon as it can be determined they have rooted. Use a sandy compost and small pots, giving more substantial soil later on when shifting into larger sizes, or they might be planted out in June next.—P. U.

5361. **White Cluster Rose.**—There are two White Roses which pretty near answer the description you give; these are *Aimée Vibert* and *Mme. Plantier*. The last-named is, I think, the one you have seen, as you say it is almond-scented, and *Mme. Plantier* has certainly a very delightful fragrance, and, as you say, it makes a good standard as well as a climber. It is the only good White Rose that I am acquainted with that is hardy enough to grow on a wall with a north aspect, where it grows and flowers as well as I could wish.—J. C. C.

— Probably *Aimée Vibert* is meant. It makes a good drooping standard. It is a very old Noisette.—E. H.

Single Roses.—In a recent article on Single Roses in *GARDENING ILLUSTRATED* the *Simplex* is not named. It is a very pure White Rose, with a large bunch of orange stamens, the foliage bright-green. In a warmer country I believe it is evergreen. Here it sheds its leaves in the winter.—M. C. B. H.

FRUIT.

THE WALNUT (*JUGLANS REGIA*).

This is comparatively but little planted, a singular fact when the beauty and value of its wood are taken into account. For gun-stocks and much of our finer sorts of furniture Walnut timber is invaluable. Walnuts, moreover, are free-growing trees on almost any kinds of soil, and the crops of nuts which they produce would pay at least the rent of the land on which they



Fig. 2.—Walnut "Late or Jean."

grow, whilst its freehold might be purchased with trees four years of age. Walnuts in a landscape are also trees of mark, their magnificent heads of fine foliage in parks or paddocks rendering them especially adapted for such situations. They associate well with Oak, Beech, Elm, Spanish and Horse-Chestnut, as well as with various other trees, and they do not mix the land more than their companions do. Their smooth glossy leaves are washed clean with every shower, and the foliage is not so thick as to throw the rain off the Grass on the air currents from the surrounding trees, the

branches. There are therefore no trees in park or pasture under which herbage grows better than it does under Walnuts. Besides, Walnuts come into growth late, make their growth quickly, and lose their foliage nearly all at once after the first autumn frost. Thus a chance is given to take the leaves out of the way, so as not to injure the Grass, while the shining dark young wood, with the greyish mature limbs, are left full in view. As to any tree that will grow more quickly into a size to be useful I do not know where to look for it. I



Fig. 1.—Walnut "Large-fruited."

have seen old Walnut-trees that measured from 60 feet to 90 feet in height, diameter of branches from 60 feet to 96 feet, and of bole or trunk from 3 feet to 5 feet diameter, and no doubt larger trees are elsewhere to be found. Considering, therefore, all its good qualities, what can be the reason that the Walnut is not more extensively cultivated in this country? Is it because young folks will sometimes pillage a few Nuts rather than spend their cash in the purchase of French Walnuts? Surely not. That the French grow Walnuts more extensively than we do is certain. They find, too, a ready market amongst us for their Nuts, which had we more trees we might share with them. The cuts here given illustrate the three most popular forms of the Walnut to be found in our markets in their season. Their names are *Large-fruited* (Fig. 1), *Late or Jean* (Fig. 2), and *Heart-shaped* (Fig. 3).

5292.—**Grafting fruit-trees.**—There are several styles of grafting suitable for fruit-trees. Which of these it would be best for you to adopt depends upon the stocks. For example, if you have a few fruit-stocks about three-fourths of an inch in diameter, or wish to work some desirable variety upon a kind in less favour with you, and the wood of which is about the same substance, then I would choose what is known as *sids* or *whip-grafting*. Supposing you wish to work upon a stock which has been formerly by cutting down an old tree, or one, say, over 2½ inches through, then one of the styles of *wedge-grafting* would be best. There are many cases where a healthy tree of an inferior variety can quickly be turned to account by grafting; and I have pleasure in giving a brief outline of the two methods most generally used. *Sids* or *whip-grafting* consists in cutting the stock to as short a point as circumstances will allow, and then paring away about 3 inches of the remainder. You should pare this away in a slanting direction, the smallest portion of the cut being at the lower part. As to the depth of the cut, this must depend entirely upon the size of graft, and it will perhaps make the operation more simple if we prepare the latter at once. The graft or scion should be a healthy piece of wood which grew the previous year. Cut it into lengths of some 6 inches to 8 inches: then take it firmly between the finger and thumb of the left hand, and cut away in a slanting direction from top to bottom. This cut should go right through the graft, and be as nearly as possible of the same length as the portion pared away from the stock. The edges of the graft and those of the stock should be brought into contact; and from this we must decide how deep to pare away from the latter. Avoid cutting either in such a way that the graft

formed, and pare away more or less from either stock or graft until the two fit together. This is most essential, especially at the lower portions. The operation of tonguing is not necessary, but it often assists in forming a stronger union, and also keeps the graft in position until firmly tied. This consists of making a downward cut in the stock, and a corresponding one in the scion, the latter taking an upward direction. When the cut of the former receives the "tongue" of the graft, they fit together firmly, and may be tied over with matting. *Wedge-grafting* almost explains itself. I make two cuts in the thick bark of the stock, and trim the lower part of the graft into such a form as will fit or wedge into the cut. It often happens that the graft is too large round to allow of a simple wedge meeting edge to edge of the two barks. In this case the upper part of the graft is cut away somewhat, and forms a seat, which rests upon the top of the severed stock or branch. This is much easier to illustrate than to describe; but if the main principle of keeping the edges of both stock and scion as nearly as possible together be duly attended to, it matters little in what way this is secured. When tied together firmly we must contrive some means of keeping the drying influence of air from the parts operated upon. Some use a composition of pitch, resin, and tallow; others a little well-worked clay, or any stiff soil of a similar character. If the latter be placed around the graft and stock, and then tied with a second piece of matting, it will answer the desired purpose. Or any stiff soil, with a little Moss around it to keep the whole together, will do equally well. Grafting should be done when the sap is commencing to rise. March is a good month. It often happens that prunings or grafts from a desired kind are severed some month or so before this; but it will not much matter if you stick them in damp soil upon a north border. Endeavour to have the graft a little less forward than the stock; this is easily secured by adopting the above plan.—P. U.

5363.—**Rooting cuttings of fruit-trees.**—I do not think you are likely to strike cuttings except those of Apples, and in most cases these want to be rather large pieces. All Codlin Apples may be increased in this way by taking branches about 2 feet long, and burying 9 inches of the stem in a partially shady place. I have succeeded in striking a few other Apples, notably *Bramley's Seedling*, but they require the protection of a cold frame to shelter them from drying wind and bright sun during the months of April and May, as I found up to that time the cuttings remained without shrivelling; but if left exposed the majority gradually died away. Protected in the way I have suggested, the cuttings retain sufficient vitality to form roots during the summer. Treated in this way the other subjects you mention may possibly grow. You are, however, rather late this season. It would have been better to have put in the cuttings at the end of October. Whenever



Fig. 3.—Walnut "Heart-shaped."

you do the work you must be careful not to allow the soil about the cuttings to get dry for the first year, or they will certainly die.—J. C. C.

5384.—**Pruning Vines.**—It would be rather unwise to cut away all the old spurs and trust to the shoots breaking away from latent eyes in the main stem for a crop. Better trust to the old spurs this year, and start away young roots from the bottom of each Vine, training them over the main stem. Encourage these shoots to get strong, and when the leaves fall prune back to firm ripe wood in the young rod over the main stem, and cut away every-

thing on the main stem as far up as the young rods reach. In a couple of years you will have young rods that will take the place of the old ones, and the latter may then be cut away altogether.—E. H.

5379.—**Heating a vinery, &c.**—A good boiler, well set, and a proper quantity of piping is a decidedly better, and in the end more economical, way of heating a house, or houses, of any magnitude than flues, not to mention the greater safety. But the most economical system of all is a combination of pipes and flues, which if carefully planned and executed, gives the best results from a given amount of fuel. It would certainly be better and cheaper to heat a range of three houses from one boiler and furnace than three, and the labour of stoking would also be much less.—B. C. R.

— When there is more than one house it is certainly more economical to have a hot-water apparatus, as then one fire will suffice. In the case of lines a fire is required for each house. In any case first cost of a hot-water apparatus is greater than that of a flue, but the latter requires more fuel, although it will do with less attention. For myself, for a single house I prefer a good flue, especially when the gardener does not reside on or near the premises.—J. C.

5312.—**Lean-to house for a Grape-Vine.**—You could grow all the three things mentioned in such a house. The *Lapageria* would succeed well, and the best way is to plant it out in the house. Take out a good square of the ordinary soil and make up a peat and turfy loam-heap, thoroughly good soil to form a fine foundation, so to speak, and putting in plenty of crocks in the bottom for drainage. Use also with the soil nodules of charcoal and sufficient sharp silver sand to make it pretty light, as one does not require the compost very heavy. Oleanders you could get also, but they require more warmth to really succeed with them, especially to expand the flowers in fullest beauty. The reason why *Neriums*, as the Oleanders are botanically, do not usually look well, is that they do not get sufficient warmth, and are seldom pruned or repotted. The time to repot is the spring, and when well established in the pots, assist them with occasional supplies of weak liquid-manure. When they have finished flowering, let the soil get rather dry, and cut back the young shoots to about two buds from the old wood, not more. Kithous peat and good turfy loam forms a good soil for them. When good kinds are grown well they are very beautiful.—C. T.

— The *Lapageria* and the Tea Roses will do in the cold-house; but the Oleanders should be kept from severe frost, though a degree or two will not harm them.—E. H.

5317.—**An old Pear-tree.**—I presume the tree to be a standard. If so, it probably wants some of the weak branches cut out of the middle of the tree to let in more light and air. The roots, however, should not be touched. If you find the growth is weak you had better give the roots a top-dressing by laying on the surface half a cartload of rotten manure, spread out as far as the branches extend. It is very unusual for this Pear to bear so freely, so that it is not likely that you will get such a heavy crop for some time. If you do, you had better make an effort to thin them out early in August. A man with a ladder could go over a large tree in an hour or two, and no Pear will better pay for a little extra labour than the Chaumontel when the soil and climate suit it.—J. C. C.

— If the trees bear freely the roots do not require pruning. To increase the size of the fruit top-dress now with manure.—E. H.

5294.—**Cow-manure.**—Cow-manure in a thoroughly decayed state would not hurt the *Rhododendrons*, but if used fresh it would, and it is only when the plants are in poor condition that it is at all necessary. Mr. Anthony Waterer, whose beautiful nursery at Knapp-hill is in a large measure devoted to *Rhododendrons* and American plants, mentions that they may all be said to delight in and to require what is called peat-soil. It was at one time believed that they would not thrive in any other. Experience, however, proves the contrary, and it is now found that *Rhododendrons* and *Azaleas*, which are the most important of this class, as well as any other of the more vigorous-habited plants, succeed in almost any

soil that does not contain lime or chalk. In many sandy loams they grow with as much vigour and luxuriance as they do in peat; in fact, in almost any loamy soil free from lime or chalk may be rendered suitable for them by a liberal admixture of leaf-mould or any fibrous material, such as the parings of pasture land. When the soil is poor thoroughly decayed cow-manure forms one of the best manures for these plants. It is important to remove the seed-pods immediately the flowers have fallen.—C. T.

— *Rhododendrons* do not require fresh or rank manure of any kind. A little old mellow cow-manure will be beneficial to *Rhododendrons*, especially if the plants are strong and old. Leaf-mould would form a better mulch for young plants than cow-manure. Unless much overdone it is not likely they will be killed or injured.—F. H.

CHRYSANTHEMUMS.

NUMBER OF PLANTS TO GROW.

Young growers are often much puzzled to know how many plants they should cultivate with the intention of having a given number of exhibition blooms at a certain date. Many persons think it right to grow a very large number of varieties, although this is all right so far as it is very often carried to excess. It is much better to select a fixed number of varieties suitable for the purpose intended, growing a number of plants of each, than to be burdened with a host of kinds that cannot be relied upon for the object in view. Several varieties are admittedly useful for other purposes than supplying exhibition blooms of the highest quality; but if the production of these is the main point, varieties that do not afford them should be eschewed. I strongly advise all who have not had experience to bear in mind when forming collections that variety may have claims, but not in all cases value. If an exhibitor wishes to stage forty-eight distinct blooms, twenty-four of which may be *Incurved* and the remainder *Japanese*, he should grow at least thirty-six varieties in each section, as all are not to be depended upon to produce what is required. In some seasons one sort is quite useless, whereas the next year quite the reverse may occur. Casualties, too, may happen during the season of growth quite unexpectedly, such as shoots being broken by wind just at a critical period, and other unforeseen circumstances; therefore not less than the number stated should be depended upon to insure success. These should consist of the very best kinds, as nowadays—that there is such a large number to choose from in each section—it is waste of time and space to grow inferior sorts. An exhibitor cannot expect to be successful in such a large class with less than 300 plants, or 150 in each section. In the twenty-four class, supposing them to be half *Incurved*, and the remainder *Japanese*, twenty-four varieties in each section are not too many to grow, and the total number of plants should not be less than 150. When confined to a smaller class of, say twelve distinct, either *Japanese* or *Incurved*, the selection should be more rigid than in the larger classes, as there is not so much margin allowed for an inferior specimen or two in smaller, where all are expected to be of the first merit. Twenty-four names should be chosen, and about seventy plants grown, giving the preference to the very best kinds, of course, selecting those that are known to be the most certain producers of fine flowers. In competing in a class for twelve blooms, either *Japanese* or *Incurved*, the general good quality should run right through the stand, as in such small classes there is not the same opportunity to insert a moderate bloom or two as there is in larger classes. For the benefit of inexperienced growers I append a list of the best twenty-four kinds in each section, and the number of each variety it would be advisable to grow to compete successfully in good company in the open class for twelve blooms either *Japanese* or *Incurved*:—

TWENTY-FOUR JAPANESE VARIETIES.—Three Mlle. Therese Rey (creamy-white), four Vivand Morel (deep-mauve), four Charles Davis (bronzeyellow), four Edwin Melyneux (orimuse), two gold reverse), four Sunflower (rich-yellow), two Avalanche (white), four Florence Davis (white, greenish centre), three Col. W. B. Smith (old gold, terra-cotta shaded), three Etois de Lyon (deep lilac-rose), three G. C. Schwabe (bright-carmine-rose), three William Seward (blackish-brown), four Mlle. Marie Hoate (white, slightly

shaded with blush), four W. Tucker (helicate-rose), four Stanstead White (white), three W. H. Lincoln (rich-yellow), three Excelsior (bright rose-cerise), two Mrs. C. H. Payne (rosy-blush), three Mrs. Falconer Jameson (chestnut-bronze, tinted and striped yellow), three Mrs. F. A. Spaulding (yellow), four Lord Brooke (golden-orange), two Wuhlan (light rose-pink, edged purple), two President Borel (violet-rose), Mme. Edouard Rey (soft-lilac), two Mme. Octavie Mirabeau (white and rose, edged amaranth).

TWENTY-FOUR VARIETIES INCURVED.—Four Lord Leicester (primrose), four Empress of India (pure-white), four Queen of England (rosy-blush), four Gohlen Empress (golden-yellow), three Gohlen Queen of England (straw-yellow, with bronze suffusion), four Alfred Salter (clear lilac-pink), three Princess of Wales (white suffused rose), two Lord Wexley (bronzey-red), four Violet Temlin (purple), three Prince Alfred (rose-carmine, shaded purple), three Jeanne d'Arc (blush-white, tipped purple), four Hero of Stoke Newington (rose-pink), three Mrs. S. Coleman (bright-rose, shaded yellow in the centre), two Mrs. Keales (creamy-white), three Princess Tock (blush-white), two Robert Pittfield (silvery-mauve), two Miss M. A. Haggas (bright-yellow), two Lady Dorothy (pale cinnamon-buff, suffused rose), three Mrs. W. Shipman (fawn), two Mrs. Danier (maukee-yellow, shaded red), two fancy Kendall (coral-red, sport from Violet Temlin), two M. P. Bahant (carmine-rose), three Mrs. Norman Davies (golden-yellow), two Nil Desperandum (orange-red). E. MOLYNEUX.

WHAT TO DO WITH OLD CHRYSANTHEMUM PLANTS.

THIS is a question which is often asked now by a large number of amateurs. With a large number of growers the practice is to take the number of cuttings required for the next season, then to throw the old plants away. Now, I would strongly advise all those who desire cut flowers for house decoration, &c., to adopt the following plan: As soon as past their best cut them down, keeping the roots just moist. A cold frame or cool greenhouse is the best place to keep them until the spring. A plot of open ground should now be manured and dug up roughly, remaining so until April; it should then be levelled down and trodden firm. The plants may now be turned out of their pots, the old drainage removed without damaging the roots, and planted firmly in rows 3 feet from plant to plant, and 4 feet from row to row. As soon as it is noticed that the plants have made a start all the young shoots except six must be removed; as soon as these are 6 inches in height the tips must be pinched out. This will be the means of forming other shoots. Again, one more stopping the second week in July is all that is needed to form well-shaped plants. Each plant ought to have one stake in the centre as a protection against wind and rain. During dry weather a soaking of water should be given; beyond this very little attention otherwise is needed. During October, according to the weather, the plants can be taken up with as good a ball of soil as possible. Should the ground be very dry a good soaking of water should be given overnight. The best grown plants can be potted up, the remainder can be placed close together on stages in a greenhouse, according to room. This plan, though not a new one, commends itself to a large number of amateurs who are away from home during the day. From experience I have found it a first-class means of having abundance of good flowers. Again, if the buds are removed, only leaving one to each shoot, the blooms will come extremely good. It seems somewhat strange to me that gardeners do not grow a number of plants every year on this plan for cut bloom. We have had here upwards of a hundred plants lifted from the garden, placed in a cool greenhouse, furnishing cut blooms by the hundred, many of them were from four to six inches across. As regards the sorts, that is a matter I would leave to my readers. I may say one and all are very good for the purpose. It is not my desire to discourage by any means the cultivators of large blooms. By all means grow on a few plants for this purpose. But after all it is somewhat disappointing not being able or desirous to cut out large blooms for house and other purposes.

FREDERICK BUSH.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of GARDENING, 37, Southampton Street, Covent Garden, London. Letters on business should be sent to the Publishers. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot be obtained, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, suits, and instances vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number in which they appeared.

5100.—Cytisus cuttings.—When and how is the proper time and way of making and striking these?—H. T. M.

5107.—Late Potato.—Will anyone kindly tell the name of a good medium-sized late Potato for a loamy soil, with gravel beneath?—W. Y. Z.

5108.—Hyacinths in glasses.—I have some Hyacinths in glasses. Would any of your readers inform me what to do with the bulbs after flowering? I have no garden.—AMATEUR.

5110.—Lamp for a propagator.—Would "J. C. C." kindly say whether the lamp for a propagator has a single or duplex burner, and, if single, what width of wick is necessary?—H. T. M.

5110.—Eaten Pinke.—My Pinke are being eaten off by something; is it the birds or slugs? Will preventive be I adopt to save them? Will they recover growth this season?—SUSSEXIAN.

5111.—Growing Lilium auratum.—Would anyone please to inform me the best way of growing the Lilium auratum? I intend putting one in a bedroom-window with a west aspect.—AMATEUR.

5112.—Hope on a wall.—I want to cover a high wall with Hope, and they have cut back every year before the new growth starts, or should the old twigs be left for the new growth to cling to?—NOTICE.

5113.—Birds eating Crows.—What can I do to prevent birds eating my Yellow Crows? I have tried three round round sticks, but it spoils the look of the border, and is not very successful.—NOTICE.

5114.—Currants and Raspberries against an iron fence.—Will any of your readers kindly tell me if Currant-bushes or Raspberry-canoe will do well if planted against a galvanised iron fence facing S.E.?—W.V.

5115.—Gladolus seed.—I have sown a quantity of seed of Gladolus gandavensis. I shall be glad if someone would kindly inform me how I can best raise plants from this seed, and how soon they would flower?—ABANDON.

5116.—Maiden Fern and Selaginella.—I want to get up the stock of Maiden-hair Ferns and Selaginella. Should they be grown from seed or young plants bought? I have only a good greenhouse.—NOTICE.

5117.—Pruning Roses.—Will someone kindly tell me how and best to prune the following Roses: Duke of Wellington, Prince Arthur, Abel Carrere, Mrs. Isaac, and Charles Lobbre?—ANNALS, Buffon-on-Val.

5118.—Yellow Carnation.—Will anyone kindly tell me the name of the new Yellow Carnation which is said to be as much larger than Geranium or Frink of Penshurst, and if it is a suitable one for growing out-of-doors?—E. S.

5119.—Winter-flowering "Geraniums".—I shall be obliged for some information about winter-flowering Zonal "Geraniums"—Whether it will be best to cut them down when done flowering? The plants are rather large.—C. F. L.

5120.—Everlasting Peas.—I wish to cover a large railing next summer with a hedge of Everlasting Peas. Will someone kindly inform me when is the right time for sowing in the open, or should they best be raised in a greenhouse?—NORFOLK-RAI.

5121.—Renting a market garden.—Will anyone kindly tell me if a market garden rented on a yearly tenancy from May 15th can be taken possession of by a fresh tenant before the following 1st of May? I think not. Please tell me if I am wrong?—M. M.

5122.—Brown spots on a Ficus.—What is the cause of brown spots appearing on the lower leaves of the Ficus elastica and of their turning a yellow colour? Is there anything to prevent the leaves changing colour, and, I suppose, of their ultimately dropping off?—I. K.

5123.—Management of a vineyard.—I want to start a vineyard, and will be the first and general management of it in our climate in June? It is a loan-in-house located by a lake. Also, how can I get rid of wood-louse, as the house is badly infested with them?—SUSSEXIAN.

5124.—Aster Thomsoni.—I don't see this lovely Michaelmas Aster (as illustrated in GARDENING, No. 755, of September 19th, 1893) in any seed-catalogue that I have. Will someone kindly say where seeds of this Aster are to be procured? Also best time and method of sowing, &c.?—K. A. M.

5125.—Sowing Peas.—I shall be greatly obliged if someone will inform me if Peas sown at the present time in pots require a higher temperature than that of a cellar or unshaded spare room without fire? Also, how long they should remain in the pots, before transplanting?—FRANCAIS.

5126.—Cuttings of indoor plants.—Will someone kindly tell me the best time to take cuttings of the following stove plants: Acacia, Willow and Prince of Orange, Euphorbia jacquiniiflora, Poinsettia pulcherrima, Linum flavum, Allamanda Chelsoni, and Gardenia Fortunei?—IMPROVUS.

5127.—Peach dropping its buds.—I have just begun to grow Peaches. One tree is Royal George, the other Early Rivers. This latter drops its buds instead of opening them; the Royal George doesn't do so. What can be the reason? This hasn't been observed in previous years.—NHS. BARTON.

5128.—An ash-pit.—I have a large diseased ash-pit near a south-west wall, on a fairly stony spot, about 6 feet or 7 feet deep inside. Will anyone kindly tell me to what use I can put this—in particular, whether it would be suitable for a Mushroom-bed, and, if it is, when and how to prepare this?—O. M. C.

5129.—Climbers for a greenhouse.—My greenhouse is 15 feet long, 12 feet high at back by 4 feet in front. I have painted a Gloire de Dijon Rose in the night, at the back wall. What would be the two best climbers to plant on both sides of the Rose, so as to cover the wall and make a show?—A. M. M.

5130.—Setting a coil boiler.—Would someone kindly oblige me with a few hints as to how to set a coil boiler? Also, how should I fix the socket (not expansion joint) pipes to the coil? Size of pipes 3 inches, and coil 7 feet with three water valves. Would it heat a house 15 feet by 8 feet, pipes all round? Any useful hints would greatly assist.—AMATEUR.

5131.—Unhealthy Puchsias.—Would someone kindly inform me what is the matter with my Puchsias as they turn white under the leaves and these then drop off? They make good growth at first, and are seemingly healthy. What can I do to remedy it? I pot them in loam and leaf-mould, and keep them in a temperature of 50 degs.—A. NEW BRUNSWICK.

5132.—Oil-stoves.—I have seen in GARDENING 111 different lines that oil-stoves are used by some people for heating greenhouses, and I have also seen that they use a pan containing water on the stove. May I ask, if the steam from this is a bad thing for plants? Won't it make the leaves shrivel? A few hints on this subject would greatly oblige.—B. E.

5133.—Old Christmas Roses.—I have many old plants of the Christmas Rose, and I find the roots are infested with large yellow grubs about an inch long or more, and coated with a kind of cobweb. Will anyone enlighten me as to the name of this pest, and how to get rid of it? They sap the nourishment from the roots and spoil their blooming.—CHAS. E. LONO.

5134.—Climbers for a window-case, &c.—I wish to know the names of the nicest and most lasting climber and climber to plant in a window-case, having a fountain in the centre with a pan filled with water? And what aquatic plants would be suitable for the basin in which are some gold-fish? I should be obliged for any hints as to their management.—J. K.

5135.—Iron fencing.—I have about 200 feet of iron fencing running on one side of my garden, facing south. The iron bars being about 1 1/2 inches apart. I thought of putting a lot of fruit-trees up here—Pears, Apples, Plums, Peach, &c. Would it be successful? It is certainly the best position in the garden, and it seems such a pity to lose this favoured spot.—T. R. CLEVELANDIAN.

5136.—Tomatoes for market.—I have grown Tomatoes for several years past, and generally found Latham's Excelsior a good sort; but this year, having a few hours nearly lost to Tomatoes, I should like to know what variety would be suitable for the basin in which are some gold-fish? I should be obliged for any hints as to their management.—J. K.

5137.—Pompon Chrysanthemums.—Will anyone kindly give me a list of fine Pompon Chrysanthemums? Not Miss. Deorange and others of that class which are entered in lists as Pompons, but the lovely little button flowers of various colours which flower so profusely in October, and last for weeks when out. I saw a charming list of these this year in the autumn, but could not obtain the names.—HARON.

5138.—Removing Currant-bushes.—A friend of mine took up several Currant-bushes for the purpose of removal, and he dug the ground with the roots exposed all through the large garden. He has offered me several of them, but before filling any space in the garden with them I should like to know if they are likely to be of any use, as the frost was extra severe in this part—viz., Essex?—H. N. II.

5139.—Removing hot-water pipes, &c.—I am about to move my boiler and pipes from one house to another. Will the India-rubber rings again; they have been in use a year? My house is a lean-to against a south wall, the door is at the west-end. I should like the stove at the east-end; but have heard that the draught is better if the stove face be the south. Is this the case, or is it of no real consequence?—G. M. C.

5140.—An unsatisfactory Heliotropis.—Will someone kindly tell me why a Heliotropis growing up the side of a wall, with a copious side of glass, and the root glass, does not succeed? It grew very well until some weeks ago the leaves began to wither and then turn black, and I see the young leaves that are sprouting out are quite black. The wall is next the kitchen, and when it is frosty I keep an oil-stove burning.—M.V.P.

5141.—Climbers for a wall, &c.—Will someone kindly tell me what creeping plants I should plant on a house facing to the north? It is a two-story house, and very high, and I want to cover it up. Would Virginia Creeper grow in a northern aspect, or Ficus virens, or what would flower best? What shall I best plant to cover a wooden paling, about 5 or 6 feet high, in the same aspect? This is shelter. Would Cistaceae do well?—H.S.K.

5142.—A propagator.—In GARDENING, January 20th, page 664, in answer to query 5276, instructions are given for making a propagator. Now, I would like to know, are the seeds sown in the Cocoa-nut-fibre or sawdust, or in a box bed with prepared soil? Also, if I read the instruction rightly, there appears to be only an inch between the two sides of the glass and the zinc tray. Is this sufficient?—A. M. C.

5143.—Currant mite.—Last year I saw an article in GARDENING about the Currant-bush mite. I cut mine down, but I see the young wood is coming just the same again. I have used an insecticide to the bottom of the trees, but the buds seem as large as ever again. I may say my ground has a stony bottom and light soil—what soil there is. But I have used pretty well of cow-manure since I came here two years ago. What shall I do?—GEO. SUBSCRIBER.

5144.—Making a propagator.—I propose to make a propagator on the lines laid down by "J. C. C.," but different in size—viz., 1 foot 8 inches by 1 foot 6 inches. Would not the perforated zinc require support, as I want it for pot forcing, and is not a tank better than an open tray for the water? What size lamp should I get, and ought the box to rest squarely on the ground, or should a space be left for air? What depth should the box be?—AN AMATEUR.

5145.—Plants for a narrow border.—I should be very glad of suggestions as to what I can plant in a border 1 foot wide. The border is over 100 feet long in front of a brick wall, which is covered with Ivy. Bedding-out plants are troublesome and expensive. I want something that I can plant to remain permanently, and, if possible, look well most of the year. Ferns would project too much, as there is constant traffic on the walk.—CAROLINA A. OATES.

5146.—A flower-garden.—My flower garden is made up of two plots, with five beds—each. The middle beds are round shape. I intend planting two beds of the outer ones with Scarlet "Geraniums," the other two with Turquoise Stocks, of one plot. Two of the next plots with Painted Lady "Geraniums," and two with Yellow Calceolarias. What would be the best annuals to put in the middle beds so as to make a show from July? I would like the centre beds to be a little higher than the others.—A. M. M.

5147.—Growing Tomatoes.—I propose to grow them on the following plan: To make a box 12 feet long, 12 inches wide, and 12 inches deep on front stage of a greenhouse, or would it be better to grow them in 10-inch deep pots? If in the last, should I have to bore holes in the bottom, and, if so, what distance apart? Also please name a few of the best sorts for setting their fruit and for profit? Also when to sow seed, as I have no artificial heat? I intend growing them on the single-stem system.—AMATEUR.

5148.—Pyrethrums, single and double.—Wishing to make a small and choice collection of these, I have consulted a number of catalogues, where I find a good many, although differing in name, are described as of the same colour. I am therefore at a loss to know which one to choose in any particular shade. I want only those possessing the largest and best formed flowers in their respective shape or colour. Will someone who has had the advantage of examining good collections of the older and newer varieties help me to make a selection?—HOBBS.

5149.—Growing Peas.—My garden will not grow Peas well. Not more than half of the seed sown comes up, although it is well protected from frost. Some of the seeds are apparently eaten by a small thread-like worm. The soil is moderately light and good. I sowed a great deal of night soil has been put on it in the past. Will someone kindly tell me if lime would be of any use? If so, whether it would be too late to put it on now, and what the quantity which should be put on each rod of ground? I should also be glad to know if manure should be put on as well as lime? The ground has not been manured this winter.—J. P.

5150.—Heating a greenhouse.—I last autumn had a greenhouse put up 21 feet by 10 feet. I had two rows of hot-water pipes, 1 inch flow, and return along one side and one end. I had a boiler, but no water apparatus, but the fireplace is so small that one cannot get much fuel in, not enough to last all night. I find also that even in the daytime, when I am about my work, I can barely keep it up to 10 degs., and at night with an oil-stove burning the temperature of the house goes down nearly to freezing point. Could you tell me what to do? Ought I to have a larger boiler and more pipes round the house, or would a larger boiler be enough?—E. B.

5151.—Persian Lilacs.—According to advice in GARDENING I potted up in October a sturdy little Persian Lilac (white), which has flowered three seasons in the garden. The pot was covered with leaves and placed in a sheltered position out-of-doors until Christmas, when it was removed to a warm-house, well syringed daily, and had every care. The plant is growing nicely, but instead of the wealth of bloom which I had hoped for it has developed nothing but leaves, with the exception of one or two flower-sprays at the ends of the new wood. The bushes grown on in the garden are now covered with numbers of plump flower-buds. Will anyone tell me the cause of this? I thought that the flower-buds were formed in the summer, before the fall of the leaves; if so, what has become of them?—HROX.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

5152.—Compressed Sphagnum blocks (W. H. Binks).—No, I cannot inform you, as I know nothing of them.—M. H.

5154.—Cattleya citrina (E. E.).—This plant may be grown with Odontoglossum, and it should be watered a trifle warmer, and be kept dry at this season.—M. B.

5155.—Crotid book (H. H.).—The book you refer to is not mine, and it is doubtful if ever you will see mine now, as it has been sold to incorporate with another work.—M. B.

5156.—Adiantum Capillus-venere (G. H. Ward).—You cannot do better than to pot it in a mixture of peat and sand, and half a pound of peat in a sandy, having some broken brick-bats mixed with it.—J. J.

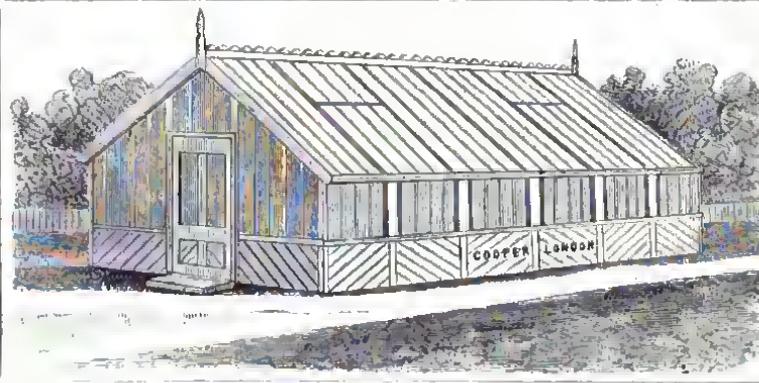
WM. COOPER'S NEW YEAR'S GIFTS

FOR EVERY READER OF THIS PAPER.

IMPORTANT.

I RESPECTFULLY beg to inform all readers of this paper that the Second Edition (100,000 copies) of my Revised PRICE LIST, consisting of 400 pages, and about 1,900 Illustrations, bound in cloth, is now ready. I shall have much pleasure in forwarding to every person up to February 10, 1894, one post free, after which the price will be One Shilling each, post free. This list is the most complete in the Trade, and has cost several thousand pounds to produce.

A FEW OF THE MANY HUNDREDS OF



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PRESS NOTICES

COOPER'S HORTICULTURAL BUILDINGS AND APPLIANCES.

We have received from Mr. William Cooper, the well-known "horticultural provider," of 755, Old Kent Road, London, S. E., a very complete, lavishly illustrated, and excellently printed catalogue of garden edifices and goods manufactured and sold at his works and emporium. We commend all our readers who possess gardens, and are properly interested in them, to undertake a pilgrimage to South London, and there inspect Mr. Cooper's show-ground and stock, and obtain a catalogue, if the issue thereof be not by that time exhausted. It is the most complete catalogue in that line possible to be conceived. "Who loves a garden loves a greenhouse also," wrote the poet-author of the "Task," and any requiring one of these—Mr. Cooper's express specialities—will find a varied selection of about 500 houses at the show-grounds adjacent to the manufactory in the Old Kent Road. Space fails us to even barely enumerate the departments embraced in this catalogue. Suffice it to say that anything and everything required for gardening is to be found in Mr. Cooper's large and varied stock.—*Carpenter and Builder*, Nov. 24, 1893.

HORTICULTURE.

Mr. William Cooper, the well-known horticultural provider, of 755, Old Kent Road, has just issued a voluminous catalogue of the goods he manufactures and supplies, which cannot fail to be useful to horticulturists, &c. Mr. Cooper believes this catalogue to be the most complete in the trade, and as it consists of nearly 400 pages we can quite believe this to be the case. It is priced at a shilling, and is cheap at the figure remembering the amount of useful information it contains.—*Buckley Heath Observer*, Nov. 11, 1893.

Mr. Wm. Cooper, horticultural provider, 755, Old Kent Road, London, has been good enough to send me his new illustrated list. It is a very handy book, and I have no doubt that Mr. Cooper is justified in claiming that it is the most complete in the trade. It would be a hard task to think of anything connected with the business which is not mentioned here, and the book also contains a mass of information about many other matters, for in it you can find prices and full particulars of hundreds of things, ranging from piggeries to tennis and cricket pavilions, from tobacco-juice to mission churches.—*Advertiser*, Nov. 23, 1893.

RECEIVED.

A REMARKABLE CATALOGUE.

We have received from Mr. William Cooper, 755, Old Kent Road, a copy of what must assuredly be the completest horticultural trade catalogue ever issued. Nearly 400 pages, containing 1,200 illustrations and an immense amount of closely-printed matter, afford descriptions and prices of everything which can be wanted in the garden, conservatory, and forcing-house, alike by the professional or the amateur. The prices appear to be exceptionally moderate.—*St. James's Gazette*, Nov. 21, 1893.

Mr. W. Cooper, horticultural provider, of 755, Old Kent Road, London, has transmitted to us a copy of his illustrated catalogue, which is as fine a work of the kind as any we have hitherto seen. This widely-known manufacturer of almost every description of horticultural production bids fair to make himself unrivalled in elegance of design, adaptability to purposes, and general excellence of workmanship. We should advise all horticulturists to apply for this catalogue, and give a trial to some of Mr. Cooper's excellent manufactures.—*Weekly Herald*, Nov. 17, 1893.

It is the most complete catalogue of the kind we have ever seen.—*Buckpool Advertiser*, Nov. 17, 1893.

WHAT MY CUSTOMERS SAY—

5, Hanging Birch, Rhodes.

DEAR MR. COOPER,—It is with very great pleasure that I write to inform you that I have received your valuable books all right, and I scarcely know how to render thanks enough to you for them. I am certain it is a great prize for me to receive such nice books as the two you have published, they are fit to be placed in the library, as they are so nicely bound and well printed. I could never have thought they would have been like they are; and I was very much surprised when I looked through them and saw that they contained so much and so interesting reading, as well as the engravings. I may say that I shall do whatever I can to spread your name in Lancashire, as well as give you an order or two. You are very well deserving of it I must say, and my friend thanks you very much for the one you have sent him through my name. Trusting that you will ever prosper in your business and do well, with regards, from yours truly, from Rhodes, Lancashire.

WM. BENNETT.

The book is by far the most complete of its kind we have seen, and its contents have a very wide range, from the handsome conservatory costing hundreds of pounds, to the smallest article of the value only of a few pence.—*Advertiser*, Nov. 18, 1893.

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WILLIAM COOPER, 747 to 755, OLD KENT ROAD, LONDON, S.E.

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ROSES.

PRUNING ROSES.

Now if we continue to experience mild weather, many readers of GARDENING will soon be thinking about pruning in the rosery. The best time for this operation varies so much, both on account of the season and extended area the Rose is now cultivated over, that no absolute rule is safe. Still, I would like to give a few notes of a general character, and to present them early enough to be of service to those who would be otherwise pruning earlier than my experience has proved advisable. My residence is in a warm southern county, but even here I do not prune until March—and quite the latter end of it. H. Perpetuals and H. Teas may be pruned then, but I would strongly advise leaving the Teas and Nisettes, also the Chinas and Bourbons, for a couple of weeks longer. If my readers who are anxious to get the best results, and have not had considerable experience in the pruning of Roses, will give a little attention to these dates, and at the same time bear in mind the relative position of their garden with my own, they can form a good idea of what will be the most suitable time for their own. I frequently leave mine a fortnight later than the time stated. Another most important point when pruning Roses is to be fully decided upon the following: Are we to have quantity at the expense of quality, or shall the two be combined as far as possible? Then there are two distinct styles of pruning, and although I have frequently touched upon both in my replies to queries it may be well to give a brief repetition in these notes. Perhaps I cannot do better than name a few varieties typical of those which need a specific class or style of pruning. Dullness of Belford and Abille, Bonair from the H. Perpetuals; Lady Mary Fitzwilliam and Comte Henri Rignon in the H. Teas; with Souvenir d'Elise Vardon and Comtesse de Napoléon out of the Teas, may be taken as an example of

MODERATE GROWERS, which always need rather severe pruning. These generally produce from one to four stout shoots from the base of the plant towards the latter part of each season. Let these be cut back to within a foot or so, and the rest of the growths thinned out, leaving a few of the stronger shoots about 3 inches. We now advance to

FREE GROWERS, of which I may cite General Jacquemont and Fisher Holmes, La France and Vicomtesse Folkestone, with Marie Van Houtte and Mme. Lambert as representatives from the three chief classes. In this case much depends upon the size of the plants. If large bushes, then commence by thinning out the centre and weaker shoots; next trim back the remainder to a length of 6 inches to 2 feet, according to the size and number of the shoots, the stronger shoots being less severely pruned than the others. In case of a very old plant, do not fear to put the knife into it pretty severely, especially towards the centre, if the wood is not so healthy young wood to break lower down, and so remedy much of the bareness we frequently

notice at the bottom of some old favourites. The third class are

VIGOROUS GROWERS, like Duke of Edinburgh and Gabrielle Luizet from the H.P.'s, with Gloire de Dijon and Marechal Niel from the Teas, and such vigorous climbers as the Banksians. These do not need spring pruning so much as summer. We invariably get better quality and quantity from the extra stout growths of the previous year, therefore it behoves us to secure as much of this as possible. Seeing that the wood which has once bloomed is of little future benefit, it is better to remove it directly the crop of flowers has been realised. Generally speaking, these varieties are grown in beds or against walls. In either case we secure a greater quantity of bloom upon half of the amount of young wood when compared to that which bloomed the summer previous. The quantity and uniform show of bloom is also much heightened by training the growth in a horizontal position. In beds the plan is to peg it down to within a foot of the ground, or a few of the stronger branches may be allowed to arch over with their own weight of bloom and foliage. Upon walls it is easy to nail them in a slightly slanting position even if not horizontal. Always thin out the weaker wood from these strong growers as a first operation, and then simply remove the immature points. Finally, one had much better be a little late than too early in pruning Roses.

MOSS ROSES.

THESE are general favourites, especially as coat flowers; but although we have a large number of varieties, those really worth growing may be reduced to six. The Common Moss is one of the oldest Roses known, and was cultivated in this country as long ago as 1590. A pale-rose, with beautifully-crested sepals, this is still one of, if not the best variety. It must not be confused with the Crested Moss (or cristata), sent out by Vibert in 1827, but I fear a good many have been distributed of both kinds and under both names. The latter Rose is much the same in colour and habit, but more heavily mossed. It is really a crested form of the old Cahagne or Provence Rose, and is larger and more glolular than the common Moss. However, they are both very good. Blanche Moreau is by far the best White Moss Rose we have. By-the-way, the raisers of this grand variety (Moreau et Robert) would seem to make a speciality of the Moss Rose, for I note they claim no less than forty among a list which is just to hand. There seems to be a firm of Moreau et Robert, and one of Robert et Moreau; also two separate firms of Robert and Moreau, all of whom make the Moss Rose a speciality. But we are bound to say not with any great success, so far as sterling novelties are concerned, if the quality of fresh introduction is considered. Colina is a deep-crimson, with purple shading, very free blooming, and one of the best dark varieties. Baron de Wasseraum, a light-crimson, and Quatre Saisons Blanche, a perpetual-flowering white of the same form, will complete our list of the best. The two varieties bloom in clusters. There is a new Moss, Zenobia, sent out by W. Paul and

Son, which promises well; but it is large, and to my taste size detracts from the beauty of a Moss Rose. P. U.

5417.—**Pruning Roses**.—Prune the Roses mowed towards the end of March, according to the weather. If the season is early prune early; if late delay the pruning till the end of the month. Cut out old unhealthy wood, if any; small weakly shoots which cannot produce blossoms should also be cut out, and the strong shoots from which flowers can be obtained should be shortened back to from 6 inches to 10 inches, according to strength. If a few very fine blossoms are required cut in a little closer. —K. H.

—The five varieties you name may all be pruned early in March. The two first are not quite so strong growers as the last three, and will be better if pruned a little harder. If you have any healthy growths over four feet, I would peg them down and so secure bloom from almost their whole length. When pruned, such growths only produce two or three blooms, whereas the other method will secure ten or a dozen. —P. U.

5301.—**White Cluster Rose**.—I think the Rose you describe is the White Banksian. The already sent this Rose very well, so, too, does the description you give of its buds and foliage. There is a variety among the Ayrshire Roses called "Aubrey" and "Myrtle-scented" which might be it, or Alcege Vibert from the Nisettes. You see, it is difficult to say exactly without seeing a portion of the plant. —P. U.

2578.—**Wireworms**.—I am afraid I cannot help you much in this case, as you appear to have a good quantity of the mould to deal with. If you only wanted a little for potting purposes you might put some of the mould in a hot oven and bake it, which would kill the insects, or you may spread it in the ground and pour boiling water over it to get rid of the enemy; but you would hardly care to deal in this way with enough of the mould for a Potato-bed. The frost will certainly not kill them if you do as you propose. I would not willingly use the mould in its present state for any purpose in the garden. You had better make up a slow fire in one corner of the garden and char the whole of it. There is no better plan of getting rid of the wireworms. Are you sure that the insects are what you suppose them to be? The wireworm is nearly an inch long, light-brown in colour, with a very tough skin. —J. C. C.

5418.—**Yellow Carnation**.—I suppose you refer to "Pride of Great Britain," which is being sent out by Mr. T. S. Ware, of Tottenhain. I have not tried it outside yet. —B. C. R.

—A very large-flowered Yellow Carnation is named Pride of Great Britain. It is quite a Malmaison in character, large, and deep-yellow in colour. Unfortunately the calyx splits a good deal, but this is a failing of many kinds, especially those of such large size as this. I have only seen it in the greenhouse, where it is a strong-growing and free-blooming variety, but possibly it would succeed in the open. It can, however, scarcely be classed amongst

ORNA TAMPAIN

GARDEN WORK.*

Conservatory.

A sweet, humid atmosphere is essential to the preservation of plants in bloom, especially those which have been forced or pushed on by stimulants. This involves regular, steady fires at night and during damp, cold days. On bright mornings damp down the fires, and push in the shutters early, or else let the fire go out altogether and refresh in the afternoon. Sometimes, at any rate, this should be done in order to give the furnace a good clean out. Ventilate at every favourable opportunity on the south side of the house, but avoid cold currents, or the flowers will soon fade. See that there are no very dry spots in the borders where climbing plants are growing. Creepers and climbers which were pruned in autumn are now breaking strongly, and where the shoots are crowded some should be rubbed off before the growth gets into a tangle. The pruning of growing plants should be done when the finger and thumb can slip out the terminal bud. Nearly all plants are benefited by pinching in the leading shoots during growth to give symmetry. To keep growing plants in good condition, they should be frequently turned round, especially in this necessary in hothouse plants. Insects will have to be reckoned with now. The most troublesome at this season are greenflies. Where they come from in such immense numbers often puzzles amateurs, but half-a-dozen flies will stock a large house in a very short time, and to keep the house clear, an occasional fumigation should be resorted to. If no flies are visible, we may be sure a few specimens will be hidden away somewhere. *Aspidia* are very beautiful now. *A. arnosta* is a good kind for these who have only room for one or two. It multiplies readily to pot culture, and is very easily managed. After flowering is finished prune into shape, and about June or early in July place out-of-doors to ripen, and in February and March the plants will be removed and given to the garden. Cuttings of the half-ripened young shoots will strike under a bell-glass in a shady part of the house in early lean and leaf-mould. But always in using bell-glasses in propagating let the inside of the glasses be wiped dry every morning. If this is not done the condensed moisture will cause the cuttings to damp off. When the flowers of *Aspidia* fade remove the flowers and seed-pods at the same time. Nothing weakens a plant so much as producing seeds. Cuttings of water-flowering *Saxifraga* are just now in a little heat. If a few cuttings are rooted most of the old plants may be thrown out, as young plants may be grown into large bushes in one season, especially if planted out in some open situation, and the leading shoots pinched occasionally. On the other hand, old plants of *Eupatorium odoratum* may be kept in good condition for years if pruned hard back after flowering and planted out in the first week in June.

Forcing-house.

Very high night temperatures are not, as a rule, desirable, and the thermometer raised but a few degrees above a high night temperature is an open one, and must be regulated according to the subjects dealt with. At this season very few plants are improved by a higher night temperature than 55 degs. Growth, or rather elongation, takes place chiefly at night, and when the night temperature is moderate, high, the shoots are long-jointed and weakly, and though growth may appear rapid, it really is not so. Cucumbers and Melons will do very well in a night temperature of 55 degs., and no harm will be done if the thermometer falls to 60 degs. at sunrise. It is far more important that the growth should be strong and firmly put together than that it should be merely lengthened out. With the increasing daylight more work will now be done under glass, and where a miscellaneous selection of plants is being forced, much care is required to keep everything moving along in its proper direction. Hardy plants intended for forcing should be established in pots, and should receive the first impulse in a lower temperature than the forcing-house. A fire at work may help on many things, and when the sap has been set in motion a shorter time in the warmer house will suffice for bringing out the blossoms. The forcing-house at this season will always be full, but it should not be unduly crowded, and some space should be taken for every plant having an occasional fumigation with Tobacco should be given, so that greenfly or thrips never get a footing therein.

Unheated Greenhouse.

Double Wallflowers and White and Scarlet Intermediate Stocks are among the sweetest things for the cold house in spring, and may easily be grown to decent-sized specimens in 5-inch and 6-inch pots. The seeds are usually sown in July, and the plants grown steadily on in the open air till frost comes, and then sheltered in a cold pit or in an unheated house. Bulbs at this season are very often well done in a cold-house by the use of paper covers on very cold nights. Hyacinths, if the wood has been well ripened, will do very well without fire-heat, and though early flowers may be retained in a warm-house, the later blossoms are none the less appreciated. Very sweet are most of the *Rhododendrons* from the higher regions of India, and many beautiful hybrids have been raised from these which can be kept quite safely in the cold-house. The *Trojan* species are almost too tender for full exposure in any but sheltered districts, but they are charming for the cold-house, and after the growth is a little hardened they may be plunged outside.

Cucumbers in Frames.

The present is a good season for making hot-beds for Cucumbers. The manure must be frequently turned and intermixed till it is rankness is drawn out. Where three beds are plentiful, a free admixture of these with the manure will absorb dangerous gases, and the bed may be made up with just one turn over. Beds for Cucumbers must be well put together, and should extend at least a foot on all sides inside the frame. It often pays better to buy the plants when the bed is ready than to raise them, as time is gained thereby. The Chamber frame is generally used at the beginning to bring forward early plants besides Cucumbers, and when this is so, special

care should be taken not to introduce any plant likely to be infested by insects. Green-fies in a Chamber frame, if not checked as soon as possible, must do harm, because the means adopted for their destruction are often injurious to tender leaves.

Orchard-house.

The buds of Peaches and Nectarines are now swelling even in cold-houses, and some of the early kinds are showing colour. Ventilate freely, but avoid cold currents. All inside borders must now be in a fairly moist condition, and the trees in pots must be carefully examined every alternate day. Thus will do very well with Peach, but Peas and Apples should be kept in a house by themselves. Apricots are not, as a rule, so good in a mixed house as when in a department can be given up to them. I have seen splendid crops of Apricots grown under glass, and the trees do best planted out, and the ventilation must be as perfect as possible. Anything in the shape of a dudness is fatal to the Apricot blossoms.

Cold Frames.

There are now very spare frames at this season, as they are usually filled with *Violas*, *Calliflores*, *Strawberries* waiting for forcing, *Calecularia* cuttings, *Veranicas*, *Andreas*, &c. As regards the latter everything in the nature of dry should be renewed promptly, and a light top-dressing will be useful, as the plants will soon be showing flower.

Window Gardening.

Moss will now be very prominent. A little green Moss over the soil in the pots gives a neat appearance without doing harm. Tullips may be taken out of the pots, if required, and planted thickly in vases or jars in Moss ashtray. The Blue Scilla and the *Chionodoxa* will do well under this treatment. Cut down heavy plants of all kinds, and put in cuttings.

Outdoor Garden.

Thick beds of Lily of the Valley may be thinned now by cutting out pieces 6 inches wide at suitable intervals, the pieces taken out to be re-shed and planted elsewhere, or the pieces, if lifted carefully, may be forced in a frame, and when the flowers have been gathered the roots may be planted out. The hot-bed system of forcing Lily of the Valley is a cheap and expeditious one when the clusters of young ones are four or five. The bed is made up in the same way as one would make up for *Asparagus*, *Potatoes*, or French Beans. The clumps of Lily roots are placed close together on a layer of soil on the bed, and the intervals between the clumps are then filled up with fine light soil, but should be chiefly used. A soaking of warm water through the root soil so often all down. The frame is matted up till the lilies begin to move, which will be in a short time. Now that the lilies are running through, the borders should be forked over to open up and sweep the soil, and a general water-bath of these fibrous plants are established with old manure in autumn, and where this has been done the manure will be tacked in. But where no manure has been used, a top-dressing of some kind can be given if necessary, and many flowering plants require more liberal treatment than they receive. Many of the large overgrown roots of herbaceous plants will require dividing. Coarse-growing things should not be allowed to overshadow plants less robust in habit. There is generally some little work of this character to do every spring. Lilies of the Marston and their species may be planted. It is better to plant in good-sized groups than to put in single bulbs. Plant three inches deep, and mulch the surface with old cow-manure or leaf-mould.

Fruit Garden.

I have no doubt there is still some fruit-tree planting to do. It is better, at present, to plant earlier, but we are all more or less the victims of circumstances. Either the soil has not been ready or some other cause prevents the trees being got in at the best time, and therefore the work has been delayed. But I would rather plant in March than leave the work till another season, as though no great progress may be made, the trees will be making roots. There is some difference of opinion as regards cutting back young trees after planting. Those young trees which are planted in the autumn should be cut back to 3 feet at the top of the heads, and the cultivators leave the cutting back of late-planted trees till the following autumn; but all trees planted before the end of November should be cut back the following spring. This only refers to young trees which are not well furnished with branches. I have bought trees which have not required cutting back at all after they came into my hands, simply because they had been cut back in the nursery, and had formed well-balanced heads, well furnished with branches. Some people start with the idea that all trees from the nursery must be cut back, and mistakes are often made which throw back the work of the trees. Aelous may be started in hot-beds now if there is likely to be plenty of manure. Head back any trees intended to be grafted, and cut off succulent grafts and lay in under a north wall or fence. The orchard-house should be put into condition for starting. Even without fire-heat, Peaches and Plums under glass will be on the move.

Vegetable Garden.

Rhubarb may be divided and new plantations made. It is usually advisable to cut the roots up too small, unless stock is very scarce. Plant in rows 4 feet apart, and make the soil deep and rich. Strong-growing kinds like the *Victoria* should be allowed more space. Six feet between the rows will not be too much. I was talking to a Rhubarb grower near a large town some time ago, and I think, from information received, that Rhubarb, when properly managed, pays better than most things. Where there are glass-houses or rough pits warmed with manure, Rhubarb may be easily forced. The second crop of an early variety sheltered with pots or tubs comes on very quickly at this season, and after the plantation is once started it does not need much to keep the plants in good condition. The roots lifted are usually cut up and used to make new plantations. It is perhaps difficult to say which is the most profitable early Potato. *Majestic* and *Beauty of Bolton* are largely grown in some districts. They are heavy croppers, and the quality when cooked is good. The old *Admiral*, when true, or a good selection from it, comes in very early, and the tubers are well adapted for forcing. Carter's *First* has been highly spoken of. It is time, generally, to start potatoes, to get *Potatoes* planted in each district, to get

apart, where it will be possible to shelter them on frosty nights. Plant *Shallots*, *Underground Onions*, and *Garlic*. *Chives* also may be divided and replanted. Make new plantations of *Horseradish*. Make holes with a crowbar on well-prepared ground a foot or so deep, and drop the sets in. E. HOBAY.

Work in the Town Garden.

It is a pity that Amateurs do not thrive better in town air; they are so pretty, free, and generally useful. They can now be well seen from the London suburbs, and planted in a border or large box, or even grown in good-sized pots in a warm-house. Amateurs bloom profusely all the winter through, and, indeed, almost all the year round. In a smoky atmosphere the plants grow fast enough, but only produce a few straggling blossoms in July or August, and hence are only of use as foliage plants. The late-flowering kinds of *Rosa* are now in full beauty, and are most useful as cut-flowers as well as pot plants. These are far better town plants than the *Roses* or *Hydrangeas*. The young shoots of *Rosa* about 2 inches long will strike almost as freely as *Andreas* in well drained pots or pans of sandy loam and peat; and young plants so obtained will, if grown in freely, make nice flowering stuff in 5-inch pots by next Christmas. The old plants may be potted up into large sizes, and in this way soon make large specimens, which are far more profitable for cutting from than small plants. The growth must be persistently stopped at the second or third joint until about the end of July, or the plants will flower profusely. Begin striking the cuttings of *Zonal* *Variegatum* ('*Geranium*') as soon as convenient now; they root best standing in or near a hot-water pipe or warm fire, and with very little water after the first watering in until roots are formed, when more must be given. Plants struck now and potted in 5-inch or 3 1/2-inch pots in April will make nice stuff for bedding or for shading window-boxes in June. Six seeds of *Lobelia*, *Hollyhock*, *Veronica*, and *Delphinium* at once - that is, where a temperature of 55 degs. to 60 degs. can be maintained, otherwise better wait another month or so; but it is better to sow early if possible and let the plants take their time. Petunias are grand things for town gardens, especially where the soil is light. Now also seed of *Nicotiana glauca* to bloom in the summer. R. C. R.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary from February 10th to February 17th.

Several seeds of various subtropical plants, including the Purple-headed *Caster Oil* (*Gillettia*), *Araya* (*Andropogon*), *Ferdinandia* (*Conium*), and the *Variegated Tree-Mallow*. They will be brought on in the hot-bed till well established, divided a lot of *Cammas*, and potted the roots to start them slowly for planting out in May. I have sometimes divided them when planting them out; but, on the whole, it is better to divide now and bring them on slowly in the late Peach-house, where the growth will be rapid. If planted in sheltered places and well supplied with water, such tropical plants soon make progress. A few things may be raised from seeds besides those named above. I have used *Solanum* in variety, including the Silver-barked variety, *Solanum marginatum*, which makes a very ornamental group. Thinned Grapes on early Vines. Disbudded Peaches in early houses. Thinned off some of the Peaches which have set thickly on the underside of the branches. Fumigated Rose-houses as green-flies have made their appearance on the young shoots and flower-buds. Started a new plantation of *Horseradish* in a trench made in a piece of recently trenched ground with the crowbar a foot or so deep, a piece of root with a crown attached is dropped into each hole, and a little fine, rich soil is rammed in. During the summer the crown will work out through the hole and form a long, straight, root-stock. Always when digging *Horseradish* the crowns are saved for planting. Sowed *Chionodoxa* and *Hyacinth* seeds, also seeds of a good strain of *Tuberosa Bergonia*. Potted out *Thymus* and sowed more seeds, sowed more *Tulip*-seeds, and sowed those bulbs previously potted for forcing-house. Some of the bulbs potted now will be kept in a root-house for late flowering, and a further batch will be potted after this for autumn flowering. They may be grown during summer in the open air and taken indoors to bloom. When wanted for cut-flowers only, the bulbs are grown in a 5-inch or 6-inch pot. Potted off bedding plants, including a lot of autumn-struck *Geraniums*. Put in autumn cuttings of *Scabry* and *White Geraniums*, also a lot of good named *Zonal* for pot culture. Started on *Pandanus* struck last August, and which have been growing steadily all winter. The spring-struck stuff cannot overtake these, and for early bedding cuttings are always struck in August. Sowed *Celery* in boxes, white and red. Potted off *Lobelia*. These are always sown in autumn, and then they get strong enough to be forced. Cleared out a few *Asparagus* roots which had been forced. Placed in the frame a little fresh loam to mix with the lighter soil in which the *Asparagus* had grown, and planted the frame with *Asheley Potatoes* which have been started in pots for the purpose of filling frames as they become vacant. Sowed a collection of *Hollyhocks* in boxes and placed in ainery to start the seeds. The strongest plants will flower in the late summer if helped on in a bin. Sowed a number of *Spergularia* *Freemans*; eighteen bulbs in 5-inch pots, where nearly struck and produce good specimens, and makes some effect in the conservatory. These plants have had no forcing beyond protection from frost in a cold frame house.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruits and vegetables for drawing. The drawings so made will be engraved on the best material and will appear in due course in GARDENING ILLUSTRATED.

* In cold or northern districts the operations referred to in under "Garden Work" may be done from ten days to a fortnight later than in the south, and with similar results.

ORCHIDS.

DENDROBIUM PIERARDI.

In reply to "B. S. R.," "Surreyite," and others, this Orchid is named after M. Pierard, a Frenchman, who found it, and by whom it was introduced into the gardens of England. It is a common plant in India, being widely distributed throughout that country, but it is particularly common in the forests in the Sunderbunds of the Ganges, from whence it was originally imported. Hence, as may be supposed, it requires strong heat and abundance of moisture in order to produce strong growths, and I have frequently had this plant produce stout stem-like pendulous bulbs some 5 feet or 6 feet in length. When fully grown the plant should be dried off and kept considerably cooler than during the summer. This will speedily cause the bulbs to swell up, and the leaves to shrivel and fall, as the plant is deciduous and loses all its foliage before flowering. Early in the season the flowers will begin to show all along the stems. These, mostly borne in pairs, are of a creamy-mauve, or cream-coloured in some forms, the lip large, downy, and of a soft sulphur-yellow, bearing a few purple streaks at the base. The plant should be grown upon a block or in hanging-baskets, as being a pendulous kind (see illustration), it will not thrive if made to grow upwards. The baskets should be well drained, and be filled with good fibrous-peat and Sphagnum Moss. The plants may be grown in the very hottest place possible to put them, always being kept well supplied with water during growth, but during winter a temperature of between 55 degs. and 60 degs. will be ample. There are several varieties of this Dendrole, some of which are very inferior. One of the best is *D. l. latifolium*, which produces fine flowers rather more freely than is the case with the type. M. B.

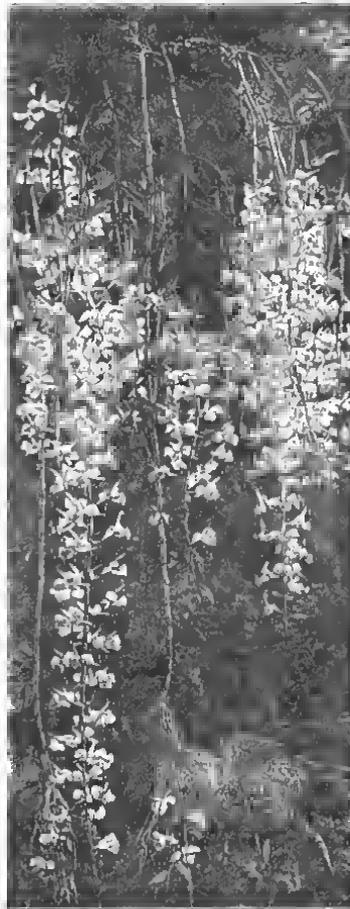
LYCASTES.

It is some long time since I promised "C. Bevis" that I would say something respecting the various plants in this genus, and now I undertake to do it as they will be waking up into growth again and will want repotting before coming into bloom. They will require a slightly warmer house than the *Odontoglossums*—that is, if these plants are kept cool—because I think where the temperature ranges from 45 degs. to 48 degs. it is ample for *O. Alexandrae*, but the *Lycastes* like it a little warmer in the winter. These plants enjoy a liberal supply of water during the growing season, and even in the winter I do not like to let them remain dry long together, just enough water being given to keep the bulbs plump. The plants should be shaded from the effects of the brightest sunshine, but still they revel in light with an abundance of air circulating amongst them. The pots should be well drained so that no stagnant water remains about their roots, using for soil good brown peat-lime and Sphagnum Moss. In potting I like to have the plants slightly elevated above the pot's rim, but some people prefer to pot them about level; but I think these Orchids are not very particular in this respect so that the young growths are free. Mr. Skinner used to say that *L. Skinneri* would grow in the dwelling-house without fire-heat at any season, but I have found it to be a plant that likes more warmth than any of the species. I do not think that there are any of them which do not thrive better with a little warmth. The following kinds are amongst the most beautiful, and most of them are reasonable in price and easily obtainable by all growers.

L. AROMATICA.—This is a small-flowered plant of a rich, clear yellow colour, but its chief recommendation lies in the beautiful warm aromatic odour which its flowers give off, and which renders them much in favour for gentlemen's buttonholes. It is free in flowering, and I have before me now a photograph which was sent me last year by a friend of a plant bearing one hundred flowers. A single flower is enough to put into a room with other cat blooms, and also for a buttonhole bouquet, with just a little bit of some sort of greenery to afford relief. The plant sheds its leaves, for the most part, in autumn, but I think this comes about through its being kept too dry, and I like to see

this *Lycaste* so grown that a few leaves remain green on it, as they help to set off the clear, rich yellow of the flowers. It is a plant which I do not think has ever been lost since it was first introduced, which is now upwards of seventy years ago. It comes to us from Mexico.

L. PRESENTA is another yellow-flowered plant which is sometimes, but erroneously, called by the same name as the last. It differs in its much larger size, also in having a large blotch of very dark blood-red at the base of the rich orange-coloured lip which gives it its name, and in the lip being differently shaped, beside which the plant is a very much stronger grower, with stouter and larger bulbs and leaves; in fact, no two species can be more distinct, and the one distinction which might serve to a blind man to distinguish it by its entire want of any odour. The bulbs are some 2 inches or 3 inches high, bearing a pair of leaves some 18 inches long, with flowers as much across as the bulbs are



Dendrobium Pierardi.

high; these blossoms are deep-orange-yellow, stained at the base of the lip with deep sanguineous red. This plant comes from Guatemala, and also from New Grenada, and it was first sent from Guatemala by Mr. Skinner just over fifty years ago.

L. COSTATA.—This is a stronger grower than either of the preceding; indeed, it grows to an immense size, and it flowers are of a uniform creamy-white, with a slight stain of yellow on the lip. This plant, it would seem, has been figured under the name of *L. Barringtonii*, but it is the same as *L. costata*; the flowers are sweet-scented after dark. It was introduced to us from Peru just forty years ago.

L. DARRI is an elegant species, but it has been east on one side by many growers to make way in some instances for less ornamental plants. It was introduced by the Messrs. Loddiges, of Hackney, between sixty and seventy years ago. With the general aspect of a

Lycaste, the sepals and petals are green, spotted (in some forms freely) with bright-reddish, the lip being streaked with red, and having yellow on the disc. I saw in Mr. Snee's garden last year a green form of this flower, and at Sir Trevor Lawrence's I also was fortunate enough to walk in one day when the lovely variety known as *punctatissima* was flowering, the sepals and petals of which are a greenish-yellow ground colour, heavily spotted all over with red and reddish-pink; petals, white, similarly spotted, but more sparingly; lip, yellow. I have been induced to name this variety from its extreme beauty, but it is very rare. It may crop up from amongst any importations of *Orchids* from Mexico.

L. MEASURESIANA.—This is supposed to be a variety of *L. plana*, and if so it is a very beautiful one. For a long time it remained scarce in collections, but at last it was introduced in some numbers, so that it is now more frequently seen. It has the general appearance of the species. The flowers are freely produced, and are extremely handsome. The sepals are olive-green; the petals and lip are white, profusely spotted and blotched with bright-purple, saving the margin, pure clear white. It comes from Bolivia.

L. SKINNERI.—This species appears to be the grandest of them all, but so extremely variable in colour that I cannot describe it. The flowers are very thick and waxy in texture, the broad spreading petals being white or rose colour, from which they vary to quite a bright-crimson; the petals, which are much smaller, and stand erect, forming a hood over the lip, are always much deeper coloured; lip, red or crimson of various shades, mottled with white in the variety *alba*. The flowers are of the purest-white, saving a tinge of yellow on the disc of the lip. Another fine form is called *armeniaca*, and in this the flowers are pure-white, having a blotch of apricot-yellow on the lip. This makes a fine contrast, and is a very beautiful variety. There are numerous forms of this species named, but they only differ in colour, and it is so variable that no two plants from an importation may be expected to turn out exactly alike; but all of them are exceedingly easy to grow, and they flower very freely, making for home-decoration one of the most lovely displays imaginable. I hope "Miss B." will be induced to take these plants under her care now.

MATT. BRAMBLE.

5356.—China Asters, &c., from seed. —This is the best time to sow Asters, Marigolds, and similar annuals if desired to flower early; but if late defer sowing another month. A cold frame is as good a place as need be desired, for if shut up closely a good deal of solar heat will be enclosed to hasten the germination of the seed, and after the seedlings are above ground they require plenty of air on fine days, so as to harden the growth previous to planting in the open air. I raise quantities of these in boxes, and when they are large enough to handle they are transplanted into the soil of other cold frames, about three inches apart, making splendid plants.—J. G. H.

—Asters and African and French Marigold seed will vegetate in a cold frame, although it will not do so quite as well nor so quickly as over a hotbed. The seed should be sown in March. Let the frame be well exposed to sunlight, and keep the lights rather closed until the seed vegetates.—J. D. E.

5415.—Gladolus seed.—The plan I have always adopted with seed of *Gladolus garlucensis* is to sow it in flower-pots, about fifty seeds in a 7-inch pot. Plunge them in a hot-bed and the young plants will appear in about ten days. The seed is sown about the first week in April, and as the plants appear above ground admit air more freely, so that by the end of the season they have made good growth in the frame, or, indeed, they may be removed to the open air about the end of May, and if carefully attended to as regards watering they will form nice plants by the end of the season, with bulbs from the size of a small Pea to the size of a Filbert. Plant these bulbs out-of-doors in March, and although they are so small nearly the whole of them will produce strong flower-spikes.—J. D. E.

Original sources of these generally sow the seeds in a prepared bed. The strongest bulbs will flower the second year under ordinary circumstances, and in some cases the third year. —E. H.

HOUSE & WINDOW GARDENING.

GOOD ROOM PLANTS.

PALMS.

AMONGST the best plants for rooms are the Palms in a small state, which are always stately-looking and attractive, and cannot be well misplaced. They are also very enduring, and will live and thrive where many plants of a less hardy nature would die. Another thing much in favour of them is that they require but little root-room, and are therefore all the more handy for vases, into which they can be placed without taking them from the pots. In such cases where this has to be done I have never found anything equal to Moss for placing round the ball, as that absorbs the water gradually, and keeps the plants nicely moist. The most desirable kinds of Palms for the purpose referred to are the Kentias, such as *Behourea*, and *Areca lutescens*, the last-named being very graceful in habit, and having rich-yellow stems that show up in fine contrast with the green of the foliage. *Latania borbonica* (here figured) in a small state is also a good sort to have, and so is *Chamaedorea*



A good room Palm: *Latania (Livistona) borbonica*.

gonenua-furmis, an excellent plant for small pots, and *Chamaerops Fortunei* will stand any hardship.

WINDOW BOXES.

5386.—There will not be much danger from drought at a north-east aspect, the morning sun probably going off before eleven. Wood is the best material to use for the five boxes, and they may be made at almost any rate from a few pence each to ten shillings or more, if highly ornamented. Good Elm boxes, the width of the window-sill, merely neatly varnished at the front edges, and painted (two coats thick) dark-green will probably cost about seven or eight shillings each if 6 feet long, but this great length may increase the expense, as wood becomes dearer in large pieces. In this case two smaller boxes would be cheapest. It would be well to go to a respectable carpenter, and ask him this question. Six feet is an awkward length to manage, too, in getting the boxes into position, and it is therefore better to have two of three feet each. There should be small wedge-shaped bits of wood nailed at the bottom to keep the boxes level, as window-sills usually slope upwards, and there is no necessity for holes being bored for drainage, as moisture evaporates very quickly from a box, and with good drainage holes are better avoided. The boxes should be at least 10 inches deep, and a foot will be better, as allowing 2 inches for cracks and ashes at the bottom. A handy man can easily construct window-boxes by selecting square boxes at the grocer's (about 2 feet by 4 feet, and a foot deep), and sawing them exactly in half, when half the cover will be found to fit into the back, and can easily be secured by adding the wedge below, and painting the boxes outside only, and about 2 inches over the inner

edge. If well covered with trailing plants such boxes look quite as well as those which cost much more, the price of these being about one shilling each. Plants growing in window-boxes have little room for their roots, as they should be thickly planted; therefore, they must have a good rich, light compost to begin with, consisting of loam, leaf-mould, manure, with a little sand, and should be top-dressed as the soil shrinks, liquid-manure being also given when the plants are in bud, once or twice a week. Soot-water is excellent liquid-manure, and can be easily made by putting a little soot (brushed from the chimney) into a coarse canvas-bag, tying it securely with string (yet not so tightly pressed together that it cannot shift), and placing it in a pan of rain-water, the surrounding water only being used in a thin, clear state, and renewed again and again by occasionally stirring the bag of soot with a stick, until most of the soot has been dissolved. It is not possible to have one set of flowers which will bloom continuously in spring, summer, and late autumn, and if no change is to be made only small shrubs or English Ferns can be grown in them. The best creepers to run up strings or

wires and form an arch at the top are *Tropaeolum canariense* (with masses of bright-yellow flowers), *Tropaeolum Lobbianum* (earmine blossoms), or the common Yellow and Red Nasturtiums; Major *Cucurbitaria* would do well here, too, and make wreaths of exquisite blooms in autumn; *Lophospermum scandens* (pale-pink, bell-shaped flowers, with handsome foliage), and *Maurandya Barcinayana* (purple) are less common and very beautiful in effect. For trailers to hang over the box, Ivy-leaved *Pelargonium* ("Geraniums"), Blue *Lobelia*, Money-wort (with lung, trailing growth), Mother of Thensands (*Saxifraga sarmentosa*) with rich-dark foliage, Old *Pinks*, cut down in spring, and allowed to form hanging sprays, and *Nierembergia gracilis* are all excellent, with a row of drooping *Double Begonias* (tuberous) behind them. These can be bought specially for baskets and windows, those which have heavy hanging flowers being the best for this purpose. The back row of plants may consist of *Zonal Pelargoniums*, *Margarites*, *Petunias*, *Heliotropes*, &c., arranged to suit the tints of the other flowers. All these things are best put out at the end of May for the summer display, but "H. Ormonde" may have nice sturdy seedlings of Dark-bronze or Crimson Wallflowers, Forget-me-not (*Myosotis dissitiflora*), clumps of *Daffodils*, *Double Primroses*, *Double Daisies*, *Auriculas*, and late bulbs, put in at once, and exchanged for the above when they have done blooming in May. In the autumn *Asters* may be used to fill up gaps where plants have gone out of bloom, and dwarf *Chrysanthemums* will carry on a bright display until the frosts cut them off, after which small shrubs of bright-berried things, such as *Mahonia* (*Berberis*), *Aquifolium*, with purple berries and yellow flowers, *Cotoneaster microphylla*, *Skimmia*, and *Aucuba japonica*, with neat plants of *Laurustinus* (which flowers

in winter), will keep the boxes bright in winter; or bulbs may be put in—*Tulips*, *Crocuses*, *Hyacinths*, *Narcissi*, *Scilla sibirica*, &c.—to make a brilliant display during the early spring. For bow-windows, small boxes to fit each division are preferable to one continuous box, for reasons before given. The well-doing of window-plants depends largely upon the daily attention they get, constant supplies of water being necessary. If the boxes are once neglected, so as to become almost dry, the whole beauty of the arrangement may be destroyed; the owner's daily attention should be given to them for a few minutes, a few servants can be trusted to remember their needs, or supply them fully during the summer months.

J. L. R.

5312.—**Heating a sitting-room.**—There are so many varieties of heating apparatuses advertised in GARDENING that it would be inviolent to select any special one. At the same time "A. Saunders" should understand that those of which hot-water form a part are the best for plants; although those which generate moisture from the air are almost equally good, as there is no smell with them when used with a good lamp, and one of these throws out a considerable heat in the writer's hall. Any heating apparatus for a sitting-room should be easily movable, and the best position for it in a sharp frost will be between the window and the plants, so as to prevent the freezing air from reaching them. If a small hand stove be selected, a pan of water should be placed over it on an iron stand at about 8 inches distance from the top. This will prevent any injury to the plants from dry heat, but these stoves when heated by a lamp must be carefully regulated and have enough oil to last till morning, as they give out poisonous fumes in going out or if they flare up high.—L. R.

5408.—**Hyacinths in glasses.**—I am afraid *Hyacinths* which have been grown in glasses will be of very little use to anyone who has no garden; but they might be transferred from the glasses to boxes of soil and left there to ripen. Possibly they might come in useful for window-boxes in the future if taken care of, but they will only lead to disappointment if used in glasses again.—E. H.

— I think it would be wiser for "Amateur" to throw away the bulbs after they have bloomed. *Hyacinths* are got to the highest state of perfection before being imported, and under the most favourable conditions are of little use a second season. An "Amateur" does not possess a garden they would be of less service still. My own are planted in a warm situation and allowed to take their chance. They often flower fairly well late in the spring, but never produce such grand spikes as I got the first time, whether grown in soil or water.—P. U.

5422.—**Brown spots on a Ficus.**—Sooner or later the bottom leaves will fall from the *Ficus*. When the roots, from any cause, have become unhealthy the leaves may fall prematurely. Too much or too little water, want of cleanliness, or the atmosphere much contaminated with gas will cause the leaves to drop. The brown spots may be caused by drops of cold water destroying the tissues.—E. H.

— There are many causes of these, but I am inclined to think yours is either from drought or cold, perhaps both; or it may need repotting, the old soil being completely exhausted. If you were to show it to the nearest gardener or florist, he would doubtless be able to say the cause and suggest the best remedy.—P. U.

5411.—**Growing *Lilium auratum*.**—It will be the best plan to pot the bulbs and plunge the pots over the rim out-of-doors in some open material; this will cause roots to push out and growth to be made, and if the plants can be kept in a greenhouse or a frame until the flowers are about to open, they will do much better than in the window of a bedroom. In fact, I would rather grow the plants in a sheltered place out-of-doors; but, of course, there is the pleasure of watching the plants grow; in that case, they may be put into the room as soon as they have grown a few inches. Keep near the glass, and give plenty of air.—J. D. E.

— If the bulb is 3 inches in diameter a 7-inch pot will be large enough, measuring from the inside. Place half-a-dozen crocks at the bottom, covering them with some rough parts of the potting compost on fresh leaves, with a view to keeping the drainage in perfect condition. If the fine soil runs down among the

crocks the passage-way for water will be blocked and the roots placed in a stagnant state. Although *Lilium auratum* is a moisture-loving subject it does not appreciate too much water if the drainage is imperfect. Loam in three parts, with one part of half-decayed horse-manure, is a suitable compost. Do not fill the pot more than three parts full, only just covering the bulb. Roots will push from the base of the stem directly it commences to grow. These should be covered at once with equal parts of fibry loam and horse-manure, into which the roots penetrate freely. The soil should only just be kept moist until growth is well on the way, when abundance will be required, repeating the top-dressing as the roots show through the surface soil.—S. P.

5428.—**An ash-pit.**—If you had a glass light made to fit the pit, and the front and ends pulled down far enough to secure a gentle slope for the light, you might grow Cucumbers very well if you did not start with them till the middle of April. By that time the sun will have power to help you a good deal with its warmth. You will have to fill up the pit, of course, to within 1 foot of the glass, and if this can be done with stable-manure at the time I have stated, the bottom-heat rising from it would benefit the Cucumbers greatly, or you may fill the pit with soil and set out plants of Vegetable Marrows at the end of May. The growth of the Marrows may be allowed to hang over the sides of the pit.—J. C. C.

—Mushrooms in summer do better in a cool, shady spot, and later on in autumn or winter the deep ash-pit will not offer any advantages for Mushroom-culture; but if filled with warm manure and a frame placed over it, Cucumbers will do well in it, as would also early Potatoes or any other forced crop.—R. H.

TREES AND SHRUBS.

SHRUBS FOR FORCING.

MOUNTAIN LAUREL (KALMIA LATIFOLIA).

This is a capital shrub for gentle forcing, and small plants grown in pots may be had in bloom early in spring by introducing them into a warm, moist house, and keeping their roots well supplied with water. In a cut state the flowers are very valuable, but they are much best if left nesting among the bright glossy foliage of the plants on which they grow. This shrub is also excellent for planting in margins of shrubberies where the soil is moist and sandy. It also thrives remarkably well near lakes, where the soil is wet but well-drained. Its crisp, white-pinkish flowers possess a richness and beauty found in those of few hardy shrubs. The



Truss of flowers of the Mountain Laurel (*Kalmia latifolia*). Colours, white and pink.

best time to plant or pot up *Kalmias* is in September, but these operations may be very successfully done in February and March if the weather is open. B.

5471.—**Persian Lilac.**—I believe some people do succeed in getting *Lilacs* to flower after being dug up from the open ground and potted, but I never could get the same quantity of flowers from them as from those specially

grown in pots one year before forcing, and this is what you had better do in future. I, however, think that a part of your failure is due to starting forcing too early, and giving too much heat at first. No plant, whether a *Lilac* or a *Rose*, will submit to such early forcing after such a recent root disturbance as yours was subjected to. If you grow on your plant for next year treat it as you would a tender greenhouse plant up to the middle of May.—J. C. C.

THE VENETIAN SUMACH (RHUS COTINUS).

This, when in flower, always arrests the attention, because of its singular appearance, of even those who do not take a general interest in shrubs. On account of the feathery nature of the sterile flower clusters some call it the *Wig-tree*, a name by which it is perhaps better known than *Venetian Sumach*. It is an invaluable shrub, as it is attractive at a time when shrubberies begin to look dull and monotonous. It is always a dwarf, spreading bush, rarely more than 8 feet high. Its glaucous round leaves make a pleasing contrast to the reddish feathery clusters. It is hardy, almost evergreen, and grows in all kinds of soils, but must always have plenty of room to allow of full development. The bush here figured is a conspicuous object on the lawn at Marsham Lodge, Gerard's Cross, Bucks. G.

FROST-BITTEN PLANTS.

The frost awhile ago made it evident that greenhouses which are not efficiently heated are a delusion in so far as they are not often capable of resisting the frost of an ordinary winter. I am sorry to say that already it has come to my knowledge that many owners of unheated houses, and some that attempt to heat them with oil-lamps, have lost all their tender plants. One cannot but look upon the matter with a certain amount of regret, because I know in many cases amateurs have devoted much patient care in raising and tending their stock of flowers, and then to lose them in one short night by the cruel frost is, to say the least, disappointing to a degree; but so long as the owners of badly-heated houses court failure in this way, and ignore the advice of practical men, so long must they expect to meet with disappointment in the direction indicated, as not one year in ten can tender plants be kept free from frost in the ordinary greenhouse without efficient external covering, or some means of properly warming them. I do not wish to under value the use of oil-lamps for warming small greenhouses, because their management is easily understood, and convenient as well; but as compared to the cost of fuel for a small hot-water boiler, oil is quite as expensive. Seeing, however, that oil-lamps may be made the means of warming small houses in time of frost, it is a pity that many of those people who attempt to use them do not light them earlier in the evening, before the frost has had time to enter the structure. This neglect is, I find, the cause of much of the injury that has already been done by the cold. Those who have not the opportunity of observing the state of the temperature in the open air are surprised at the destruction the frost has made even in some heated structures. In the two days that include the 4th and 5th of the last month (January), the thermometer did not vary a degree for 32 hours, but remained stationary all that time at 15 degs. Fahrenheit, or 17 degs. of frost, which is the lowest reading I ever remember over so many hours. This being the case, there is not much reason to be surprised that the frost should penetrate into unexpected places. I have been consulted as to the proper treatment of a house full of plants that had been frost-bitten, the collection of plants consisting of such subjects as *Arum Lilies*, *Maiden-hair Ferns*, *Marguerites*, *Pelargoniums*, *Foliage Begonias*, &c., which had been killed down to the pots. The *Arum Lilies*, *Ferns*, and *Begonias* I advised should have all the growth cut down to the pots, all the others of a less vigorous nature to have all the injured growth

removed at once, which will give a chance for the old stems to break into life below. Their recovery, however, depends more on the treatment they receive after the injured parts are removed. Plants in that condition should have at once and onwards a regular temperature of 50 degs., and the roots should not have any water for another month, or not until they show



OUR READERS' ILLUSTRATIONS: Venetian Sumach or Wig-tree (*Rhus cotinus*). Engraved for GARDENING ILLUSTRATED from a photograph sent by Mr. Frederick M. Fry, 14, Montague-street, London, W.C.

some signs of recovery. Even then the supply must be very moderate for several weeks. Such as recover and are fairly well furnished with leaves should be given some stimulating liquid. Where there are no means of heating the house, and the plants are frost-bitten, there is not much that can be done. Those of a succulent character, like *Pelargoniums*, should have the injured parts removed, and the roots kept dry for a few weeks. Hard-wooded plants under such circumstances had better not be cut back, but remain as they are until April, when it will be seen whether the injury is of a permanent character, and then have the injured growth removed if they are likely to recover. Their roots must not be allowed to get dry, but the soil about them kept just moist. J. C. C.

Flues v. hot water apparatuses.

Although "L. C. K." does not actually say so, anyone not acquainted with the merits of a good flue as a heating medium—I am alluding to his notes in GARDENING for January 27, page 667—would naturally conclude that the flue was in fault, thus the frost got into the house and killed the plants to which he refers. I should not note the matter now, only I think the reader should be set right with regard to the utility of a flue, because I maintain that if the flue "L. C. K." refers to was at fault it is because it was badly constructed, or else indifferently attended to in regard to the fire. A well-built flue and a fireplace large enough to hold sufficient fuel will at any time defy frost, if ordinary care is used in attending to the fire, as well as the most expensive hot-water apparatus, and requires less attention. The reader will understand that I am not saying that the flue is better than hot-water pipes; I do not wish to do anything of the kind. The flue has done such good service in the past, and even now would be much better in some cases than the small hot-water apparatus, that I do not like to see a useful system of heating placed at a disadvantage without sufficient reason.—J. C. C.

OUTDOOR PLANTS.

CHRISTMAS ROSES.

THE planting of these should always be done prior to the pushing forth of new foliage. I am, however, aware that in some gardens where especial attention is accorded these plants they are successfully planted in the spring months as well as at other seasons. In all ordinary instances and where no especial home is provided for Christmas Roses it is by far the best plan where they cannot be planted in early autumn to do it as soon as flowering is completed. This will give them an opportunity of becoming well established before the prevailing winds of March and April arrive. Christmas Roses, that is, all the varieties of *Helleborus niger*, are best



A good Christmas Rose (*Helleborus niger*), showing habit of plant.

broken up into rather small pieces. Particularly is this the case where the plants have been allowed to remain long in one position. Very large plants with probably 100 or more flowers springing from each are exceedingly handsome looking subjects in the herbaceous border, or indeed in any position where such may perchance exist, but it does not follow that the finest flowers are always produced by these very large examples. On the other hand, I have found that the finest flowers are produced on two-year or three-year-old plants, coming from the time of planting and assuming that the plants have been broken up into pieces of not more than two or three crowns each at the most. Divisions of this size are quite large enough for transplanting, so that those possessing large specimens that have not been broken up for years could soon increase their stock of this invaluable winter flower. To those possessing such plants I would suggest that a portion be broken up or divided every year, as by so doing a continued supply of flowers may still be forthcoming as before. Where, however, the dividing and transplanting are deferred till the flowering is complete, the supply of bloom will not be interfered with. One thing is especially disastrous in

TRANSPLANTING CHRISTMAS ROSES, and this is attempting to transplant very large examples—that is, clumps of 2 feet or so in diameter. Though nearly twenty years have elapsed, I still remember an attempt to transplant some grand examples of these Hellebores in the lump as lifted, and though every precaution was taken and their new quarters ready prior to the specimens being lifted, it was all to no purpose. As a result, the attempt was an absolute failure and a lesson never forgotten. Every vestige of their grand foliage was lost leaf by leaf, and when in the early autumn of the following year I lifted them again to see if anything could be done, there was hardly a living root to be found in that huge mass, all of which was in the most perfect health when transplanted early in the previous autumn. The only remedy for plants thus reduced is to wash every particle of soil from them and remove the dead roots, afterwards dividing them into small pieces of a couple of crowns each and planting them in good soil in nursery beds. Prior to planting, allow the plants to become quite dry from washing by laying them out on a cloth, and

and when planting freely dust them in the trench with fine charcoal. It will also be well to plant somewhat deeper than usual, so that the new roots which shall presently issue from the base of the crown shall have the advantage of additional protection. This is the more useful because the old decayed roots will be of very little service in restoring the plant to health, and for which it must depend on entirely new roots. This to some may seem a good deal of trouble to go to, but if the variety be a good one—as it was in the case of that I nearly lost—it will be well repaid, as in two or three years these divisions will have made nice flowering plants, and in much less time, of course, where the plants have not been subjected to a course of wrong treatment. It is at this season of the year that many who possess a

stock of flowering plants of these favourite Christmas Roses are tempted to lift and pot a portion of them for blooming under glass, and for purposes of decoration, either in a cut state or in pots, few plants can equal, much less surpass them. None are earlier or more enduring, and none more free-flowering or continuous. But where the plants are few in number and valued accordingly, the protection of a handlight will keep the flowers clean and pure, while no probable danger hangs overhead. All plants lifted and potted for flowering under glass will, if at all large, be best broken up into small pieces when flowering is over and replanted in good rich soil.

THE POSITION this section of Hellebores appears to prefer is one sheltered from cutting winds and also protected from hot sun. Distant shade is preferable to that provided by a wall, for example. An abundant depth of soil where the roots may be constantly cool is, however, the chief point. Given this, you may plant your Christmas Roses in a greater variety of positions with success than in those instances where depth of good soil is wanting. It is nothing unusual for their roots to descend to 2½ feet or 3 feet in the earth where the soil will permit, and it is more than probable that their roots will go down far deeper if an opportunity be afforded them. I mention this that amateurs who would desire to make a special feature of a few plants should in the first instance provide a fitting and a permanent home for these very desirable garden flowers. There are some excellent varieties in commerce at the present time, and a good one, if costing a little more primarily, will not require any more room than an inferior variety, while the satisfaction and pleasure obtainable by planting the best kinds will increase year by year, as will also the plants and the quality of flowers. A good form of Christmas Rose (*Helleborus niger*) is here figured.

E.

5110.—**Eaten Pinks.**—Both rats and mice will eat out the centre growth from Pinks and Carnations. The common brown field mice are, I think, the greatest enemies, and they are the most difficult to destroy, as they will not be tempted by an ordinary bait. I have caught them in open steel traps by baiting these with Indian Corn that had been soaked

for an hour or two in water. Put about three Peas on an ordinary pin, and then you can fix it securely to the trap. You may also examine the plants for slugs, as they are quite capable of doing the injury of which you complain.—J. C. C.

— I have had Pinks eaten off by field mice, but sparrows are generally the principal depredators. Thread lace over the plants to short sticks, so that the threads are 3 inches or so above the plants, is generally a sufficient protection. If this does not suffice, cover with fishing-nets. If not too much damaged they will recover, but the flowers will be small.—E. H.

5441.—**Climbers for a wall, &c.**—If you do not care to plant Ivy, you may select such Roses as *Gloire de Dijon*, *Mme. Plantier*, and *Felicité Perpetue*, but the best evergreen creeper is the *Pyracantha*. I should, however, prefer the Roses; they may not perhaps flower quite so freely as those on a warmer aspect, or make quite so good growth, but they would cover the house sooner than anything else. For the fence, *Cotoneaster microphylla* and *C. Leclandii* will do admirably. *Azara microphylla* is a good hardy climber with rather a neat habit of growth.—J. C. C.

— Vello's Virgilian Creeper (*Ampelopsis Veitchii*) is the best creeper for a north aspect. Green and Variegated types will do, as would also *Pyracantha* and *Cotoneaster Simonsi*. The *Cotoneasters* and *Pyracantha* would do on the wood-paling.—E. H.

5423.—**Everlasting Peas.**—I do not think you are likely to get much satisfaction out of Everlasting Peas the first year after sowing. They may blossom late in the summer, but not before. Your best plan appears to be to sow the annual Sweet Peas at once to cover the fence for this year, which they will quickly do and be attractive all the summer. At the same time you may sow the seed of the Everlasting Peas in the greenhouse and plant them out 1 foot apart in good ground, and early next spring you can plant them where they are to remain with the certainty that they will flower the same season.—J. C. C.

— Sow the seeds in pots in the greenhouse; but under any circumstances they will hardly get strong enough to cover a bare railing next year.—E. H.

5445.—Plants for a narrow border.

—Why not set out hardy border plants? These give little trouble after they are once established, and are not only interesting, but useful for supplying cut flowers. For instance, *Alyosotis*, *Primroses*, *Wallflowers*, *Aubrietia purpurea*, and *Silene compacta* could be grown from seed. These would make a nice display annually. If an edging is wanted of a low-growing nature *Sedum glaucum* would answer well. The glaucous tint of its foliage would correspond well with the dark-green Ivy at the back. The following are all low-growing, easy of cultivation, and very showy: *Lychnis viscaria* fl. pl., *Stematis speciosa*, *Prigeron aurantiacum*, *Helenium pumilum*, *Narcissi* of sorts, *Alyssum saxatile*, *Anemone apennina*, *Saxifragas* of sorts, *Hepaticas*, *Arabis albida*, *Crocus*, *Snowdrops*, *Campanula trachelium*, *C. muralis alba*, *Chrysanthemum maximum*, *Christmas Roses*, *Lavender*, *Rudbeckia purpurea*, *Zauschneria californica*, *Veronica prostrata*, and *Solomon's Seal*.—S. P.

5296.—**Lycimachia Nummularia aurea.**—I doubt very much if seed of this is obtainable. I have referred to one of the most extensive lists of hardy flower seeds, but it is not offered, nor is it worth the trouble required and time lost in waiting to raise it in that way. Almost any nurseryman who deals in hardy plants would supply one of this for a few pence, and planted and tended under suitable conditions it might soon be increased to any extent.—A. H.

5376.—Climbing flowering plants.

—Almost any of the usual run of hardy climbers will thrive here, though they may not flower quite so early or profusely as on a south aspect. A few good ones would be *Roses* (I have a splendid *Gloire de Dijon* on a north-west wall that flowers abundantly during the summer), *Clematis* of sorts, *White and Yellow Jasmines*, *Passion-flowers*, *Honeysuckles*, *Wistaria*, &c. *Tropaeolum speciosum* would thrive admirably also.—B. C. R.

— I should say the best of all flowering plants to grow up by the side of a house window in a west aspect is a *Gloire de Dijon Rose*, as it blooms both early and late, and if you want two plants for the Red Glory (*Reine Marie Henriette*) is a suitable companion to the other. *White and Yellow Jasmines* are a choice of flowering

climbing plants. The White Jasmine may be mentioned as one of them. Then there is the Honeysuckle, *Pyrus japonica*, Forsythia suspensa, Fiery Thorn (*Crataegus Pyracantha*), which is evergreen, and bearing clusters of coral red berries all the winter.—J. C. C.

5373.—**Moss on a tennis-lawn.**—You will never get rid of the Moss all the time the soil remains in its present impoverished condition, as is indicated by the presence of the Moss. Have as much of the Moss raked off as you can at once, and immediately after give the lawn a good dressing—sufficient to nearly hide the Grass—of rich soil, or preferably short rotten manure. Repeat the application again next April, and twice each winter following until the Moss disappears, which it is sure to do as the Grass gets strong enough to overpower it. Now, owing to the poorness of the soil, the Moss overcomes the Grass.—J. C. C.

5383.—**Good blue annuals.**—*Nemophila insignis* (pale-blue, height 6 inches), *N. atrococcinea* (dark-blue, 4 inches), *Placelia campbelliana* (intense cobalt-blue, 1 foot), *Whitlavia urandiflora*, and *W. gloxinioidea* (violet-blue, about 1 foot), and *Brachycome iberidifolia* (blue, 9 inches), you will find some of the best annuals of this colour. If you want anything taller for the back, the blue annual Larkspurs will do nicely. *Linnæa sibiricum* is also a rather pretty thing. I have never heard of, much less seen, a white *Nasturtium* yet, but the pale-coloured varieties are not equal to the dark as bloomers. Lastly, do you think blue flowers will go well with Roses? I do not.—B. C. R.

5413.—**Birds eating Crocuses.**—Have you tried a few lines of blue cotton run along each row just above the flowers? If done neatly this does not look at all bad, and I have never known Crocuses, Peas, or anything else touched where this was done.—B. C. R.

—Birds are great enemies to the Yellow Crocuses, and there is no way of keeping them off except by shooting them (a harsh measure), or the remedy you have adopted, but which is, unfortunately, unsightly. It is interesting to note—in London gardens in particular—how the mischievous sparrows will invariably "go" for the yellow lines of Crocuses and pick off the petals, leaving a golden litter on the Grass edge.—C. T.

—Is the "Narice" who asks about this sure that the birds eat the Crocus flowers, or do they only pull them to pieces? The eating is curable, but the malicious and depraved habit which town sparrows have of pulling flowers to pieces, about which all kinds of suggestions have been made from time to time, seems incurable. With me, in the country, pheasants are the principal offenders and they eat Crocus flowers whole, as fool, also Scarlet Anemones, Dog's-tooth Violets, Fritillaries, and other flowers. By making a strong infusion of Quassia-chips, boiling two or three ounces in a gallon of water, and watering in dry weather just before the flowers begin, I prevent it, but it must not be deferred till the birds' appetites have been whetted by finding some of the flowers palatable.—C. W. D.

5412.—**Hops on a wall.**—Where neatness is considered the old stems are cut down in autumn when the leaves die. There should be something permanent to support the shoots during growth. Wires or strings stretched tight will do.—E. H.

5349.—**Best Lilies.**—A few weeks ago I gave the names of a few of the best Lilies, and you should refer to that list. Lilies should be planted at once if not already done, and in good peaty soil. It is peat soil they like, as a rule, and are never happier than in such a place as a Rhododendron-bed, where they are protected when growing in the spring, and the bold spikes of flowers are set off by the foundation, so to say, of rich, green leafage. There is no great number of White Lilies, the pure-white one being the beautiful white *Madonna Lily* (*L. candidum*), which you know well, as it is the most common of all. This is rather quixotic in its behaviour, and the finest mass of it I have ever seen was at Bath, on a warm slope in full exposure to the sun, the soil loamy; and one often sees splendid clumps of it in cottage gardens. Another very beautiful White Lily is the *L. speciosum* or *L. laucifolium* or *alium*, or *Krietzleri*, which is pure-white, and blooms in the autumn freely. A large bed of this was a feature of great interest last year at Kew, and lasted a considerable time in beauty, the pure-white flowers being welcome late in the year. It is also serviceable for pots. *L. auratum virginicum*, a variety of that well-known species, is nearly

white. But my selection would be the two first mentioned, which are really white. As regards other kinds, select *L. elegans* in variety, the fine old Orange Lily, *L. croceum*, *L. auratum* and its many varieties, which bloom in August, the tall-growing and strikingly handsome *L. pardalinum*, the stately and deep-coloured *L. superbum*, the Tiger Lilies, especially the variety named *splendens*, a glorious flower for colour, and forms of *L. speciosum*, into the flowers of which crimson largely enters, and the white variety already mentioned.—C. T.

THE SEA LYME GRASS (ELYMUS ARENARIUS).

THIS British maritime Grass is well worthy of garden cultivation. It is a valuable plant for clothing a bank of loose soil or even sand, as its roots run through, forming a perfect mat, and effectually holding in position the soil of the bank. It is very hardy, and makes an excellent covert plant. If planted in deep good soil upon the shrubby margin it grows more vigorously, attaining then to 4 feet in height. Its sole beauty is its leaves, which are very effective in appearance, being of a glaucous or blue-green colour, and as the flowers are not very showy they might be removed to preserve the plant in its beauty of leafage for as long a time as possible. It is easily increased by division, and rapidly grows into a large specimen. In a wild state it is most abundant upon our northern shores. There is also an American representative of this family, *E. condensatus*, which is very ornamental and must be included in a selection of the best Grasses. It is very vigorous, of tufted habit, dense and erect, grow-

THE KITCHEN GARDEN.

SPINACH AND ITS CULTURE.

THE first sowing for summer use should be made early in March, as a rule; but in warm soils and situations a small sowing may be made in February.

SUMMER SPINACH.—Owing to the Summer Spinach being so liable to run to seed, it is advisable to make small sowings often rather than to make large sowings at long intervals, as by the former plan a regular supply of fine young leaves is ensured, whereas in the latter case small, tough leaves have often to be used in consequence of successional crops not being sufficiently advanced to give a supply. It is therefore obvious that a sowing should be made once a fortnight, or at longest every three weeks, during the summer months. These sowings may consist of the Round Spinach for the first two or three sowings, and the Flounders or the Lettuce-leaved varieties for sowing through the summer. These two last-named kinds are far superior, both in quality and cropping, to the Round Spinach. For summer sowings it is best to choose as shady and moist a situation as possible to ensure watering, as well as to prevent the plants from running to seed too quickly. All Spinach-seed is benefited by being sown in water for a few hours previous to sowing, inasmuch as it germinates more quickly and the growth is often stronger. Sowing in drills is by far the best mode of sowing the seed, as then the crop is more easily kept free from weeds, and watering or mulching can be effectually done, when desired as well as rendering it much easier to gather the crop. The drills



OUR READERS' ILLUSTRATIONS: THE SEA LYME GRASS (*Elymus arenarius*). Engraved for GARDENING ILLUSTRATED from a photograph sent by Mrs. Martin, Bournebrook Hall, Birmingham.

ing to a height of 8 feet. The leaves are long, arching, and graceful, and the shoots are terminated by a flower-spike 6 inches long and greatly resembling an ear of Wheat. B.

5351.—**Ashes for the garden.**—These are very useful in the garden, but not of much use for mixing with the soil, unless it is very stiff, when it will help to make it work better; they are excellent for making walks, for covering the bottom of cold frames, and for placing over the crown of half hardy plants in winter—in the latter case I can never get enough ashes to my use.—G. H.

should be about 1 foot apart, and the plants after thinning at least 6 inches asunder. The Lettuce-leaved and Flounders require even more room than this, if the production of fine large leaves be aimed at. The last summer crop should be sown on a well-prepared border or quarter about the middle of July, in drills about 18 inches apart; this will yield a good supply of fine large leaves till October is out.

FOR THE LATE OR WINTER CROP prepare about the end of July a border or sheltered quarter. Apply a good coating of thoroughly decayed manure, trench the ground well, and cast it up in the shape of a level surface, or a surface as possible to the influence of the atmosphere. URBANA-CHAMPAIGN

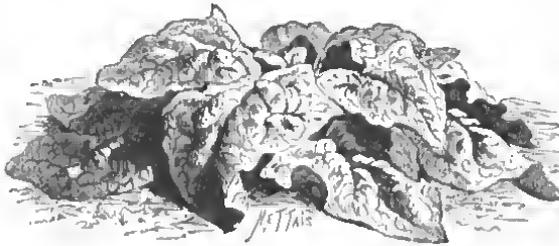
Every dry day till August 10th or 12th cast down the ridges and pulverise with a steel fork, so as to sweeten and incorporate all together. Then draw lines 1 foot apart and sow the hardy Prickly variety. As the plants advance thin them out from 6 inches to 9 inches apart, and maintain a healthy and vigorous growth by constant surface stirrings in suitable weather. This, if attended to, prevents canker, and encourages the production of an abundance of fine leaves for use every day throughout the winter. Timely fore-thought should be taken to shelter a portion with a row of short stakes about 18 inches high, interwoven with Fern, straw, evergreen branches, Furze, Heath, or other material, which should be neatly applied, and also made wind-proof. Thatched hurdles or frames, closely made, of battens hooked together and thatched, might also be used for the purpose of protecting from frost.

THE BEST SEEDING, to supply leaves in the spring, generally consists of the Prickly variety. The time to sow this crop, however, depends upon the locality. If sown too soon it runs to seed the same season and is useless. To sow it late enough to have a crop of leaves without the plants throwing up their flowering stems is what has to be aimed at, and for this reason many sow twice for the winter crops. In some parts of Scotland and the North of England the middle of August is not too soon, while in the south it is not often safe to sow before the end of September; but a practical acquaintance with the climate and locality will generally be the best guide. This crop is often sown after Potatoes or Onions. The winter crop will generally afford a good supply of leaves till nearly the beginning of June, by which time the Round or Summer Spinach will be coming in its abundance. A deep, rich, moist soil is necessary to grow good Spinach, and if liberal supplies of liquid manure be given to summer crops a great advantage will be gained thereby. Some care is required in picking Spinach, especially in winter, when the growth is often not equal to the demand. Indiscriminate picking will soon ruin the crop; the largest leaves should therefore be taken first and picked off singly, so as to avoid injuring the plants.

CULTURE FOR MARKET.—English market gardeners seldom grow Spinach as a summer crop, as it "bites" or runs to seed before many leaves have been gathered from it, and in that case it is by no means a profitable crop. The Round-leaved sort is that which is used for spring sowing, the first of which is made in February, a second about the first of March, and another sowing or two at an interval of three weeks or thereabouts, just as space and convenience permit. The latest spring sowings are made in a damp, cool piece of ground, provided such can be obtained, as, thus circumstanced, better leaves are produced in hot weather than in dry and warm soils. In July, if the weather be moist, a sowing of the Round-leaved variety is usually made on a spare piece of ground for autumn use. Early in August a large sowing of the Prickly-seeded or the Flemish is made broadcast on fields or in rows about 8 inches apart. Some growers prefer the Flemish on account of its large fleshy leaves and hardy constitution, and it sells in the market better than the Prickly sort. By sowing in the first and last week of August and the middle of September a succession of Spinach from October till May is easily kept up. Coleworts are frequently planted in a field of late Spinach, at 3 feet or 4 feet apart. In damp winters a large proportion of the roots may die, but in ordinary winters they survive, and produce an abundance of large fleshy leaves in spring. No care is taken with this crop from the time of sowing till gathering, beyond hoeing and thinning once or twice. Spaces under fruit-trees are also covered with Spinach sown broadcast, and as the trees are not furnished with leaves they do not shade the plants. Open fields are also often sown with Spinach in beds, which are covered by throwing soil over them from the alleys. Dig these beds 6 inches deep, and also planted at the usual distances apart.

the time the Spinach has come well up the Cauliflowers will have become well established, so that the Spinach, which as soon as ready is removed for market, does not injure the Cauliflowers. The Giant Virrolay Spinach (here figured) is an excellent kind, and requires rich ground.

5449.—Growing Peas.—The best way to set about growing Peas in such a soil is to mark out the rows fully 6 feet apart—wider, if possible—and crop the ground between with Potatoes or any similar crops. The advantage of giving so much space between the rows is that



Spinach "Giant Virrolay."

the Pea-plant derives to its best by the full exposure of its leaves to sun and air. When but 3 feet or so of space is allowed between the rows the plant grows weakly, and, consequently, the crop is a thin one. If possible let the rows run north and south; both sides then obtain an equal share of light. Dig out a trench 1 foot wide and 15 inches deep, as though for Celery. Break up the bottom of the trench at least 4 inches deep to allow surplus water to pass away quickly during heavy rains. Place at the bottom of the trench a 6-inch thickness of partly decayed farm-yard manure. On the manure lay 4 inches of soil—not that from the bottom of the trench, if it is heavy and retentive—scattering along with it quicklime—say, a good handful to every 2-feet run. Mix the lime with the soil, and on the top of this sow the Peas in a row 6 inches wide. Some persons sow the seed quite thick in a narrow space of, say, a couple of inches. The consequence is the plants are so close together that they rob each other of light, but when spread over the space named they grow more sturdily, and bear a better crop. One pint of seed is sufficient for a row 40 feet long. Before sowing the Peas place them amongst red-brick for a time, so that they are quite covered with it. Add 2 more inches of soil, sprinkling a little more lime along with it, and I think you will have success. When the Peas are 4 inches high earth them up, and place the stakes alongside them at once. If the weather threatens to be hot and dry, mulch the surface 1 foot wide at each side of the row to prevent the evaporation of moisture. Do not scruple to give abundance of water during a prolonged drought.—S. P.

—Yes, lime is what is wanted. Give the ground a heavy dressing of once, but let it lie for a fortnight and then dig it in. A little superphosphate hoed in (and sprinkled on the surface) when sowing will also help you. Do not put any more manure on the ground for the present.—H. C. R.

5447.—Growing Tomatoes.—The long box will be better than 10-inch pots for Tomatoes, as the plants will not suffer so much for the want of root-moisture in the box. You may with advantage increase the width of the latter another 3 inches. It is desirable to cut holes in the bottom of the box; these may be 2 inches over and 1 foot apart. If yours is a cold greenhouse it is no use to sow the seed until the beginning of March, nor is it desirable to have many sorts. Blenheim Orange is a good yellow variety, and Conference or Hackwood Park are free-setting red sorts when grown under glass, and both produce large, handsome fruit.—J. C. C.

—Yes, your plan will answer capitally, and be far better than growing the plants in pots. Unless the box is made roughly—the bottom not fitting the sides too closely—it will be necessary to bore holes in the bottom for drainage—say, two together a foot apart. It will be useless to sow seed in a cold house until the middle or end of April, and by that time the plants ought to go in, so that it would be much better to buy these.—R. C. R.

5438.—Tomatoes for market.—I do not find in practice that there is much difference in the bearing capacity of what are generally known as the Perfection type of Tomatoes. Halloway's Excelsior is a good one, and so is Hackwood Park if you get it true. Large Red is not suitable for indoor culture in summer, the fruit being too corrugated. It is, however, a good bearer. I devote a small house every year to Hackwood Park, and intend to continue to do so, as having tried Ham Green Farouito and a lot of so-called improvements I do not find them to be my better, if so good.—J. C. C.

—Hackwood Park is a very productive and excellent market variety, the bushes being large, but its weak points are colour and quality. A good strain of the Large Red is also much grown for market, as though the fruit is rather rough it sets well and crops abundantly. But the Tomato of the future is High Gem, of which fruit is now realising 3d. per pound more than that of any other variety. The plant is also extremely dwarf, and sets as well as the Large Red.—E. C. R.

5425.—Sowing Peas.—If Peas are sown in pots, they require plenty of light and air, and should not in any way be placed where the plants would be drawn up weakly. They should be planted out when the plants have grown to the height of 3 inches or 4 inches, but must first be well rooted to the open air. A cellar would be about the nearest place to put the pots containing the seed. It would be much better to sowing in the open garden at once. The first week in February is a very good time to sow early Peas. When sown at that time they are sometimes ready to gather as soon as those sown in November, and the February sowing usually gives the best crop. Try some both ways—sowing in pots to begin with, and sowing in the open garden at once. You will find the pot system plenty of bother with little result.—J. D. E.

—Better sow the Peas outside now. There will be nothing gained by sowing in a cellar, and not much in an unshaded room. They will come quite as early if sown on a man, sunny border, and the crop will be better, and will give less trouble.—E. H.

5374.—Tomatoes under glass for market.—The best Tomato for growing for market, or for any other purpose, is undoubtedly the new variety raised by Mr. B. C. Ravenscroft, of High, Crawley, named "High Gem." It excels in shortness of growth, boldly showing the first truss about six inches from the soil (when properly grown), and the trusses rarely exceed that distance apart up the stem, hence it is a genuine cropper. The fruit is of suitable size for market, and being solid is, therefore, a good traveller. The colour and flavour are simply perfect.—P. F. LE SERR, Jersey.

5370.—Making a Tomato-house.—My experience of Tomato growing leads to the conviction that the larger the houses the better, for the simple reason that large houses cost less to build in proportion to small ones. At the same time, for early work small houses are very useful. I consider for Tomato growing the house cannot be too large nor yet too small, as good fruits have been grown in a garden-frame. Make the Tomato-house as high and as wide as the lights will run to.—E. H.

5359.—Tomatoes in boxes.—Ordinary sugar-boxes, which are about 2 feet long, 18 inches deep, and 15 inches or 16 inches wide, do capitally for Tomatoes, two plants being placed in each; but as they are usually opened on the narrow side it is a good plan to nail this up again and take off a wide one, so that they may stand on the flat, as Tomatoes do not require a great depth of soil. Egg-boxes are also very suitable, two plants being placed in each division, or half, or four in an entire 4-foot box.—B. C. R.

5407.—Late Potato.—After trying a great many varieties, I find Reading Giant the most profitable to grow. It is an enormous cropper on almost any kind of soil, a capital keeper, and of excellent quality. Some of the tubers were very large, but the bulk of them are of medium size.—H. C. R.

—Winchester Castle is perhaps the latest Potato in existence, although White Beauty of Hebron is remarkably good just now, especially when grown in light loam soil. The former is pointed-shaped, and not too large. The flavour is good, while the cropping quality leaves little to be desired.—S. P.

5443.—Potatoes for show.—I consider the best variety for show is Schoolmaster. Nothing can beat it when well grown and selected. The best Kiliny for early shows is the Earl of Arundel, but for late shows I would recommend Reading Giant.—W. Henry Dunfries.

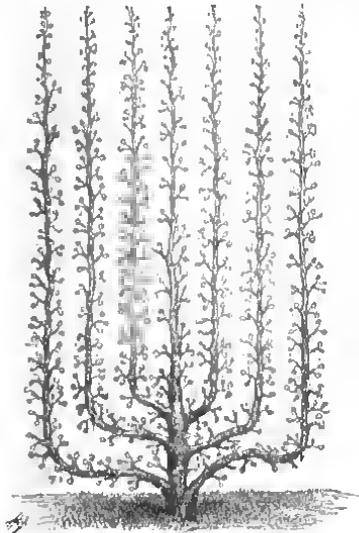
FRUIT.

5384.—Pruning Vines.—I would advise "Kent" to get some experienced gardener in his locality to look at his Black Hambro' Vines before proceeding to the very radical remedy of cutting the old spurs that are 1 foot long right off. If I did such a thing, I should certainly not expect any Grapes during the current year, and I should think myself very fortunate if the old spurs sent out any shoots from the base at all, for the wood will be as hard as iron; a far better remedy is to grow young rods up between the old ones, and then cut the old ones right away, either all at once, or partially. I prefer the gradual replacing of the old rods with new ones, by cutting off all the spurs from the base of the old rod to make room for the new one, and the following year cut the old rods out altogether, so that there need be no total loss of crop, and the bottom of the Vine will be as heavily cropped as the top—in fact, no greater bluish can be seen in vinerias than an uneven crop. The bunches should be equal all over.—J. C. H.

5363.—Rooting cuttings of fruit-trees.—There are a few Apples that may be propagated by cuttings, but they are not of much consequence, and it is far better to obtain the trees from a nurseryman who understands his business and who produces his young fruit-trees by grafting them upon suitable stocks in the spring, or by budding them in the late summer or autumn months. There is no harm in trying to strike cuttings. Put them in some time in November in the open garden. Strong young wood should be taken off with heels.—J. D. E.

PEAR TREES FOR SMALL GARDENS.

The accompanying woodcut represents the simplest and best form of tree for rapidly covering walls with Pears, and one especially well adapted for small gardens. Before this and like forms, the old horizontal pattern, which takes so many years to form, should give way. Among the many advantages that belong to the upright form may be mentioned that of simple training. To establish such trees, all that need be done is to take a young tree or seven-branched tree, and place the branches as near



Upright trained Pear-tree for a small garden.

as may be in the desired position to ascend. It is not even necessary to have the branches opposite, as without that the wall may be perfectly covered. With trees of this kind planted close enough together, a very few years' growth will suffice to cover a wall that would not be covered for a great length of time by the old method of training. B.

5427.—Peach dropping its buds. If all Peaches had the constitution of George there would be no bud-dropping. The

causes of bud-dropping are various. Unripe wood, dryness at the root, too much overhead, a severe attack of red-spider during the previous summer are some of the most common causes of bud-dropping. There are some kinds which always drop more or less of their buds, but under fairly favourable conditions enough blossoms remain for a crop.—E. H.

5423.—Management of a vinery.—The house should be started not later than the middle of January to cut ripe Grapes the end of June, and even then only the early varieties will be ripe, and no time must be lost. You will have to start with a night temperature of 50 degs., allowing 10 degs. to 15 degs. rise in the day from sun heat before ventilating. Chase early by 2.30 till middle of March, saturating the atmosphere by using the syringe freely. As soon as the buds break raise the night temperature to 55 degs., and the day temperature in proportion. When the foliage expands raise the night temperature to 60 degs., and when the Vines are in flower the night temperature may be advanced to 60 degs., beyond which it need not go. As the season advances more ventilation will be required, a little air being admitted early in the morning to let out the impurities accumulated during the night. The syringe need not be used after the berries are thinned, as sufficient humidity can be secured by damping paths and borders. It is impossible to say all that is necessary to be said upon forcing early Grapes in a short newspaper article, but a regular reader will find many hints on Grape growing as the spring advances. To get rid of the woodlice place a few toads in the house, and lay a few pots about with a slice or two of Potato or Carrot hidden away beneath a wisp of dry hay, and examine the traps frequently and kill the insects.—E. H.

To cut Grapes in June, the vinery should be started about Christmas, with a very moderate temperature—at first, say 48 degs., raising it to 50 degs. as a minimum after the second week, and when the shoots have grown a few inches, to 55 degs. By the time the Vines are in flower, the minimum should be 55 degs. The same treatment should be given if the house is started at once, but the temperature may be more rapidly raised now than earlier in the year. Woodlice have increased because of the fogs giving a dry heat. Wrap a boiled Potato in hay, and put it with the hay into a flower-pot; lay it on its side, and this will be found an excellent trap.—J. D. E.

5435.—Iron fencing.—Hardy fruits, such as Plums, Apples, Pears, and Cherries will do trained to the iron fence, but not Peaches or Apricots; the position will be too cool and draughty. They want a warm wall. The fruits likely to succeed best are Pears and Apples. These might be planted without fear.—E. H.

By all means plant the fruit-trees as suggested. There is no objection whatever. All that is necessary is to put a bit of cloth between the iron and the shoot beneath every tie.—B. C. R.

CHRYSANTHEMUMS.

5437.—Pompon Chrysanthemums.—"Heron" means early-flowering varieties of Pompons, not those generally recognised as Pompons that flower under glass in November. The early-flowering section are a somewhat new type, and owing to the early season that they flower in are suitable for beds out-of-doors, and for this reason must not be associated with the ordinary November kinds, of which Mme. Klise Dorlan or Mme. Marthe are types. The following twelve varieties all belong to the early-flowering section such as "Heron" requires, and possess much range of colouring. I append the colours of each, that a selection suitable for any person can be made from this number. La Petite Marie (white, very dwarf, useful for edgings to beds or borders), Little Bah (crimson-brown, flowers small), Mme. Picoul, light rose-purple, Nanum (creamy-white, early), Mignon (sleep golden-yellow, good boiler), Frederick Pele (crimson, tipped gold), Alice Butcher (orange-red), Anastasia (light purple, dwarf), Felberta (bright canary-yellow), Flora (golden-yellow), Lyon (rosy-purple), Piorey's Seedling (orange-bronze), St. Crouts (light-pink), Salomon (rosy-pink, very free, dwarf habit).—E. MOLYNEUX.

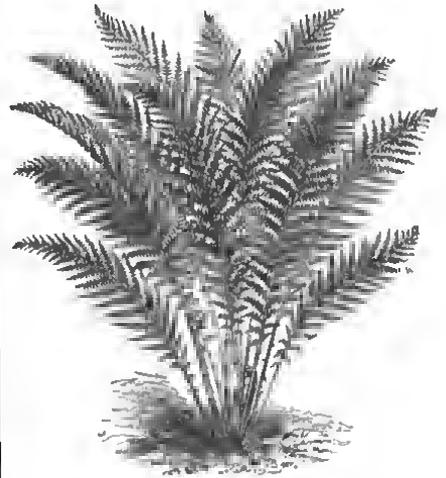
Mme. Desgrange is not a Pompon at all, but an early-flowering Japanese variety. What you want are such as Heron, Yellow Snowdrop, Mme. E. Dordans, La Petite Marie, Marlon, Rosinante, Mme. Marthe, Golden Maid, Marthe, Victorie, &c.—B. C. R.

FERNS.

A GOOD HARDY FERN FOR THE GARDEN OR WINDOW.

ASPIDIUM ACULEATUM.

Of this, one of the hardiest and most effective of all our native Ferns, numerous forms occur in various parts of the world. Benthams says it is found from the Mediterranean to Scamliaria, extending eastward into Central Asia; in North and South America, and generally in the



Prichly Shield Fern (*Aspidium aculeatum*.)

Southern Hemisphere. Our illustration shows the elegance of the plant, and, if grown in a shaded situation, it retains its fronds nearly all the winter. In deep, rich soils its handsome, dark-green fronds attain a height of from 2 feet to 3 feet, and wherever moist soils in the wild or rock gardens have to be furnished, this plant is well worth a place. It also forms one of the very best of all hardy Ferns for pot-culture in rooms or windows, retaining its stout old fronds until the young ones shoot up in the spring, and only requiring to be sprinkled or syringed over now and then in order to remove dust and other impurities. B.

5416.—Maiden-hair Ferns and Selaginellas.—The first named are easily raised from spores, which if fresh germinate freely in a gentle temperature, but with only a cool-house the best plan will be to purchase young plants. These can often be obtained in boxes containing a hundred or so for about five shillings, or if in smaller pots the price rises about three shillings per dozen. Selaginellas are so easily increased by means of division or cuttings in a moist warmth that any quantity may be obtained in a short time from a few old plants. But in order to propagate such things successfully you should have a small frame or glass-covered box fixed in the warmest corner of the house over hot-water pipes or the flue, if there is one, or else one of the handy little propagators now so cheap.—B. C. R.

The best way would be to buy small plants, as you find considerable trouble in the other matter under the circumstances. You may get a good collection of the more popular Aiantams and Selaginellas at a very reasonable rate. Here are a few of the best Maiden-hair Ferns: Aiantum cuneatum (the best of all, and largely grown to give fronds for cutting), A. Paotii, A. pedatum, A. Regine, A. rhodophyllum, A. tenerum, and A. Victorie. The most free-growing of the Selaginellas is S. Kraussiana and its variety anrea, which is of quite a golden colour; it is a lovely kind for pots.—V. C.

5452.—Adiantum Capillus-veneris.—In a cool greenhouse this is grand. I find a compost of peat, loam, and leaf-soil in equal proportions, with a dash of coarse sand, suit it very well. It does not look so well in pots as when growing in a greenhouse well, where, if syringed frequently, it soon makes a pretty feature. Plenty of drainage (pieces of wood) in the bottom of such soil will ensure success.—E. C. ILLINOIS AT URBANA-CHAMPAIGN

INDOOR PLANTS.

5353. — **Aspidistras in pots.** — As the potting so full of root, and the new leaves are not so large as they should be, these Parlour Palms should be divided and repotted; but not until the end of March, unless they can be placed in a warm greenhouse after this operation. Any ordinary compost, such as loam, with a little leaf-mould, soot, and sand, will suit them, and the pots should be well drained, covering the hole with a piece of crock with the concave side downwards, and arranging several pieces round it, so as to keep the way clear for escaping water. These crocks should be covered with a bit of dry Moss, and receive a dusting of soot, which both prevents the ingress of insects and helps to nourish the plant. The mass of roots being turned out of the pot, should be carefully divided with as little injury as possible. Each plant will make two or three specimens, in 6-inch or 7-inch pots; these can be given a shift in another year when they have filled the pots with roots. After repotting give one good watering, but do not repeat until the surface-soil be dry; over-watering before the roots are settled is apt to rot them, and so do more harm than good. The Aspidistras should be given all possible warmth after being repotted. — J. L. R.

5341. — **Treatment of Chinese Primulas.** — The date for sowing the seed must be regulated by the time you require the plants to bloom. For plants to flower from October onwards through the winter, the seed should be sown in March, potting the plants off into single pots in April, and shifting into their flowering pots in June. A mild frame is the best summer quarters, setting the pots in coal-ashes. The first bloom-spikes should be pinched out, after which they will send up several large trusses of flowers. For ordinary decoration 4-inch and 5-inch pots are the most useful, but a few of the finest, shifted into 7-inch pots, will make fine plants for vases. — J. G. H.

5347. — **Early Lily of the Valley.** — "T. Harrie" can scarcely expect to get Lily of the Valley to flower very early if he has only the convenience of a frame, for hardly any cultivated flower needs a higher temperature than Lily of the Valley to get them to flower far in advance of their natural season. A bottom-heat of 80 degs, and top-heat of 65 degs, are absolutely necessary to get these popular flowers in bloom in mid-winter; but with a frame they may be had in bloom about March, and ought to be potted up at Christmas, and plunged in a gentle bottom-heat, trusting to the increasing solar heat to bring them into flower in March. — J. C. C.

5400. — **Lamp for a propagator.** — The size of the lamp, and whether it should be a duplex or single burner, depends entirely upon the size of the propagator. The one to which I referred in the communication alluded to by "G. T. M." is heated by a lamp 8 inches high with a single half-inch wick. The size of the lamp should in every case be in proportion to the size of the box above it. If it is too large the heat would be too great, besides increasing the cost by burning the oil to waste. The whole construction and management of a propagator is very simple when the lamp is of the right size, and the tray only half filled with water. — J. C. C.

5430. — **Setting a coil boiler.** — The proper way to do this is to build the coil into a circular furnace, with a space of about 2 inches between the outside of coil and inside of brick-work. Do not let the last turn of coil cross the exit into chimney, or it will burn through very quickly. To connect the ends of coil and pipes make a rough collar of leather or board to fit on each, push it in about 4 inches, pack well with old rope or yarn, and, lastly, put in about 2 inches of fresh Portland cement, made rather stiff, and some lints of brick forced in the cement. This will be as tight as wax and last a lifetime. — B. C. R.

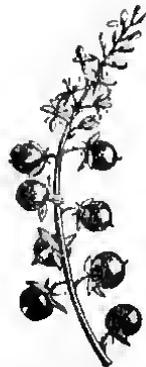
5439. — **Removing hot-water pipes.** — I do not think the rings will be much use again, as they soon get set and harden under the influence of heat. You may try, but if you have the least trouble with them I should advise you to discard them altogether, and make the joints first with a packing of rope yarn, and then with

corn in pieces and twisted up, and then with about 1 1/2 inches of fresh Portland cement, mixed with water to a smooth paste, and worked well into the joint all round, and smoothed off. This sets like a rock, never leaks a drop, lasts a lifetime, but is easily cut out with a sharp chisel, if necessary. — B. C. R.

5431. — **Unhealthy Fuchsias.** — "New Beginner" has perhaps got red-spider or thrips on his Fuchsias. From his signature, it may be he does not recognise these pests. I would advise him to show a leaf or two to a friend who is further advanced in floriculture. A temperature of 50 degs is scarcely high enough for growing Fuchsias. Ten degs. higher would be better, and an occasional syringing would be a check to insects. The real cause cannot be assigned, with any certainty, from the description given. — P. U.

GOOD BERRIED PLANTS. RIVINA LEVIS.

The brilliant scarlet berries of this plant render it, when well grown, one of the prettiest ornaments for the hot-house, conservatory, or even a warm room. It is quite easily managed, stays seeds if it even growing where they fall, making handsome specimens. For indoor decoration few subjects are more interesting, and a few plants may be so managed as to have them in fruit in succession all the year round. Any kind of soil will answer for this Rivina. Cuttings of it strike freely, but it is easiest obtained from seed. Either one plant or three may occupy a 6-inch pot; that is the best size for table decoration. Usually it is best to raise a few



Berried shoot of Rivina levis.

plants every year, and then discard the old stock; but some may be retained for growing into large specimens. These should be cut back before they are started into growth. The berries yield a fine but fugitive red colour. Miller says that he made experiments with the juice for coloring flowers, and succeeded extremely well, thus the Tuberosa and the Double White Narcissus variegated in one night. Of this species there is a variety with yellow berries which are not quite so handsome as the red, though very attractive. R. humilis differs from levis in having hairy leaves, those of levis being quite smooth. It also differs in the duller red colour of the berries, levis being much the prettier. Both are natives of the West Indies. R. B.

5442. — **A propagator.** — No, the seeds are not sown in the Cocoa-nut-fibre, but in pots or boxes of prepared soil. In some cases a much greater depth of Cocoa-nut-fibre is used than I find necessary, as the greater the depth this is the more heat is wanted to obtain a top-heat equal to the bottom. You have read the other part of the instructions right. An inch between the top of the lamp and the zinc tray is quite enough for the size of the propagator given, and a lamp with a half-inch wick is large enough. — J. C. C.

5426. — **Cuttings of indoor plants.** — Take the cuttings any time during spring, when healthy young shoots can be obtained; and when there is a brisk bottom-heat available Poinsettias can be struck up to the end of May or even later, and still make good flowering stuff. Linnæa is a hardy plant. Perhaps Linnæa is the best of the Indian species, in bloom? — E. H.

RULES FOR CORRESPONDENTS

Questions. — Queries and answers are inserted in GARDENING free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of GARDENING, 27, Southwark-street, Covent-garden, London. Letters on business should be sent to the Publisher. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as GARDENING has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by abstaining, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, rules, and means vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in GARDENING should mention the number of which they appeared.

5438. — **Gun licence.** — Does a person require to take out a gun licence for shooting or a spring bird in a garden? — T. G.

5408. — **Propagating Gum Cistus.** — I should be glad to know of the best way in which to propagate Gum Cistus? — M.

5470. — **Destroying moles.** — Will anyone kindly tell me how to do this? My garden has been taken off a field and has many moles in it. — M. T. C.

5471. — **Shrubs under trees.** — I shall be much obliged if someone will inform me what are the best shrubs to plant under Horse-chestnut and Lime-trees? — K. K. B.

5472. — **Bulphuric acid and weeds.** — Will anyone tell me the proportion of sulphuric acid I should use to water for destroying weeds on a carriage-drive? — J. T. Gutesheim-on-Thun.

5473. — **Plants for a north greenhouse.** — Will someone kindly give me the names of a dozen plants suitable for a greenhouse (slightly heated) on the north side of the house? — T. S.

5474. — **Best Pea for market.** — Will someone kindly inform me which is the best pea to grow for market without sticks, and how should they be sown to be most profitable? — A. HERRICK.

5475. — **Blight on Beech-trees.** — Will anyone kindly tell me whether this disease eventually kills the trees? Also whether there is any practical treatment for it in the case of tall-grown trees? — FARRIS.

5470. — **Bulding plants.** — I should like to know of a good substitute for both the yellow and dark Calceolarias for bedding, and also the names of a few good winter hardy plants for carpet-bedding? — LINDSEY.

5477. — **Tree Carnations from seed.** — Will someone kindly tell me if Tree-Carnations raised from seed this spring are taken up in the autumn and put under glass will they bloom in winter? — A. READER.

5478. — **Wormcasts.** — Are wormcasts of any use as soil or as manure? I get a good barrowful from one rolling of my lawn in damp weather. They stick to the roller and are then scraped off. — A. H. C.

5479. — **Blood as manure for Vines.** — I have heard that blood is a good manure for Vines. Will someone kindly state if such is the case? Also what it should be applied, and in what quantity? — AMATEUR.

5480. — **Grafting an Aralia.** — Will someone kindly give me instructions how to graft an Aralia eleagnifolia? It has got very tall and bare at the bottom. Would Aralia Sibirica do for the stock to graft on? — HORTUS.

5481. — **Seeds of Castor-oil plant.** — Has long a few seeds of this plant, I should be glad if anyone will give me some advice as to soil, time of sowing, &c., and if heat is required to make the seeds germinate? — BOBMY.

5482. — **Fern compost.** — I should be glad if "A. J." or any other reader, would be good enough to give me instructions as to the making of a good general compost suitable for Ferns, Adiantum, and other Ferns? — READER, Plymouth.

5483. — **Spring sown Onions.** — Will someone kindly inform me something as to the culture of spring-sown Onions on light, sandy land? Good south aspect. My Onions always have grub. Will a quantity of soot be beneficial? — W.

5484. — **Planting Dahlias.** — I have some good Dahlia roots and want to get them in flower as early as I possibly can for sale. What is the very earliest that I may plant them in? I have no frame or greenhouse. — EXETERIAN, Wotton-in-Notze.

5485. — **Best Dahlias.** — I should be much obliged if someone would kindly give me the names of the best varieties of Dahlias, say 24 each of Show, Fancy, and Cactus. Also the title and publisher of the best work on the culture of Dahlias? — ROSE HILL.

5486. — **Cardinal Willows.** — I see in GARDENING, Jan. 27th, page 674, the Cardinal Willows are highly spoken of. Will "S. H." or someone else, kindly let me know (1) how far they should be planted apart? (2) Where can I get them from? — S. T. FISHER.

5487. — **Artificial manure for Vines, &c.** — Will someone kindly tell me what is the best artificial manure to apply to Vines (Linnæa) manure not being easily obtainable? Also for small fruit-trees, Citruses, &c., and Seakale? Nalire Guano has been suggested. — T. S.

5488. — **Arum Lilies.** — Would some grower kindly tell me if the miniature variety "Little Gem" and the yellow variety "Yellow Gem" are as tree-flowering as the ordinary tall-growing Arums? Also where a plant of the yellow variety can be had, and at what price? — ALEX.

GARDENING ILLUSTRATED.

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Founded by W. Robinson, Author of "The English Flower Garden."

FEBRUARY 17, 1894.

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CHRYSANTHEMUMS.

POMPONS FOR EXHIBITION.

POMPON and Anemone Pompon varieties of Chrysanthemums are particularly adapted for amateurs whose space is often of a limited nature. Not only do they require smaller pots than the Japanese and incurved sections, but they do not grow nearly so tall as the bulk of the sorts belonging to the named sections. Apart from these considerations, Pompon and Anemone Pompon Chrysanthemums are much preferred to any other kind by reason of their prim neatness and refinement, and also for the free manner in which they flower when cultivated as bushes. In this form they can be kept quite dwarf. My intention in this article is, however, to confine myself to the method of producing exhibition blooms. Opinions differ as to the manner in which the cut flowers should be staged for exhibition, whether in bunches of three blooms, one on each spike, supported several inches above the stem to show the foliage, or in bunches comprising an undefined number of flowers without any disbudbing. The former I regard as the most satisfactory, for under what is termed the "big bloom method," the real character of the variety is brought out, both in size, form, and colour. The foliage too is much better, which enhances their appearance, and in staging for exhibition a much more uniform stand can be obtained than by irregular-sized bunches. It is also much easier than for judges to determine the merits or demerits of a stand when an equal number of blooms are staged in all stands. Those possessing the greatest individual quality are bound to win. Like all other sections where quality of the blooms is the leading point, the plants require a long season of steady, uninterrupted growth to allow the shoots to mature properly. From such as these only can the best blooms be had. Cuttings should be inserted at once. If two are put into one 2½-inch pot they are easily repotted by dividing half the soil carefully to each. In this manner no great check is given to the plants. At this time of the year roots are more quickly formed than during the dull days of December. Under handlights in a cool house or even a newly-started vinery or Peach-house are good places to strike the cuttings in. Wherever they are placed they should be kept air-tight in the frame. A layer of coal-ashes on the stage under the handlights is the best means of affording this requirement. A cool, moist bottom is also assured. If the position is fully exposed to the sun the cuttings will require shade, especially if the leaves flag. The more this is allowed the longer they will be in making roots. Directly the plants are furnished with roots and will bear exposure to air and sunlight without the leaves flagging, remove them to a

SHIELF CLOSE TO THE GLASS in the same or another cool-house, where they can obtain abundance of air to prevent the growth being drawn up weakly. Do not top the plants, but allow them to grow till the first break occurs, when four or five of the strongest branches

should be selected, removing the others, also all shoots as fast as they appear from the main stems. Should a second break occur by the formation of a flower-bud early in August, the bud and the shoots must be again taken off, retaining only those branches which were selected at their first break, except that four more shoots may be retained to each plant, making in all eight to ten blooms on each. If the break occurs during the last days of August rub out the shoots then made, and retain the flower-bud formed at the end of each branch. These will produce large and well-formed blooms if all other details are carried out. Continue to pinch out any superfluous shoots that appear, so as to concentrate the whole energy of the plant into the selected buds. Pots 8 inches in diameter are quite large enough for Pompons, the soil and manner of potting to be the same as for the other sections, instructions for which will appear in GARDENING as occasion necessitates. House the plants from five to six weeks prior to the time they are required to be in bloom, placing them in a light position as near to the glass as possible. For the first shift from the cutting pots into those 4½ inches in diameter use the following compost: Two parts fibry-loam, one part leaf-soil (if available), and one part horse-manure partly decayed. If leaf-soil is not to be had use an extra quantity of horse-manure, adding a small portion of wood-ashes. If the loam is inclined to be heavy in texture add coarse silver-sand freely, but if of a sandy nature very little sand will be needed. At

ALL STAGES OF THEIR GROWTH provide plenty of space between the plants so that they may not be drawn up weakly, but be at all times stocky in growth. The following is a good selection of varieties in both sections:

POMPONS.—Black Douglas (rich dark-crimson), Charles Dickens (gold-tipped rose), Comte de Morry (bright purple), Golden Mlle. Marthe (bright golden-yellow), La Perette (white), Lizzy Holmea (canary-yellow, tipped-rose), Mlle. Elise Dardan (soft lilac-pink), Mme. Marthe (white, full solid bloom), Marabout (white, fringed florets), Mrs. Bateman (orange-brown), Nellie Rainford (buff-yellow), President (dark-rosy-crimson), Pygmalion (deep-rose), Rosiate (blush-rose), St. Michael (rich-gold-yellow), Vulcan (deep mahogany-red, florets tipped gold), William Sabey (canary-yellow, quite one of the best), William Kennedy (rich-crimson, shaded anaranth), William Westlake (rich-golden-yellow, suffused with a reddish tint), Maid of Kent (white).

POMPON ANEMONES.—Antonina (golden-yellow), Astrea (lilac guard florets, bluish disc), Calliope (ruby-red guard florets, red disc), Minc. Chalange, bluish guard florets, bluish shaded sulphur disc), Minc. Montels (white guard florets, yellow disc), Marguerite de Coi (bluish guard florets, yellow disc), Marie Stuart (pale-lilac guard florets, sulphur-yellow centre), Regulus (cinnamon guard florets, brownish disc), Perle (rose-lilac guard florets, pale-rose disc), Sidonie (lilac guard florets, bluish centre), Queen of Geneva (rose-crimson), Bossio Flight (sport from Minc. Montels, but of a deeper colour), Emily Rowbottom (cream-white sport from

Marie Stuart), Magenta King (magenta guard florets, yellow disc), Rose Marguerite (bright-rose).
E. MOLYNBEX.

5327.—Japanese Chrysanthemums.

—Rather than cut the plants down in May or June, as suggested, it would be better to top the plants when 4 inches high in the pots, and again when 5 inches more of growth has been made. After this allow all shoots to grow away at will, and all buds that form to develop blooms. The plants must not be crowded during any stage of their growth, especially while they are in pots. If the plants have not space to extend their growth properly, and not given abundance of air the shoots will be drawn up weakly, they will not produce nearly so many flowers, and must of necessity grow much taller. Gradually harden off the plants in frames before planting them out. "Traveller" must be guided by the locality as to whether they can be safely planted out in April or not. It is not wise to be too venturesome in this or the points of the new shoots might get nipped by frost. Such an occurrence cannot be any benefit—rather the reverse. Do not plant them in soil that is rich—a too luxuriant growth is not favourable to free flowering. Much better give the plants one or two copious soakings with liquid-manure, if the growth is not being freely made. What is wanted to give a quantity of good blossoms is a free and matured growth. Place a stout stake to each plant when the shoots are 1 foot high, to tie all the branches loosely, yet firmly, as growth proceeds. If the branches are allowed to fall on to the ground and there lie, as is very often the case, the appearance of the plants afterwards is not enhanced by the crooked state of the branches. Early in September cut around each plant with a spade at a distance from the stem as will allow for potting. When the plants are lifted for potting at the end of the month, they will not then feel the check nearly so much as though they were dug up direct and potted. A position behind a north wall will suit the plants for a week or so after potting, syringing them twice daily to prevent flagging.—E. M.

5497.—Electricity and plant grow-

ing.—The late Mr. Siemens tried experiments with electricity in growing flowers and fruits. I do not think it was ever stated what result was arrived at, but I expect it was only partially successful, as nothing has been heard of it since, and if electricity could have been usefully applied something more would have come out of it before this. I think the idea current then was that plants under the influence of the electric light would grow night and day, or, rather, the progress would be much greater. But would the plants stand the unnatural excitement? This difficulty was not settled by the experiments in question. No doubt plants will be much healthier in houses where the electric light is used, as it does not sear and vitiate the atmosphere in the same way that gas does, and therefore the use of the electric light becomes a general plant culture in houses will be much easier and more successful.—E. H.

GARDEN WORK.*

Conservatory.

The cuttings of Chrysanthemums are now pretty well all put in, and the early-rooted plants are ready for shifting into 5-inch pots; a cool air, however, is the best place for them now till it is safe to place them in a cold pit, which will be shortly. Everybody should grow a good group of Mme. Desgrange; it is one of the best and most useful of the early-flowering varieties, and if the buds are thinned the flowers come much finer. Winter-flowering Salvia are deserving of more consideration than is given to them; by growing several varieties a long succession of bloom can be had with very little trouble, as all one has to do is to strike cuttings now and pinch the leading shoot a few times, and plant out in an open situation end of May, and pot up in September. Splendens, Brunita, Piteheri, Bethell, albo-corulea, and gessneriflora are all good; the last named is a late bloomer. Late Cinerarias just coming into bloom will be improved by liquid-manure. Those who have a good habited, large-flowering strain should save seeds from the best; they will seed freely in a cool house during spring, and the seeds will be ripe in time to sow for next season's blooming. There is very often a difficulty in getting seeds to a good extent from the wholesale dealers. Stake early-flowering Pelargoniums; just enough stakes should be used to open the plants out and no more. Keep down green-fly either by fumigating or dipping in an insecticide. Promptitude in dealing with insects is very important, as when plants are badly infested it takes so much fumigating to clear the insects off. Azaleas, Indian and Japanese, are very prominent now in the conservatory; very weak liquid-manure will be beneficial to pot-bound plants twice a week or so. There are plenty of bulbs in bloom now, but there is nothing more beautiful in a quiet way than the groups of Freesia, which are flowering very well this year. After flowering the bulbs must be gradually dried off on a shelf near the glass, and then kept without water till August, when they can be repotted. Young Cyclamens sown in autumn, which have been grown in boxes, should be planted in single pots, and as soon as the roots have worked through the soil, be shifted into 6-inch pots, and early in June moved to cold frames placed in a shady situation. Turfy loam and leaf-mould in about equal proportions, made fairly porous with sharp sand, will suit them. It is late now to sow Cyclamens for blooming next winter if really good plants are wanted. Plants raised now will bloom, but will not be as freely as if the seeds are sown in August or even earlier, and the plants kept growing steadily all winter. The bulb under this treatment grows strong enough to produce good foliage and abundance of fine blossoms. Lay in a good stock of loam, leaf-mould, peat, and sand for potting purposes. Drainage materials and clean pots will be required.

Unheated Greenhouse.

The White (Madonna) Lilies are now throwing up spikes; these will be charming towards May-day. In many gardens these are largely grown for the cool conservatory, and they will bear gentle forcing so as to get them in bloom by Easter in most seasons; but Easter comes early this year. Gladstone The Bride is a charming bulb for the cool-house; the bulbs can be plunged in Cocoa-nut-fibre till all danger from frost is over, and, if necessary, covered with paper on cold nights. Double Wallflowers, Brompton Stocks, Canterbury Bells, Clove and other Carnations, Mrs. Sinkins and Her Majesty (Pinks), Scarlet and other Anemones, and all the hardy kinds of bulbs will be in blossom or coming on now. On the whole, I don't think the owner of the unheated greenhouse has any need to envy those who have the care and expense of heated structures. The Christmas Roses have now pretty well done blooming under glass, but they must not be turned out till the weather is quite settled.

Stove.

Growth is becoming active now. Many Orchids, Ferns, and other plants will now or shortly require repotting. Healthy young plants with vigorous roots may be shifted on with a ball entire; but in some instances, doubtless, the soil will be sour, and the balls must be reduced. This is the season when plants will make new efforts to extend themselves, and the growth will require regulating to the extent, in some instances, of cutting back in order to get new growth from the bottom; this refers more especially to soft-wooded plants, such as Begonias, Fuchsias, and Stocks. Move relays of Tuberoses into heat to ensure a succession of flowers for button-holes and sprays. Shake out and repot Caladiums, using loam and old manure for the strong-growing kinds; the small, delicate sorts, of which argyrea may be taken as the type, will do better in lighter compost, freely mixed with clean, sharp sand. This last-named Caladium makes a beautiful dinner-table plant.

Pines.

Lay in a good stock of rich, turfy loam for repotting the general stock of Pines early in May; this will form the bulk of the material required. A little soot or bonedust, or very old manure must be used for the last shift, especially where comparatively small pots are used. If will also be necessary when the repotting takes place to renew the plunging-beds; it can be used in these should be got in and exposed to fermentation in an open shed, if possible, to fit it for making up the beds, and replugging the plants immediately after potting. Plants which are just throwing up fruita may have a little more heat, and liquid-manure may be given in a weak state every time the plants are watered. The plants should be looked over twice a week now, though it will not follow that every plant will need water so often. A good deal depends upon the construction of the house or pit and the heating. Sixty-five degs. at night will be high enough for the present; 60 degs. will do for successions and suckers.

Early Orapes.

The Black Hamburgs and Foster's Seedlings will now be thinned if started early in December, and if in pots more nutriment should be given. It is a good plan to

enclose the pots with rough turfy loam and manure. The roots will work out after 16, and then an outside compost can be substituted by the application of artificial manure; this is a better way of feeding them, keeping the roots within the pots and deluging the soil therein with strong liquids. Rub off all sub-laterals below the bunches, and there will be but little growth left beyond the bunches except the two leaves, which is usually as much as there is room for when the Vines are trained near. In the case of pot-Vines, where it is desired to obtain as much from the house as possible, the roots need not be trained further from each other than 2 feet. The Vines will be run out and young canes take their place next year. The hot-bed for propagating may be started now. Except a properly-constructed house, fitted with a tank for bottom-heat, there is no system of propagation better or cheaper than the old-fashioned hot-bed made large enough to keep up its heat for three months. The plunging-bed inside the frame may consist of sawdust or Cocoa-nut-fibre, and all plants except Pelargoniums may be propagated in such a bed with the greatest ease from this on to May or later.

Window Gardening.

When bulbs go out of bloom more them to a spare window, and give enough water to keep the growth fresh, so the ripening process may be a gradual one. Cuttings of Zonal and other "Geraniums" will root now in sandy soil. Do not crowd too many cuttings in a pot or they will damp off. Ferns which are starting into growth may be repotted in clean, well-drained pots; some of the old soil should be shaken away. Be careful in watering after repotting; let the roots feel the new soil before much water is given, and then healthy progress can be depended upon.

Outdoor Garden.

So far as regards the general collection of Roses, it is not too soon to prune, but Roses on walls and arches, where sheltered, may have the longest shoots shortened a little and the weakly shoots cut out. Roses on warm borders intended to produce early flowers for cutting may also be pruned, and newly-planted Roses which were planted with the wood unshortened may have the longest shoots reduced to relieve the strain upon the roots. This is perhaps a small matter. The principle of reducing the top in proportion to the loss of the roots soon after the plants are lifted is, I think, a sound one. Of course the plants will be cut back further later on. Anything done now or when the Roses were planted is only with the view of relieving the roots a little till roots begin to form, and as root-action, in the case of Roses, will take place almost as soon as the plants are firmly fixed in the ground, by the time the final pruning takes place the new roots are prepared to begin working. To improve the value of early-planting, I have replanted Roses which had been laid in in the autumn at various times during winter and in open weather; there is some movement of the roots to get a firm grasp of the soil. In another way this illustrates the value of firm planting. A plant loosely fixed in the soil cannot begin to work until the soil presses the roots closely, and unless the plants are firmly fixed in the ground by treading, the natural action of the soil taken time, and in the meantime the plants may die. I am persuaded a good many plants die from being loosely placed in the soil. Get all borders dug or forked over, and, if necessary, manured, to be in readiness for seed-sowing next month.

Fruit Garden.

Strawberries for forcing may be placed in heat in larger numbers now. Start them in a temperature of 50 degs. at night, and when some progress has been made raise the temperature to 55 degs. or a little more, and when the berries are set and thinned raise the temperature to 65 degs. if early Strawberries are required. Strawberries are unlike many fruits which are forced. It is not necessary, except in the case of pushing them on rapidly, to continue increasing the temperature. Though they will not be so early, they will be quite as good if brought on in a low temperature all through their growth. Strawberries in bloom must be helped with the camel-hair brush. A light dusting over with the syringe on a bright morning about 10.30 to 11 a.m. will help to disperse the pollen, and pretty well the same thing will happen with Peaches if syringed when in full bloom. If there comes a dry, hot day, this under glass when Peach-trees are in bloom, I have often noticed that the blossoms do not set so well unless the syringe is used. It is interesting to notice different kinds of Pines when a number of trees are growing under the same conditions in one house. The Royal George, as is well known, is one of the best setting and cropping Peaches in existence. It is not so large as some, but it is certain to come right. Dynamite, River's Early York, and Gross Mission are good setters. The trees which usually carry the lightest crop under glass are Waterloo, Alexander, and Noblesse, though Waterloo sets well outside on a sunny wall. It is difficult to make young trees under glass moderate their growth. The conclusion I have come to is that the moment it is noticed a tree is making wood of too strong a character, as soon as the leaves fall off the roots; this effectually checks over-luxuriance. Melons now making progress may have a night temperature not under 65 degs., with a comfortable bottom-heat.

Vegetable Garden.

Late sowing generally means late gathering, especially as regards early Peas. When the middle of February is here there is no time to lose. I do not say seeds should be sown, but sown in respect to the condition of the land; but as soon as the surface is dry and the soil works kindly get early crops of all the things which are required as soon as possible. A great deal may be done with hot-beds now. Not an inch of space should be wasted. When frames are used for forcing Sea-kale and Asparagus, as soon as the produce has been cut, turn out the roots, stir up the soil, and add more if required, and till up immediately with another crop, such as early Potatoes, Horn Carrots, or Paris Market Lettuce. Be advised to call flowers at this season in heat sow a few seeds of Veitch's Autumn Giant, unless a sowing was made in autumn. By sowing now in heat and helping the plants on as much as the early varieties, the plants will come in useful in August and later, when it hot and dry, the early kinds and Walcheren will be quite useless. This is a very valuable quality in this time of year; no matter how dry the weather will be, the plants will get rough and unusable. The only objection to it

is it sometimes on rich land gets too large. Celery is generally lasting out well this season. There has been no sharp frost to injure it much, as the week's sharp weather was had but scarcely any harm. Early Potatoes may be planted on the early border. I expect there will be more Myatt's and Beauty of Hebron Potatoes than any other planted in small gardens; they are both reliable. E. Hobbart.

Work in the Town Garden.

It is time that seed of Tomatoes was in now. These plants require a long period of growth before producing the first ripe fruit, and though they will stand a good deal of heat in the earlier stages, too much only weakens them, and in any case amateurs seldom get their plants to grow as fast and strong as those who have to make a living out of it. Tomatoes sown in January ought to ripen their first fruits in May, and those started in February in June, but it is not everyone who can do this. The manner in which the culture of Tomatoes has spread during the last few years is really astonishing, and if the total extent of glass devoted to this crop throughout the country could be ascertained it would be found to be almost incredible. I know that the number of specimens of this subject on the subject I am constantly receiving. Even plants for outdoor culture should be raised this month, if possible, for large and strong examples in 6-inch or 7-inch pots, turned out at the end of May, will begin fruiting directly, and the best part of the season be thus benefited by, instead of being lost as when small, late-sown plants are used. There is not much to see or be done in the outdoor garden yet, the only plant that seems to be capable of blooming at this season where there is any smoke about being the Mezeron (Daphne mezereum), which is at present a perfect mass of rosy-lilac blossoms. The Winter or Naked-flowered Jasmine, too, does well in towns, and every garden ought to obtain a specimen or two of both these charming plants. The next thing to bloom will be this beautiful flowering Almond, a free which grows and flowers profusely anywhere. Crocuses and Snowdrops are making a pretty show now; if birds stick the blossoms in a few turns of black cotton just above the rows or patches, securing it to short sticks. In a cold frame or house common Primroses are a mass of bloom, and there are some flowers on the Christmas Roses yet. What a pity it seems that we cannot get Violets to flower, and scarcely to grow, in town gardens! Vines, both indoors and out, should be pruned without delay; those under glass may be started at any time now, though where there is only Crocuses, for example, as a rule allowed to take root. A few Strawberries in pots are very interesting, and, with due care, will produce some welcome fruit; they may be brought into a fairly warm greenhouse at once, the best place being on a high shelf near the glass. Keen's Seedling and Noble are the two best sorts for town gardens but the latter is sadly deficient in flavour. B. C. R.

THE COMINO WEEK'S WORK.

Extracts from a Garden Diary from February 17th to February 24th.

Took up the remainder of the Jerusalem Artichokes; selected the best shaped medium-sized tubers for planting, and placed the others in a store to be ready for use when required. Took up more Rhubarb-roots for forcing in Mushroom-houses. Gave the ground intended for Onions a dressing of soot and forked it in lightly. Sowed Brussels Sprouts in a warm border; a few seeds have also been sown in box under glass as it is important to raise some plants early. Planted Cauliflowers under handlights; also a row in a trench close to front wall of forcing-house. Sowed a box of seeds in warm house. Made up a slight hot-bed for sowing seeds of Celery in frame. Cleared out exhausted Mushroom-beds, and made up new beds for succession. Watered beds in bearing with warm liquid-manure. Sowed Mustard and Cress in boxes two or three times a week as required. Filled up winter Lettuce-beds and planted new beds. Took remaining Peas, and sintered and dug land for next crop. Sowed Peas and Beans for succession. Put sticks to autumn-sown Peas. Sowed seeds of Lockie's Perfection Cucumber. Potted off Tomatoes; shall keep them on stages near the glass in a warm house. Made a new plantation of Sea-kale by planting the thongs or roots cut from the strong crowns when taken up for forcing; they were planted in rows 13 inches apart and 18 inches apart in the rows. The sets were planted in a dibble, just covering the crowns. The cuttings had been laid in slant sand and had begun to form new crowns on the upper ends of the roots. Such roots make strong crowns suitable for forcing in one season. Prepared a piece of ground and drew drills 18 inches apart and sowed Asparagus seeds of the Colossal variety, which, I think, comes into bearing rather earlier than this common variety. Put in cuttings of various things, including a lot of set plants, such as Crotons, Dracenas, Epiphyllums, Begonias, and Begonias, and dividing some to increase stock; but a good many of the common sorts are raised from spores. Usually the Ferns and a good many Alliumiums, Polydiumms, &c., come up all over the house from the spores, which are scattered from the plants as they ripen. Several species of Aspidium and others, which are viviparous, are propagated by cuttings of the fronds. Sowed more Tomatoes, including Perfection, Ham Green Farouquia, and Glamorgan. Looked over Peaches and Vines in forcing-houses to thin young wood and to down. Thinned Grapes in early house. Gave inside borders a good soaking of warm water. Put in a few more Chrysanthemum-cuttings of late sorts, of which cuttings have been rather scarce. Potted on young Fuchsias. Stirred the soil among beds and borders of spring flowers. Forked up borders chiefly occupied with bulbs. Finished pruned and training Peach-trees on walls. Took up and replanted Box-eggs in the new greenhouse. Took up Peas, which, in order to obtain some effect at once, were planted rather thick. Moved more Strawberries to forcing-house. Used camel-hair-pencil among plants in bloom about 11 a.m. Shifted on young Palms into 5-inch pots. Potted off bedding "Geraniums." Divided a lot of Lobelia fulgens and potted the offsets. Stopped tying and top-dressing the borders in stone. Planted forcing Beans for succession.

* In cold or northern districts the operations referred to under "Garden Work" may be done from ten days to a fortnight later than is here indicated with ground and soil.

GRAFTING A BAD PRACTICE.

The art of grafting is in many respects a great nuisance, although the nurserymen will not be easily persuaded on that point. Trade customs and practices notwithstanding, however, it is pretty clear the practice of grafting everything upon something else does a lot of harm, and in regard to a great many ornamental shrubs is the cause of their being neglected and left in comparative obscurity. In the course of extensive planting of trees and shrubs for some years past I have had many curious experiences, and some absolute failures. A quantity of the Fiery Thorn (*Crataegus Lelanii*) was planted where a fringe of low lushy growth was desired. The following year a plentiful crop of Quince suckers appeared, and it was simply a case of the survival of the fittest, which, of course, was the strongest, so the Quinces were transplanted elsewhere. This shrub can be raised in any quantity from seed, and I have since made other plantations of seedlings with the best results. The little single and double Plume and Almonds, some of the prettiest shrubs of spring-time, are among the early failures so grafted plants. If happily they are established on their own roots they are not likely to disappear. Of course, the nurseryman says we should

WATCH FOR AND REMOVE the suckers as they come, but when one has all the lovely flowering shrubs, this is not a simple matter. It is an endless job. It is absurd to suppose that this grafting either adds to the vigour or in any way assists the plant to make strong and healthy growth. The very opposite generally happens. It is crippled by an unhappy alliance or union with something else, never shows its true character, but ultimately dies. The moral is a very simple one. Avoid grafted shrubs. It will need close observation to see that they do not come in unawares. Last year a very interesting Bramble, with large Hawthorn-like leaves, named *Rubus crataegifolius*, came to me and was duly planted. There were three plants, but they are all dead, victims of grafting. The last one, which had made some growth, I had taken up recently to remove elsewhere, but its stock had died clean away, leaving a rootless branch. The new

RED BROOM (*Genista Andreana*) is now being generally distributed, but most of the plants I see are grafted, and that means future trouble and many deaths. This shrub will strike from cuttings, and therefore it can be had upon its own roots, and will begin to flower before it is a yard high. Those who plant specimen Conifers of the choicer kinds should see that they are not grafted, for the practice is a special abomination with regard to these. The height of absurdity was reached among Conifers by grafting the Deciduar upon the Larch—an evergreen upon a summer leafing tree! The only recommendation that grafting has is it is an expeditious method of raising stock, but it has also and truly been called fraudulent, for it is a species of fraud to distribute plants upon foster roots that linger for a time only to be choked to death in the unequal contest between root and branch. What is true of ornamental shrubs, to which these notes have special reference, will also apply to standard fruits, and it is now clearly proved that our

BEST APPLES will grow as well and fruit so finely upon their own roots as upon those of the Crab or any other stock. The Medlar is a charming tree in leaf, flower, and fruit, but it is often crippled by grafting. I have just chopped down three standard trees that have been six years planted and have hardly made any growth. Certainly the diameter of the head of the tree has not increased 1 foot in the six years. The reason is that the Medlar is grafted on a Pear-stem, and the Pear is on the roots of something else. Other Medlars planted at the same time have made nice trees, but they are grafted on the Hawthorn. Inquiries in many directions have failed to find out anyone who has the Medlar on its own roots, and yet it is a native tree and knows no grafting in its wild state.

A. H.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruits and vegetables for drawing. The drawings made will be engraved in the best manner and will appear in due course in GARDENING ILLUSTRATED.

TREES AND SHRUBS.

CHOICE FLOWERING PLANTS.

HIMALAYAN HEATHER (CASSIOPE FASTIGIATA).
CASSIOPE is a limited genus of ericaceous plants generally grown in gardens under the name of *Andromeda*, but now separated from that genus, which contains only one species (*A. polifolia*), a native of our own moors. They are extremely pretty plants, and should find a place in all collections of hardy flowers, the chief requisites to their successful cultivation being peaty soil well drained, as they are all extremely impatient of stagnant moisture about their roots and absolute shade from the midday sun. The best plan is to raise small mounds of peat, and plant them on the top, taking care that they do not wait for water both at the roots and overhead. They are increased by division, rooting freely when pegged down. *C. fastigiata* (here figured) is decidedly the handsomest of this small group of plants, few of which are in



Himalayan Heather (*Cassiope fastigiata*).

cultivation. As an alpine species *C. fastigiata* ranks among the best plants we possess; it may be grown without much trouble in company with the more common *C. tetragona*, a species much inferior, though oftener met with. Its range of altitude is pretty extensive. Sir J. D. Hooker, in his "Himalayan Journals," says: "I prepared to camp on the mountain-top, a broad bare flat, elevated 13,080 feet, and fringed by a copse of Rose, Barberry, and alpine *Rhododendrons*. The Himalayan Heather (*C. fastigiata*) grew abundantly here, affording us good fuel."

5486.—"Cardinal" Willows.—The distance apart at which these should be planted can best be decided by the area it is intended to plant. For a speedy effect they must be thickly planted at from 4 ft. to 6 ft. apart. They will soon, however, require thinning if placed at this distance. The habit of growth of this Willow is somewhat erect and rigid, after the manner of the Lombardy Poplar, but possibly with age it may become more spreading. The Yellow-barked Willow

(*Salix vitellina*), of which the Cardinal Willow is said to be but a variety, makes a spreading tree when large. I have not, however, seen any of the Cardinal Willow more than 16 feet or 18 feet high; but it is comparatively new, as it was only sent out in 1878-79, and some years then elapsed before its high merits were recognised so an ornamental tree. It is not the rule to recommend particular firms in these pages, but the nurseries to which I alluded in my article were those of Mr. Anthony Waterer, Messrs Jackman, and Mr. W. Slocock, all of which are at Woking, and in all of them I saw quantities of this special Willow on the occasion mentioned.—A. H.

5506.—Hedge for a wind guard.—In this case certainly the Privet would be a very poor and ineffectual thing, because a hedge to give shelter must have some degree of height, and a high Privet-hedge would be in danger of partial or complete prostration. It is better to wait a little longer for the growth of something else if a hedge that will answer the purpose required of it is ultimately secured. A good hedge gives as much shelter so a wall. I was recently standing behind a line of natural unclipped Hollies during a tremendous gale, and yet could not feel the slightest force of the wind. I can hardly recommend Holly to "Faber," however; it would be too slow. Perhaps he would try Lawson's Cypress (*Cupressus Lawsoniana*). This grows very rapidly, bears any amount of cutting, and I have seen perfect wind-breaks 16 feet high made with it. It is now plentiful and cheap in the large nurseries. The Beech makes an excellent hedge, and there are some magnificent hedges of it, enclosing and sheltering large portions of the kitchen garden at Livermore Park, Bury St. Edmunds. The common Yew of course is first-rate, but comes rather more expensive. I recall to mind another large hedge composed of Cherry Plum and Hawthorn, the first-named being a rapid grower whilst a mixture of Quick gave it greater density. Almost everyone thinks first of Privet, but I would place it last always, and always find things for a hedge for ornament or use without calling upon it.—A. H.

5499.—Propagating variegated Holly.—The variegated Holly may be increased from cuttings if you take shoots of the current year's growth about the end of July, and insert them in sandy soil under a glass-light where they are shaded one half the day. Only the young wood will make roots, and this must be shaded from bright sun at first, and kept close until late in the following spring. You had better make up your mind to allow them to remain two years before you move them. In nurseries variegated Hollies are increased by grafting, but that is tiresome work for an amateur.—J. C. C.

5488.—*Hydrangea paniculata*.—Cuttings of the young shoots will strike under a hand-light in summer, and cuttings of the ripe wood will root in a shady border if put in as soon as the leaves fall, and the plants are easily propagated from layers.—E. H.

—These may be easily struck from cuttings of the soft wood—at any rate, I once struck a good batch. The shoots were taken when young in spring after they had made about 2 inches of growth. They were cut off with just a small heel of the old firm wood attached, prepared and inserted in the usual way, and placed under a handlight in a propagating house. If "Mr. Selden" follows the usual plan of cutting the plants down annually he will have no difficulty in getting suitable cuttings whether the plants are out-of-doors or in

I should think that layering would also answer, and this is easily performed with plants in the open ground.—A. H.

WHITE JEW'S MALLOW (RHODOTYPOS KERRIOIDES).

This is a beautiful deciduous shrub from Japan, with a growth and foliage recalling the familiar old Jew's Mallow on cottage walls, but with



Flower of White Jew's Mallow (*Rhodotypos kerrioides*.)

white flowers resembling single Roses (see cut). It is of slender growth, but makes a dense bush when well grown, and is usually 5 feet or 6 feet high, though against a wall it reaches a height of 10 feet or 12 feet. It flowers in May, and keeps in bloom a considerable time. B.

5493.—*Ozothamnus rosmarinifolius*.—Certainly this might be grown as a pot plant in a cool greenhouse, and treated well it would doubtless soon become a very pretty and most ornamental thing. It might be stood outside during the heat period of the year. As regards its adaptability for out-of-doors in the North of Scotland if the place is a favoured one a trial might be made with it, choosing a sunny as well as a sheltered spot.—A. H.

5471.—*Shrubs under trees*.—Very few shrubs will grow well under the Horse-Chestnut; the most likely things to grow would be Butcher's Broom, Aucuba, Yucca, St. Julian's Wort, Green Ivy, including the Arborescens or Tree Ivy, and hardy Ferns. The Lime-trees being less dense of foliage, Laurels, Hollies, Yews, Boxes, and Evergreen Barberries will succeed. It will be necessary to soil some fresh soil and dig up the ground before planting anything.—E. H.

5411.—*Treatment of Euonymus*.—It is not the salt in the water and atmosphere which makes the *Euonymus* grow so freely round the coast. It is a mild, genial climate and the absence of frost. Salt and water applied artificially will not benefit the plants.—E. H.

5520.—*Deutzia gracilis*.—Your plant of this pretty shrub will not flower to any great extent unless it made some healthy shoots after the bloom of last season was secured. It blooms upon the wood of the previous season, and although it may be pushing out growth again, you alone can judge from the above whether it will be worth house room. The temperature you name is suitable, as it will increase shortly.—P. U.

5469.—*Propagating Gum Cistus*.—These are readily increased by cuttings of healthy wood taken off as soon as the points commence new growth. About the early part of April is a good time. Three inches long, and inserted in a compost of sand, leaf-soil, and peat, well syringed and kept close until rooted. A hand-glass over them in an ordinary greenhouse temperature will suffice, but a slight bottom-heat affords material assistance.—P. U.

5601.—*Ophiopogon Jaburan variegatum*.—This is a Japanese plant, and is nearly, if not quite, hardy. It will live on a well-drained rockery, and it is also a rather pretty room or window plant, producing slender spikes of blue flowers in spring or early summer. It is not difficult to cultivate, but if grown in rich soil, to a certain extent the plant loses its variegation. It will grow very well in the shade in summer with Ferns and foliage plants in a cool-house or in a heated greenhouse.—E. H.

FRUIT.

FERMENTING MATERIAL FOR OUTSIDE VINE-BORDERS.

At one time fermenting material was more largely used than it now is for covering the outside borders in which early forced Vines were grown. Not that its discontinuance has improved the quality of early Grapes, as with all our boasted advancement in fruit culture, early Grapes are not grown any better, or so good as twenty years ago; in fact, really good Grapes at the earliest shows are far more of a rarity than they used to be. The variety principally relied upon for forcing (at least for early work) is the Black Hamburgh, that will put up with almost any abuse and yet come out passable in the end. There is, however, a limit to its enduring powers, and the production of really good early Grapes of this variety is something to be proud of. Often, however, they are poor in colour, and instead of the bunches being compact, with the berries of a nice black colour, also carrying a good bloom, they are the very opposite and also marred by slanking. This latter is an evil much on the increase in early forced Vines, especially in the variety above noted. There is nothing in the cultivation of Vines more annoying than to see the bunches decrease in size. Generally this is the result of defective root-action. It has become very much the practice to allow the borders to remain uncovered until forcing commences, the belief being that when the borders are covered the Vines do not receive that thorough rest they should have. To a certain extent this is not borne out by facts. To cover the border up so that frost cannot reach the surface may be an evil, but not so protection from wet or snow, which may easily be secured by using shutters or sheets of corrugated zinc. I use both, and also spare lights. Borders covered with fermenting material when forcing commences are just in the condition to derive marked benefit. It is those borders which are covered with a layer of manure early in the season without further sheltering that are in danger of being spoiled by mistaken kindness. A heavy fall of snow will often penetrate deeply, and the soil about the roots will then be cold and damp; consequently, if fermenting material is now applied, these borders cannot be expected to derive such marked benefit as others which have been covered with a few dry leaves and boards.

COVERING VINE-BORDERS with fermenting material without using boards is not the best means of treating them. In the first place, a greater depth of material is needed, and even with this addition it does not retain the heat so long as a much less bulk if this be covered. For covering outside Vine borders I have great faith in the bulk being tree leaves, Oak or Beech for preference, as being of a hard nature they heat the more readily, and also retain the warmth for a lengthened period. I use Beech leaves, and they maintain the heat well. Last year early in January I covered the border of a large Hamburgh house with quite three parts leaves to one of litter, putting it on to the depth of 2 feet near the front wall, and the heat was retained well on to the end of April. But the above would not have been the case had not the border been further covered with proper Vine-border boards. In the above case the roots worked well, and the Vines ripened off a fine crop of early Grapes, the berries and bunches being of a large size, as they always are on the Vines in this house, although they must be quite fifty years old. I firmly believe that a gentle hot-bed is of great assistance for covering the roots of early forced Vines—that is, when the border is partially inside and out. With this assistance I think Vines also break more strongly and evenly. The reason no doubt why the system is not practised so much as its merits deserve is the labour attending it. By using the greater part of good leaves with a portion of stable-litter, sufficient heat will be maintained quite long enough for the Vines to benefit by it. A.

5479.—*Blood as manure for Vines*.—Blood is a powerful stimulant, and it should be used in its fresh state with caution, and as an experiment at first by those who have had no experience with it. In its fresh state, when it will mix with water, dilute it with six times its

weight of water, and apply it liberally to both inside and outside borders during spring; say, twice during the season—first, when the Vines have just burst into leaf, and again after the Grapes are thinned. If the blood has become congealed it should be used in the form of a compost, mixed with wood-ashes or burnt or charcoal earth, and in this condition it is difficult to give directions as regards quantities. Something depends upon the condition of the border as regards drainage, &c., but it is better to err on the right side than do too much.—E. H.

PEAR "PITMASTON DUCHESS."

This is a popular though not a high-class Pear. There is no connection between it and Duchesse d'Angoulême, which is a coarse, gritty French Pear, later in ripening, valuable for market, but nearly always second-rate in our climate. It bears a much stronger resemblance to Marie Louise in all but flavour, but grows much larger, and medium-sized fruit can also be distinguished readily enough, owing to there always being a patch of russet near the footstalk. Naturally, much the finest fruits are usually obtained from well-grown wall trees, the fruit also being more pyriform and clear in colour than is the case when the trees are grown in the open. Wherever the fruit is grown the same failing in the quality prevails, an unpleasant acidity generally offending the palate of all who appreciate a really good buttery Pear. There is yet another failing, and that is the thinness and sensitiveness of its skin. The fruit grown against walls, if carefully handled and properly packed when sent to a distance, is beautifully clear, but that obtained from pyramids and bushes is very apt to present a much-scratched, bruised appearance when fully ripe. This I attribute to wind-waving and contact, it may be, with leaves and branches; but it is so very marked and almost inevitable, that had I any to market I would send them before they were fully ripe. The season of this productive Pear is said to extend from October to the end of November, but, as a rule, the fruit will not keep so long as that, the middle of November frequently seeing the last of it. Quite young wall-trees produce fruit, while those six years old and upwards yield grand crops, which, if freely thinned, as they must be if samples 1 lb. or little less in weight are desired, pay remarkably well. Cordons with one or several branches also produce exceptionally good crops of fruit, and no collection of wall-trees may, therefore, be said to be complete unless it comprises one or more specimens of Pitmaston Duchess. This remark applies with still greater force to pyramid and other low standard trees, but these, for reasons already given,



Pear "Pitmaston Duchess."

ought always to be located in a somewhat sheltered position. If a fairly healthy young tree is planted on moderately good ground, the preference being given to a site where the sub-soil is of a gravelly nature, it will, without much further trouble, quickly develop into a bush naturally grown pyramid, and produce several bushels of fine fruit whenever the season is not dead against fruit-trees generally. G.

5520.—**An old orchard.**—Seeing that you have gone so far with the expense of trying to renovate the old trees in the orchard, you cannot do better than work out your own ideas, and wait the result. Were the trees mine, I should tremble for their safety next summer, seeing that you have cut asunder all the roots to within 2 feet of the hole. I think you would have done better if you had grubbed out all the trees, and devoted the coming summer to cleaning the land from weeds, and planted the ground in the autumn with young trees. Why run the risk of using paraffin with the lime when the latter alone will destroy the Moss?—J. C. C.

5523.—**Heating a Vinery.**—I think you have been very patient, and I am only surprised that you have not sought for advice earlier. If you are not forcing your Vines in either house quite two thirds of the fuel you are now consuming has been burnt to waste. For a cold vinery a temperature of 45 degs. by day with fire-heat is quite sufficient, and 5 degs. less at night will keep everything safe. As to a temperature of 100 degs. by day with the ventilators open doing no harm it is perfectly absurd. Your case is, however, only one amongst many in which fuel is consumed in waste in gardens. Hundreds of tons in as many small gardens are wasted every year, and the plants the heat is intended to benefit are weakened if not spoiled by it. I have known many instances where the cost of fuel unnecessarily consumed by men who do not understand their business would have gone a good way towards finding the increased pay that a more skillful man would require.—J. C. C.

5521.—**A small vinery.**—Black Alicante is the easiest of all Grapes to grow. This ripens well and would be ready for sale about Christmas. Gros Colmar is perhaps a trifle better Grape for sale, but is not nearly so easy to grow, and requires much more fire-heat to finish it well. If the former variety is chosen the Vines should be started, say, the first week in March, at a temperature of 50 degs. at night, and about 65 degs. by day. Let the Vines have the benefit of the fire-heat until the berries are thinned, when, if the weather is mild, they will do well without artificial heat. But in the case of cold nights it is wise to light the fire, even if only for a few hours. To allow the temperature to fall below 60 degs., for instance, at night is injurious to the crop. During the dull and often damp days of autumn artificial heat will be necessary to dispel damp from the vinery, or the berries will decay. One-year-old canes are the best for planting. Cut these down to within two eyes of their bases early in March, to induce the rods to grow stronger the first year. Although two eyes are left on the canes, it is only intended that one shall remain; the other is a safeguard in case of accident. A space of 3 feet should be left between each Vine. Nothing is gained by crowding them.—S. P.

5515.—**Pear "Louise Bonne of Jersey."**—This is a case of canker, owing to the soil being unsuited to this variety. I should be surprised to hear that the soil in which the tree is growing is not of a heavy, retentive nature. Soil of this texture is generally quite unsuited to the growth of this Pear. Lift the tree at once, removing the soil to a depth of 15 inches and 3 feet wide, replacing it with road-side refuse, old potting soil, decayed vegetable refuse, and wood-ashes, first thoroughly breaking up the subsoil, to allow of a quick percolation of water from heavy rains. Plant the tree on the surface, making up a slight mound around it. In time this will settle to the natural level of the ground. Mulch the surface with 3 inches of partly-decayed stable-manure, or decayed vegetable refuse. Pare off the cankered parts of the bark, and rub quicklime into the parts affected.—S. P.

5348.—**Treatment of Chinese Primulas.**—The seed of Chinese Primulas may be sown at the end of May or early in June, and again at the end of July for a succession. You will require a warm frame for the seed. Fill a 5-inch pot or shallow pan with well-prepared soil, light, and crock the pot or pan well to assure perfect drainage, without which it is hopeless to expect good results. Water the soil through a fine rose ~~was not~~ and cover with the seed thinly, and carefully covering with fine soil. Place a glass over it to promote quick

germination, and when the seedlings appear prick them off into other pans filled with the same compost, and from there pot them on. A good light loamy soil suits them best. They require a warm temperature at all times, and to be kept near the light; otherwise the growth gets weakly and drawn.—E. F.

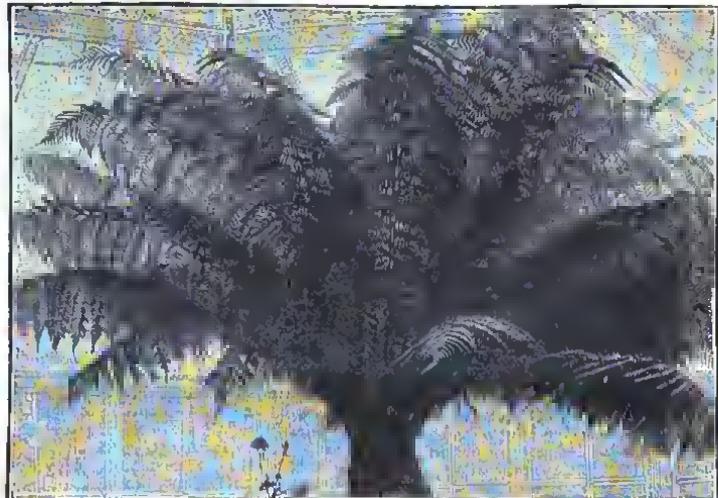
5427.—**Peach dropping its buds.**—If the tree has not dropped its buds before it is quite safe to conclude that something is wrong in the treatment. If the foliage was much injured by red-spider last summer—a not unusual occurrence in such a hot dry season—that would be sufficient to account for your present trouble. Dryness at the roots since the buds have fallen would also account for it. If your tree has not had its branches dressed with some strong insecticide which has injured the buds while they were dormant, you must look to one of the first two mentioned causes to decide your inquiry.—J. C. C.

5487.—**Artificial manure for Vines.**—I have used a good many artificial manures for Vines, and without deprecating any I can say after two seasons' use I should recommend the Patent Silicate Manure to be applied twice during the growing season; first, as soon as the Grapes are thinned give a liberal dressing, and again when the stoning is nearly finished.—E. F.

FERNS.

TREE FERNS FOR COOL-HOUSES OR FERNERRIES.

DICKSONIA ANTARCTICA.—As far as general utility and hardiness are concerned, there is probably no Tree Fern to equal or surpass



The Tasmanian Tree Fern (*Dicksonia antarctica*).

Dicksonia antarctica (see illustration). It is useful from quite a small plant, when only emerging out of the seedling stage, up to the grand specimens of imported growth with their noble-looking stems. They are particularly useful whilst in about 6-inch pots; when well established therein they can be used for decoration with good effect, making first-rate vase plants. Plenty of water, of course, must be given them; this is only a natural sequence when dealing with this and other Tree Ferns in a thriving state. The style of growth of this Fern whilst still in its earlier stages of development is very pleasing. It is then of a more spreading character than later on, for as it attains height and rigour a more erect growth is assumed. When young plants begin to show signs of forming a stem their growth in this direction can be considerably hastened by working a ring of Sphagnum Moss around the stem at the base. This progress can and should afterwards be followed up as the roots take hold of it, adding at the base, so as to increase the diameter, and also upwards amongst the stems of the fronds to add to the height. By this means I have been enabled to increase the height considerably as much as 1 foot in three years when once a good stem was made. Unless this system of increas-

ing the height of the stems is understood, it may not appear to be altogether logical. That it is so in fact I have myself proved conclusively. To facilitate the process, the old fronds as they fade and are cut off should be left about a couple or 3 inches longer than is usually done; this affords a means of support to the Moss, which can also be worked up amongst the fresh green fronds as well. Then, by keeping it all moist, not only by the syringe, but also with the watering-pot (with a rose on), pouring it over the crown, fresh roots will soon push out and take entire hold of the Moss. This process of mossing up is entirely different from that of mossing up an old stem, an imported one, for instance; it is not often in this latter case that sufficient roots will push forth to hold up the Moss. In the former the roots in process of time envelop all the Moss, making a stout and massive-looking stem.

SHADING.—This is not necessary save in small houses. With too much or constant shade, the fronds are not nearly so enduring, being at the same time liable to what I take to be a disease concurrent with shade and too much moisture. The fronds assume a brownish appearance somewhat similar to what one might attribute to red-spider, but with no evidence of insects at all. This will extend from the tips of the pinnae and in due course make the fronds quite unsightly. In one house where several plants of Tree Ferns were grown, this failing used to occur every summer season, the house being heavily shaded and kept very moist. The shading was at last dispensed with entirely, and the

growth afterwards was as healthy as possible, this being, I think quite a conclusive proof of the source of the complaint. In the way of insect pests the black thrips is about the most troublesome, attacking the lower fronds mainly, and if it is not detected, it will soon disfigure them. Where the syringe does not frequently reach the fronds on the lower sides there will be a congenial breeding place for this insect. Brown-scale is, next to thrips, the most troublesome, and if not stopped in time will quite spoil the fronds. Both insects may, however, be kept under by ordinary methods, the former by hand-picking and light cleaning with a soft brush and a weak insecticide. When plants are very much pot-bound and no further shift is desirable, a narrow margin of fibrous peat and Moss may be built up around the rims of the pots. The roots will soon lay hold of this, and provision will be made for more effectual watering. This is quite necessary in the case of plants with large heads, for even where a fair amount of room was originally allowed for watering, I have noted that in due course the roots and soil would be almost level with the tops of the pots. Weak firmyard manure-water, or lime-ash-water with guano and a little soft soil greatly helps such plants. When

in this condition, it is hardly possible to give them too much water, two or three times a day being none too often to water them in hot weather. I once had a plant in a No. 1 pot which in course of time cracked the pot by reason of the mass of roots, the growth always being extremely vigorous. When the young fronds appear, and that in quantity together—which in the usual way in the case of hasty plants—it is an indication that even closer attention must be given them for watering. With a ring of from twenty to thirty young fronds growing quickly, the resources of any one plant must be severely taxed, and a check at such times means the crippling of the fronds, the points not developing in such a satisfactory manner. Next to *Dicksonia antarctica*, I consider

CYATHEA DEALBATA is one of the most useful and serviceable of Tree Ferns. It may not be quite so hardy, but as regards its beauty it even surpasses, in my opinion, the first-named. It is well termed the Silver Tree Fern by reason of the glaucous, silvery shading of the lower sides of the fronds. The pale green of the upper sides of the same also makes it quite distinct. The stems are not usually so stout either, except when planted out. From a small plant upwards this *Cyathea* is extremely handsome, and worthy of every attention. Compared with the foregoing it is also much scarcer, but it should not be. In my opinion it should have a more peaty soil than the *Dicksonia*, only a little turfy loam being used, whilst the other may have half and half. Although it is a strong grower when in a healthy state, it does not make such a quantity of roots as in the other case; this can be readily attributed to the comparatively lesser number of fronds usually borne by a plant of relative size. I should add as regards the soil that I would use a little Sphagnum Moss with it, chopped up fine. This will not only encourage fresh root action, but retain moisture as well. *Cyathea dealbata* is more sensitive even than *Dicksonia antarctica* to drought at the roots. If it remains dry for but a short time and the points of the pinnae commence to curl, it will be impossible to restore them to their normal condition. Should such a misfortune arise in either case shading for a time must be used, and that rather heavily, whilst the plant is thoroughly moistened all over and kept so for some considerable time. It is a rare thing for *Cyathea dealbata* to be troubled with insects; at least this has been my experience, and I have grown both from small plants to specimens for several years. Anything in the way of potting may very well be attended to now, as the growth will soon commence. Where shifted into larger pots or tubs it is hardly ever possible to do much to the old ball when it is a mass of roots, but it will not hurt to cut away a portion at the base, so as to allow of sufficient depth in the new pot or tub, with a little room at least for a top-dressing. Firm potting is, I consider, quite essential, otherwise it will not be possible to retain the old ball in a moist condition. My practice has been to pot firmly, but not to give a large shift. When there is any suspicion of a newly-potted plant being too dry at the centre, a few holes 6 inches or more in depth should be made in the old ball, then when watered the desired effect will be obtained. I would only advise planting out in any case when there is an abundance of head-room; it means more luxuriant growth, imparting more shade to things underneath, if any be grown there. True, such a spot would be congenial to such as *Todea* and *Hymenophyllum* where grown in quantity. Plants in an unhealthy state should be reduced so as to go into a pot of the same size or a smaller one according to the case. G.

5372.—**Ferns for a case.**—“A. D. C.” omits to give the size of the Fern-case, and on this, partly, the selection must rest. If it be about 18 inches in height, the following Ferns may be grown in it on the understanding that frost is kept out as they are of the greenhouse section: *Adiantum cuneatum*, the prettiest of the Maiden-hairs, and *Adiantum Farleyense*, which is fairly hardy; *Pteris cretica*, *P. serrulata*, and *P. tremula* Smithiana, all excellent Ferns for a room; *Asplenium bulbiferum*, a handsome Fern, which produces fine specimens on its fronds; *Phlebodium aureum*,

and *Asplenium flaccidum*, also a strong-growing plant. *Lygodium scandens* (the Climbing Fern), might be tried, but it is not so hardy as those above, though it is so lovely and unique in its growth that it is well worth a trial. The soil for these Ferns should consist of loam, leaf-mould, and peat with plenty of silver-sand, and the tray in which they grow must be well drained, for stagnant water will induce mildew, which is fatal in its effects. If the case has no holes to allow of the passage of water these should be made before the plants are put in, and the bottom of the tray should contain a layer of corks, cinders, and bits of charcoal, covered by a thin layer of Moss, then rough bits of peat, pulled to pieces with the hand, and the finer part of the compost on the top. The whole may be soaked before inserting the Ferns with boiling water to destroy all germs of animal or plant life, and allowed to become fairly cool before the plants (which should be turned out of small pots) are put in. It is better to begin with a few good kinds, and add others as experience is gained. The surface of the soil may be covered with *Selaginella* or *Tradescantia discolor*. To make a variety in tint one or two good *Begonias* of the Rex type may be introduced, *Louise Clowen* being one of the best for this purpose, with dark-crimson and maroon leaves. Ferns and these *Begonias* both enjoy a still, damp atmosphere without draught, yet they must have ventilation at the top to let off the steam, which will otherwise fall again and set up mildew in the case. If there be no ventilation in the movable case a small opening should be made at the top to be closed while gas is burning, but open for a few hours daily in a pure atmosphere. Tepid water should be given whenever the glass shows no mist when put in sunshine: enough to run through the drainage.—f. L. R.

5452.—**Adiantum Capillum-veneris.**—Two parts fibrous peat, one part fibry loam, one part leaf-mould, not too much decayed, a small portion old lime rubble, and sharp silver-sand, in proportion to the texture of the loam—light or heavy. Ram the soil into the pots quite firm, as upon this much depends the manner in which growth is made. Abundance of water is required when the plants are growing freely, with occasional waterings of weak liquid-manure. Ferns enjoy this stimulant much more than what many persons imagine.—S. P.

5482.—**Fern compost.**—There is no better compost for the Ferns mentioned and other ordinary descriptions than a mixture of two parts of the best (fibrous) loam procurable, with one part each of peat and leaf-mould, and half a pint of sand. If peat is not easily procurable it may be omitted, using rather more leaf-mould instead, or an equal quantity of fresh sifted Cocoa-nut fibre. Such Ferns may and are often grown capably in almost pure loam, this being of a light and sandy, peaty, or “silky” nature, and only a little leaf-mould being added. The heavier the loam the more leaf-mould, &c., should be added; the lighter it is the less is needed.—B. C. R.

ORCHIDS.

SOPHRONITIS GRANDIFLORA.

I AM asked by “G. T. B.” to say a few words about the management of this beautiful little plant, which I do willingly, as it is a particular favourite of mine, and I have seen some very good varieties of it of late years. This Orchid was first sent to the celebrated Messrs. Loddiges, of Hackney, some time early in the present century, or at least in the first half of it, and it flowered with them for the first time in this country in 1841, and I suppose it is one of the *Sophronitis* entered in their catalogue, published in 1839, numbered 470 to 473, without any specific name. It is a plant which grows at considerable elevations on the Organ Mountains in Brazil, and it was some time before the right method was adopted for its successful cultivation. I remember well when I first went into the Orchid-houses, now many years ago, that this plant was always treated to the warmth of the Cattleya-house, and this structure in those days was a different place as regards the temperature than it is now, and we used to succeed in flowering it fairly well; but, of course, it neither grew nor

blossomed so well as it does now since we have learned to keep the plants hung up in the more genial atmosphere of the *Odontoglossum*-house. There are one or two distinct coloured varieties of this Orchid, which also differ in their hulse and leaves. Some of these have received distinct names, of which *S. militaris* I have thought upon several occasions to be entitled to specific rank, but have failed to establish it on any fixed grounds, so have been compelled to put it with *grandiflora* again. The variety *rosca* is another very pretty form, having flowers of a good round form, giving a nice change of colour from the bright shade of the normal plant, but it is not near so effective. *S. purpurea* is another variety, but it differs considerably in colour, being of a bright rich carmine-purple. *S. violacea* is yet another form, having flowers of a distinct violet hue, which is a valuable acquisition, but they all come under the designation of *S. grandiflora*. This *Sophronitis* thrives best in a hanging-pan or shallow earthenware basket, and this receptacle may be filled with drainage, so as to leave but little space for soil about the roots. In this respect, I think so many make a great mistake, but it likes the little that it does have made nice and firm and solid, using good brown peat-fibre and Sphagnum Moss in about equal proportions. Some of my acquaintances object to the use of the last-named material, but the more I know of Orchids the more I am convinced of its thorough usefulness, and many Orchids have I seen growing in nearly all Sphagnum where I was taught to believe the least bit of it with the peat-fibre would be death to the roots; but be not afraid, my friend, you may use it without the least hesitation in the culture of this plant. Give it abundance of water in the summer season, and during winter do not let it get dry, and keep it hanging up in the front of the *Odontoglossum*-house, in a sunny, light position, with a free circulation of air.

MATT. BRAMBLE.

ONCIDIUM TIGRINUM.

This plant I am asked to enlarge upon by “Jos. Headley,” who sends it under the name *O. Barkeri*, but I do not acknowledge this name, although it was given to it by Lindley after Mr. Barker, of Birmingham, its first cultivator; but he found that it was the same plant as that described by La Lavi under the above name. Neither do I agree with those who would make that fine Orchid called *splendidum* a variety of this *Oncidium*, for, in my opinion, no two plants can be more distinct. However, to confine my remarks to *O. tigrinum*, which is a plant possessed with a strong odour of *Violeta*, and I do not appreciate the name given it by the natives of Mexico, or the Spaniards of that district, who call it “The Flower of the Dead.” A plant which I had growing in my dwelling-house for several years, always used to flower at the new year, but last season being so hot and dry, the plant got neglected and died, so that I did not have the exquisite pleasure of its flowers this season. It makes large hulse, which are slightly compressed at the sides, and upon the top it bears a pair of thin linear oblong leaves which are of a bright green, and from 6 inches to 1 foot in length. The spikes are erect, some 2 feet or 3 feet in length, branched, and bearing many flowers, which, in some instances, measure 3 inches across. These have small sepals, and petals of a bright yellow, blotched with dark brown, and the lip a clear, bright yellow, giving off a delicious odour of *Violeta*. In a superb variety which I had sent me last year from Croydon, the markings being quite black, and the lip of a very deep and rich yellow. I wonder if I shall get it sent again? It is certainly the finest variety I ever saw of this plant. It remains in full floral beauty for a long time, and it retains the fragrance to the last. This is a plant which thrives best when grown in a hanging-basket, well drained, using for soil good brown peat fibre mixed with chopped Sphagnum Moss. It may be accommodated in the cool-house during the whole season, but in the autumn it may be kept somewhat warmer, and it hastens the spikes during the summer season. The plant requires an abundance of water, but it may be kept nearly dry for a short time when the growths are formed.

ROSES.

YELLOW ROSES.

If there is one colour among Roses more popular than another it is the deep golden-yellow found in such varieties as *Maréchal Niel*, *Perle des Jardins*, *Harrisoni* and others. *Rosa Harrisoni* (here figured), one of the Austrian Briers, was introduced from America by Mr. Harrison in 1830, and is still one of our most popular yellow Roses for garden decoration. As shewn in the engraving, it is far more double and globular than the *Persian Yellow*, another very old favourite introduced in 1838.

HARRISONI is a beautiful golden-yellow, but the growth is not so vigorous nor the flowers so deep in colour as in the case of the *Persian Yellow*. I have more than once known the two varieties confused, but when seen together they are quite distinct. These two varieties are amongst the earliest flowering Roses we have, and I have a vivid recollection of how grand they were in this neighbourhood last spring. They are good growers, hardy, and almost certain bloomers. The chief point is to thin out all weakly growths, and so encourage the more vigorous shoots. If these are bent down slightly they will almost invariably bloom throughout their whole length. By bending them down slightly after pruning a more even

only necessary pruning will be the removal of frost-bitten wood.

FORTUNE'S YELLOW (syn., *Beauty of Glazenwood*) is another beautiful semi-double variety that deserves much more extensive cultivation. It is said to have been discovered by Robert Fortune in a rich mandarin's garden at Ningpo, and was introduced to this country by him in 1845. Like the *Banksians*, it does best in a warm and rather dry situation, and, like them, requires careful summer pruning. It is only semi-double and varies much in its colour, sometimes being a pure orange-yellow, and at other times striped and flaked with carmine in very uncertain quantities. The yellow Abyssinian Rose *Eca* is also very pretty. This was introduced by Messrs. W. Paul and Son about 1883; it is small and very pale-yellow in colour.

CLOTH OF GOLD (or *Chromatella*) was sent out in 1843, and was somewhat extensively grown until eclipsed by *Maréchal Niel*. It is a very vigorous grower, and too tender to thrive satisfactorily unless in a warm and very sheltered wall. The blooms are large, double, perfect in form, and of a deep sulphur-yellow with darker centre, but unfortunately it is a difficult variety to grow on account of its extreme tenderness. I have only once been fortunate enough to see it growing well and that was in a Rose garden completely sheltered by specimen shrubs. Being so tender, it rarely

Small, perfect in shape while young, and a good Rose to last, this variety is undoubtedly one of the best climbers for a south wall or under glass. In the latter position I have secured from 500 to 700 blooms from a single plant, and have found it equally as certain as well-grown specimens of *Maréchal Niel*. *Mme. Carnot*, a seedling from W. A. Richardson, is somewhat similar, and also a grand variety.

L'IDéal, of similar habit, is one of the most distinct and attractive Roses we have. Not very full, but of good shape when young; it is decidedly one of the six sweetest-scented Roses grown. Its colour is also very variable, being metallic-red and yellow, splashed and tinted with a golden and coppery-yellow.

DUCHESSE D'AUERSTADT.—The flowers of this are pure yellow when young, but partake of a nanken shade as they open. They are large and full, but not of so good shape as those of *Henriette de Beauveau*, a bright clear yellow, very free blooming and sweet-scented.

BELLE LYONNAISE is a pure canary-yellow of the *Gloire de Dijon* type, but not quite so hardy.

REVE D'OR is a typical Yellow Rose, almost evergreen, and of extraordinary vigour.

MME. PALAOT is too well known to need more said of it than that from 1880 to the present time it has been the best of its colour.

ISABELLA SPRUNT, a fixed sport from *Safrano*, is a pure canary-yellow of hardy constitution, very free, and a good button-hole Rose.

JEAN PERNET, a sport from *Devoniensis*, is also exceedingly pretty, but, like its foster parent, it is not sufficiently reliable. Perhaps the best pure yellow Rose among the dwarfier growing Teas and Noisettes is

MADIE VAN HOUTTE. Some of my readers may question my designation of this grand variety as a pure yellow on account of its being frequently tinged with deep rose, especially towards the edges of its petals. But these are merely sun tints, and may be found more or less in many other varieties—*Niphotos*, for example. *Marie van Houtte* is a most excellent grower, hardy, and certain to produce several crops of good flowers during each season.

SENSÉE is of different shade, having a deeper yellow for ground, with an apricot-coloured centre. It is a grand autumnal Rose.

MME. HOSIE is a pale yellow of great purity. The blooms are well built up and of great substance and size. The title



OUR READERS' ILLUSTRATIONS: Flowers of Rose "Harrison's Yellow." Engraved for GARDENING ILLUSTRATED from a photograph sent by Mr. J. McWalters, Armagh, Ireland.

break of the flowering eyes is secured. In pruning it is only necessary to thin out the weak shoots and remove the tips of strong and well-ripened growths. Weak growth is of little value upon the Austrian Briers. In the same class we have two single Yellow Roses.

THE AUSTRIAN YELLOW and the Austrian Copper. Both are good, the latter being one of the most superb single Roses grown. It is of vigorous growth, and possesses deep tints of bright copper, terra-cotta, and metallic-red. Once seen in their full beauty and freshness, these blooms are seldom forgotten. We also have the

YELLOW SCOTCH ROSES, which, although pale and very small, are almost perfect in shape and particularly free and hardy. Among other small yellow Roses we must not omit the

YELLOW BANKSIAN. I am acquainted with more than one garden where *Banksian* Roses grow well, but do not flower satisfactorily because they are injudiciously pruned. The *Banksians* flower early, and all the necessary pruning should be done at midsummer or soon after. Long shoots that have flowered should be entirely cut out, thus letting the air and light into the remaining growth and assisting its maturation during the autumn months. These Roses grow very late, and are much more tender than many; hence the need of giving the growth as early as possible, and a dry border to encourage early ripening. In the spring the

starts well into growth until too late in the season for its vigorous shoots to get matured. It was a seedling from Lamarque, and Nabonand has succeeded in getting a seedling from *Chromatella* which much resembles the parent, and is supposed to be hardier; he has named it *Comtesse de Beaumetz*, but it still remains to be proved, and I doubt if it will ever become so popular as *Maréchal Niel*. The above, with *Solfaterre*, *Ophiric*, and *Céline Forestier*, are the best of our old yellow Roses. During recent years many grand additions have been made to this colour, one of the most popular being

WILLIAM ALLEN RICHARDSON, which was sent out by Ducher in 1878. For some time it was not much grown, having probably shown its uncertain growth. It is a peculiar feature in this grand Rose that one plant may do well, and another in the same position and apparently under similar conditions will be far from satisfactory, growing scarcely at all. This same peculiarity is often found in *Maréchal Niel*, but not quite so frequently. It requires the same treatment as *Maréchal Niel*—viz., little or no pruning of the wood made the previous season. Its colour is difficult to describe and varies very much. Golden yellow, orange-yellow, yolk-of-egg yellow are all found; sometimes a bloom will be produced with only one of these colours, at other times two, or all three may be found in one and the same confusion, while it is not uncommon to find a flower pure-white. As a general rule they are golden-orange with a lighter edge.

"yellow Roses" gives us rather a wide scope among these flowers, but I have endeavoured to keep within bounds, even by omitting such grand varieties as *Comtesse de Nadailac*, *Anna Ollivier*, *Jean Ducher*, *Princess of Wales*, *Francisca Krüger*, *Gloire de Dijon*, *Kaserin Freidrich*, *Bouquet d'Or*, *Mme. Berard*, &c., all of which might justly be styled yellows of different shade. D.

5526.—*Roses in pots*.—Except that I am afraid the pots are rather too large for the first potting, I think you have gone about your work in a business-like manner. The cold frame is a capital place for the plants until the end of May, when they will probably want more room. In any case plunge the pots to their rims in a bed of coal-ashes. With regard to pruning, if you keep the plants as cool as you can by removing the lights off them, except in wet or frosty weather, you may delay the pruning until the middle of March with advantage. I think if you cut all the strongest back to 9 inches above the pots and the weak ones to 6 inches you will do right. I do not think the plants will want re-potting until after they have produced two lots of flowers, or not until the month of August next year; even then they will not want larger pots, unless they are much stronger than I imagine them to be at that time. Strike off half of the old soil and re-pot in fresh. They will then be ready for forcing early the next year. The greenhouse will be too hot for

the plants in the summer. They will be better in the open air after the middle of June. Your selection of Roses is a choice one for such a limited number. After the plants are well established in their present pots they may have those of a larger size in three years' time.—J. C. C.

5522.—**Growing Roses.**—By all means pot at once. You can then move them safely and use for either of the purposes you name. It is as well to pot now, even if you turn them out into the open border after settled in your new house. The size of pot depends entirely upon the size of root and plant. A comfortable size for the roots should be selected. If much growth is upon the plants they will need to be cut back; but I think from your description you could treat them exactly as you would a couple of young plants from a nursery. I should choose better varieties for the conservatory—say, *Maréchal Niel*, *L'Idéal*, or *William Allen Richardson* in place of the *Gloire de Dijon*, and one or other of the shorter-growing Teas instead of *Baroness Rothschild*.—P. U.

5192.—**Scotch Brilers.**—You can get these from any good Rose grower. The real Scotch Roses are of various colours and unnamed. There is a perpetual blooming variety called *Stanwell Perpetual* which should not be missed. Plant at once. Twelve dwarf Roses to stand in pots along a path out-of-doors would be *General Jacqueminot*, *Baroness Rothschild*, *La Franco*, *Madame Lambert*, *Bisher Holmes*, *Mrs. John Laing*, *Annie Wood*, *Monsieur Nonan*, *The Bride*, *Souvenir de S. A. Prince*, *Jean Ducher*, and *Perles des Jardins*. These will give variety of colour and are free bloomers. If great care is not paid to watering, and the outside of the pots partially shaded from fierce sunshins, you are not likely to succeed very much.—P. U.

5523.—**Climbing Roses.**—When forcing Roses it is of the utmost importance to avoid any draught, and this is always caused more or less by any ventilation. Sooner than do this, I would allow a considerable rise in the temperature and keep the atmosphere a little moister. Syringe according to the temperature and weather. I cannot say just how often, because so much depends upon other circumstances. A moist, spring-like atmosphere is wanted; but if the weather is extra dull and wet, cease syringing for a short time. Until the growth is some 4 inches long I would not advance over 35 degs. to 60 degs., but from that stage an additional 5 degs. to 10 degs. will not hurt.—P. U.

5195.—**Tea Roses, &c. for sale.**—*Marie van Houtte* is the only one of those you name which is likely to be satisfactory for your purpose. *General Jacqueminot* and *Catherine Mermet* will give many more flowers than *Marie Raby* and *Ethel Brownlow*, and are near enough of the same colour. You are not likely to find the sale of blooms from three plants worth the trouble.—P. U.

OUTDOOR PLANTS.

A GOOD HARDY ANNUAL.

BLUMENBACHIA CORONATA.

This has much to recommend it, the flowers being showy, the foliage elegant, and the growth



Blumenbachia coronata.

dwarf and compact. Like all the *Loasa* family the structure of the flowers is somewhat singular. The boat-shaped petals and the peculiar small scales between them, together with the bush-like bundles of stamens, render the blossoms very distinct, but the entire is so simple enough; it merely requires to be treated

as a hardy annual, but, like others from Chili, it is better to sow it in spring than in autumn. It continues to flower from July to September, if grown in warm, light soils. The other species in cultivation are *B. insignis* and *B. multifida*. The blossoms of *B. insignis* are pure white, 1 inch across, with a large serrated tooth on each side. *B. multifida* is of much stronger growth, more hispid with stings, and with much larger five-parted leaves, longer two-bracted flower-stalks, and broader obtuse petals. Both species are natives of the southern parts of South America. G.

5185.—**Best Dahlias.**—I have given the best twenty-four show varieties, and the best twelve Cactus kinds, as you scarcely want two dozen Cactus kinds. Of the show class select *Bendigo* (purple-crimson), *Colonist* (a distinct colour, quite free, fawn and chocolate shade), *Cauary* (yellow), *Ethel Britton* (blush, the petals edged with purple), *George Rawlings* (deep-maroon), *Glowworm* (orange-scarlet), *J. T. West* (yellow, the petals tipped with purple), *Harry Keith* (rose-purple), *John Wyatt* (crimson, shot with a scarlet shade), *Mrs. Glasscock* (white), *Mrs. Glastons* (a lovely colour, silver-pink, so very fine in form), *Queen of the Belgians* (cream-shaded with pink), *Rev. J. Goodblay* (maroon-purple), *Thos. Goodwin* (very intense in colour), and *Wm. Rawlings* (crimson-purple). The best of the fancy varieties are *Comedian* (orange, with crimson freckles, the tips of the petals white), *Gaiety* (yellow, striped with red and tipped with white), *Gen. Gordon* (yellow, with stripes of scarlet), *Chas. Wyatt* (deep-rose, set off by crimson flakes), *Flora Wyatt* (orange with stripes, and flakes of red), *Henry Glasscock* (buff, striped-rose), *Mrs. Saunders* (yellow, the petals tipped with white), *Peacock* (purple, tipped white), *Rebecca* (lilac, striped crimson), and *T. H. Girdlestone* (lilac, with flakes of maroon). Any or all of the following Cactus kinds are worth growing, and the flowers are of the true Cactus shape. Taking the well-known Juarez as the type: *Lady Penzance* (yellow, a clear, lovely shade), *Countess of Gosport* (pleasing in colour, the flowers small, but very neat and pretty in form), *Countess of Radnor* (a lovely shade, or shades, salmon-rose, molting in yellow, and the form distinct), *Robert Cannell* (magenta, shot with a satiny bluish shade), *Delicata* (pink, passing to yellow in the centre), *Kynerith* (quite of a vermilion shade), *H. Cannell* (deep velvety-maroon), *Honoria* (delicate-amber colour), *Juarez*, *Lady M. Marsham* (salmon), *Mrs. Hawkins* (sulphur-colour), and *Panthea* (bright salmon-red).—C. T.

6310.—Plants for the banks of pond.

—There is no lack of beautiful things for this purpose, enough to adorn every yard of the banks with a series of fine flowers. They may be divided into two classes: those that love moisture at the root, but prefer not to be actually in the water, and others that may be even in the water itself. Of the first class I should begin with the *Globe-flowers* (*Trollius*), and make a feature of them, they are so fine, showy, and early. Then comes the *Iris*s, a perfect lust; *I. germanica* in its varied form, but above all such lovely species as *I. sibirica*, *Mounieri*, *arosa*, and *schrolobouca*, and last, but far from least, the *Kompfer* or *Japan Iris*s, which need moisture more than any, and do not mind if they are actually in water to the depth of 3 inches or a little more. *Spiraea*s, such as *palustris* and *venusta*, are essentially water-side plants, and so is the purple *Loosestrife* (*Lythrum Salicaria*). *Day Lilies* are admirable on pond-banks, and so is the tall *Lupin*. In the water itself there should be many things, including those that are natives, such as the *Boy Bean* (*Menyanthes trifoliata*), the great *Water Buttercup* (*Ranunculus lingua*), with flowers as large as florins, and the flowering *Rush* (*Batium nephetos*). Other good things not natives are the *Red Water Hawthorn* (*Aponogeton distachyon*), *Galla palustris*, *Sagittaria Japonica* fl. pl., one

of the showiest of water plants, with full spikes of double flowers, *Orontium aquaticum*, commonly called the *Golden Club*, as it thrusts its yellow club-like spikes of bloom above the water, and *Pentederia cordata*. This last in shallow water is exceedingly handsome, throwing up leaves on long stalks 2 feet high, and above them long spikes of rich-blue flowers. I might extend the list of things available, but if "C. C." takes all these in hand he will make his ponds a perfect water-garden of lovely flowers for at least six months of the year. To make the thing complete the ponds should contain some of the many new and noble hardy *Water Lilies*, whose advent marks a new era in water gardening.—A. H.

TWO FINE IRISES.

IRIS IBERICA (Fig. 1).—This is one of the most singular of the *Iris*s, and very handsome. The flowers are of good size; the upright petals are white, pencilled and spotted with purple or violet, while the drooping petals or falls are veined with dark-purple or purple-black on a



Fig. 1.—*Iris Iberica*.

yellowish ground, with a conspicuous dark blotch in the centre. This is the colour of the commonest form, but there are several, and one, ochreous, is very distinct. *Iris Iberica* is far easier to cultivate than most persons imagine, being perfectly hardy, and not at all fastidious as to its requirements. It thrives best in a rich fibrous loam, where it can send its long roots deep into the soil. The rhizome does not require to be planted deep, but only just below the surface. In most cases the roots perish when planted deeply. The rhizome during winter is very impatient of moisture, and should be kept comparatively dry. Coarse river sand should be used, the rhizome being planted completely in it in the same way as many bulbs are planted. By this means it is kept rather dry during the winter, and great assistance is given to the plant in summer, as the young shoots can easily force their way through. Under this treatment the plant grows more freely, and can be easily multiplied by division of the rhizome. It is admirably suited for the rock-garden, or for the socket border, and, when better known, it will find a place in every garden. It flowers in spring, and though the blossoms are of somewhat short duration, their extreme beauty amply compensates for this drawback.

IRIS SUSIANA (*Monaring Iris*)—Fig. 2, p. 715—One of the most singular of all the flowers of temperate and northern climes. It grows 1½ feet to 2½ feet high. The flowers produced in early summer are very large, and are densely spotted and striped with dark-purple on a grey ground. It should be grown in sunny nooks in the rock-garden, or on sheltered banks or borders, but always in light, warm, and thoroughly-drained soil. I have seen it thriving as a border plant and flowering well in a garden near Broadstairs. It may be treated as perfectly hardy in some parts of the county; but a dry bottom and a free soil are essential. In cold districts or on heavy soil the protection of a hand-light would be useful in winter. It is a native of Asia Minor and Persia. It is increased by division. F.

original from
6461.—**Planting Dahlias.**—Plant out in April, and cover at night, with the dried flower-pots till the weather gets warm end of May. E. H.

DEEP CULTIVATION.

If trenching or double digging was necessary in hygene lays, when cropping was not nearly so rapid as it is now, it follows as a matter of course that it is more needful now, when we are not content with crops following each other almost before the land is cleared; but many go in for double cropping, and we find all sorts of Winter Greens, Broccoli, Savoys, &c., getting established between the rows of Potatoes, so that the land is never at rest. In advocating trenching the difficulty with many is to get any ground vacant during the winter season, when it can be done; but there is not the slightest doubt that deep cultivation is the only way to effectually guard against drought, and with the experience of the summer of 1893 still fresh in our minds it would be folly not to guard as far as possible against similar failure in the future. Artificial watering, mulching, &c., are only aids to ward off the effects of drought. The real cure is a deep, thoroughly pulverised, and liberally enriched root-run, where the crops can defy the effects of drought. In gardens of limited area, such as amateurs generally cultivate, the best plan is to set it out in plots, and crop it so that a portion should become vacant in the winter season and receive its turn of trenching, whereby it will really be made like new soil; for with all our skill in chemistry we do not improve on Nature so rapidly as to be able to put into the soil the exact elements that each crop requires, for the object of our forefathers allowing land to lie fallow one year and cropping it the next was that Nature might restore to

EXHAUSTED LAND, through the agency of frost and rain, the very things it was deficient of. There is little chance of going back to this very primitive mode of letting land, at least in gardens, restore itself simply by lying idle. We, however, must take care that we do not verify the old motto of the more haste the less speed becoming applicable to garden lands, for it is no use hurrying a large space of any given crop into the soil if by better culture we could have grown an equal amount of produce on a smaller area, and I am fully convinced that deep cultivation enables this to be done, and as regards manure, there is little doubt but that double digging saves manure, for it brings to the surface and within reach of the roots those nutritious elements that have been washed deeply down by heavy rains until they were practically useless; but by bringing them up to the influence of the sun and air they again become available for plant food. In trenching I utilise all the roughest of the garden refuse by burying in the bottom of the trenches all the old stems of Broccoli, Cabbages, or any of the Brassica tribe. For old Strawberry beds that have become weedy there is no cure like burying the whole mass two spits deep, if possible, in the autumn or early part of the winter, as is the best for the work, for then the newly turned-up soil gets the whole of the winter to become mellowed before spring-time comes round again; but still any time during winter does very well, for trenching is good work for cold weather, and when the depth of good soil is not sufficient to allow of the bottom spit being turned right on the top of the first, it should be well broken up with forks, so as to increase the depth of friable soil, the best antidote for crops suffering from drought yet invented.

JAMES GHOOSH, Gosport.

5517.—Treatment of a lawn.—You had better set about raking up the Moss at once with an iron toothed rake, and afterwards give the lawn a good dressing of rich soil which has been passed through a coarse-meshed sieve. Wood-ashes or the charred rubbish of the garden is one of the best fertilisers for lawns if laid on next month. There is another plan open to you, and which I have found in practice to be useful—that is, instead of using the lawn-mower in the spring, to cut the Grass with a scythe, and pare it down as close as you can get to the soil. If you continue this treatment through the summer the sun will scorch up the Moss.—J. C. C.

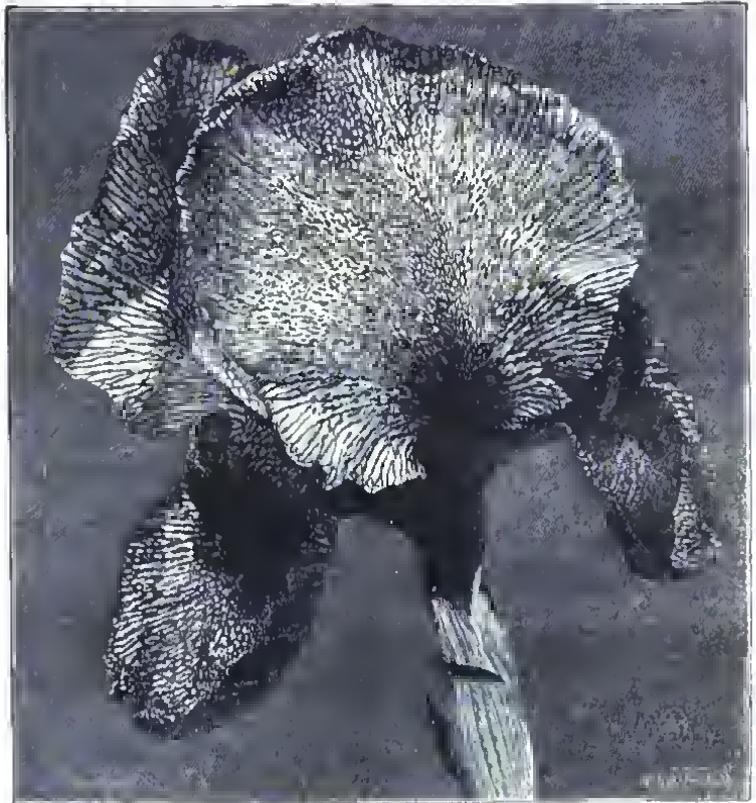
5503.—Beds of Begonias.—Unless you have a nice warm-house, pit, or a hot-bed, and some amount of experience in the matter, it will be wiser to purchase ready-made young plants in May or June, than to attempt

to raise the seedlings yourself. Plants from seed sown in January, or at once, in a heat of 65 degs. or 70 degs., and kept growing on rapidly and vigorously, will begin in bloom in July, or sometimes in June, of the same year, but the greatest care and a certain amount of skill are absolutely necessary, and even then the flowers are later than from year-old tubers. On the whole, you had better procure tubers in March—good seedlings selected as to colour are decidedly superior, as well as less costly, for this purpose than named kinds—start them in boxes of rough sandy soil, in a gentle heat, or the warmest corner of the greenhouse, pot them singly when in growth, harden off in cold frames in May, and plant out about the second week in June, in light, free soil made rich with decayed manure, leaf-soil, or spent hops.—B. C. R.

5519.—Pelargoniums out-of-doors in Sussex.—Pelargoniums are not very good plants for a wet district, and for this purpose I should rather prefer Tuberosa Begonias which delight more in moisture. Still, for the

every autumn from cuttings, and kept through the winter in a cold frame. This was a success. A dwarf Yellow Nasturtium did fairly well. Harrison's Musk was a success in a damp situation, mulched with manure, but failed in a drier spot; but the showiest thing of all was a dwarf double yellow French Marigold, raised from seeds in the spring. Calliopais grandiflora, pegged down, Yellow Tuberosa Begonias will be a success, only they are rather expensive to start with. The same may be said of Yellow Carnations, but the Carnations do not give enough colour to suit everybody.—H. H.

5516.—A mossy lawn.—More than one correspondent inquires about mossy lawns, but there is really only one remedy when the Moss has taken complete possession, and that is to returf or resow. The presence of Moss indicates bad drainage, and a badly-drained lawn is never successful. It cannot be, as the soil is always in an unwholesome, waterlogged condition. The quickest way is to returf those parts badly matted with good fresh turves, as resowing



Mourning Iris (Iris susiana). (See article "Two Fine Irises" on page 711.)

open you cannot do better than select of the Zonals such fine kinds as Henry Jacoby, which has vivid crimson flowers produced in a bold truss, King of the Boddlers (scarlet), Vesavia, well-known as one of the best of all this class, John Gibbons (orange-scarlet), Triomphe de Stella (orange-scarlet), and West Brighton Gem (scarlet), a very fine bedder. Beckwith's Pink is a good pink kind, also Mrs. Turner, and amongst salmon-coloured varieties worthy of note is Lady Mason, which has reddish-salmon flowers, and produced very finely. Of the Ivy-leaved varieties, the old Mme. Croisse is still one of the best, and other worthy kinds are Rye-croft Surprise, which has neat trusses of salmon-pink flowers, H. Camell (rose), Souvenir de Chas. Turner (deep-pink, the upper petals feathered with maroon), Mme. Thibaut (deep-pink), Jeanne d'Arc (white, touched with lavender), Congo (pale-lilac), Comtesse Horace de Choiseul (rose), and A. F. Barron (lilac-rose).—C. T.

5496.—Bedding plants.—I have tried many substitutes for Calceolarias, including a few self Antirrhinum, which was propagated

means a rather weakly sward for ploughing upon during the coming summer. The dressing of soil advised was correct, and a very good thing to use. Rake out the Moss, resow or returf; the latter is the better plan in the majority of cases.—C. T.

5524.—English guano for a garden.—The Native guano is no doubt what is meant in this inquiry, and this is frequently advertised in GARDENING. I have found it to be a very good substitute for stable-manure for all garden crops; also for fruit-trees, if used in moderation. At the same time, I do not think any kind of fertiliser will take the place of stable or farmyard manure—that, however, is not always obtainable. It is in such cases that the Native guano or Clay's Fertiliser and other concentrated manures are valuable, and they invariably do the most good when they are mixed up with the soil before sowing or planting.—J. C. C.

5492.—Sulphuric acid and weeds.—It is not of much use to apply sulphuric acid, but now I wait till the Grass shall be blowing about, and then whatever is applied will be more effectual. One part of sulphuric acid to 20 of water will do the trick, and will not kill strong-rooted cul.—H. H.

THE KITCHEN GARDEN.

WITLOOF, OR CABBAGE-HEADED CHICORY.

This Witloof (Fig. 1) is the forced and blanched sprout of a particular variety of large-rooted Chicory named Brussels Chicory, from the name of the city where its culture originated. Witloof may be brought to table either raw, as a salad, or cooked and seasoned in various ways. In the first form it very much resembles Common Chicory or blanched (Barbe-de-capucin) (Fig. 2), and when served up in the last-mentioned way it reminds one especially of boiled curled Endive. In any form it is an agreeable and wholesome vegetable, with a slightly bitter taste and remarkably delicate in



Fig. 1.—Witloof, or large Brussels Chicory (one-third natural size).

flavour. Witloof can only be produced by using the particular variety of large-rooted Chicory which I have just mentioned, and which is distinguished by the broadness of the leaves, and especially by the great size of the midrib. These leaves, when they are blanched by forcing the plants underground, form a sort of Cabbage-like head, very solid and compact, and of an ivory-white colour, bearing carriage well, and, when properly attended to, keeping fresh for several days. This explains how it is that Paris and London are almost exclusively supplied with Witloof grown in Belgium, where it is raised at less expense, although there is nothing of either mystery or difficulty in the process. Our market-gardeners are certainly able to do it quite as well as their Belgian brethren, and even the owners of private gardens can without any difficulty and at a trifling expense raise Witloof if they will only conscientiously carry out the instructions which we here endeavour to give as clearly and as briefly as possible. In the first place it is indispensably necessary to obtain seed of the large-rooted Brussels Chicory genuine and

TRUE TO NAME, as this is the only kind which produces the large leaves and midribs which are essential to form the Cabbage-like heads. With any other kind of Chicory the most painstaking efforts in the process would be absolutely thrown away. The seed should be sown, during the month of June or at the beginning of July, in soil that has been deeply dug and well prepared and, preferably, in drills drawn from 6 inches to 12 inches apart, the seedlings being subsequently thinned out so as to leave from twenty to thirty plants to the square yard. If the seed is sown too early there almost always results a large proportion of plants which run to seed the same year. Seed may also be sown for transplanting, and this method is to be especially recommended in market-garden culture, where it is important to have ground occupied by any particular crop for as short a period as possible. In this case the seed is to be sown in a nursery bed in June, and about July 10 the seedlings may be planted out in a bed from which some early crop has just been taken, and at a distance from one another of about 6 inches in every direction. In October the plants will have attained their full growth, and the roots will then be as thick as an ordinary spade-handle. They are now to

be lifted from the bed, the leaves cut off at about 2 inches from the neck, and the roots shortened to the length of about 6 inches. At the same time all lateral growths are cut away, and also any shoots which may have pushed around the principal one, which alone is to be retained. The roots thus prepared are then at once placed in an upright position side by side in the bottom of the trenches which have been prepared for the forcing. These trenches should have been opened in a well-drained part of the garden or where the water does not lodge in the soil naturally, and should be about 16 inches in depth below the level of the garden. The bottom of the trenches should have been well broken up so that the roots may be readily inserted in the soil. When the full complement of roots has been deposited in a trench, some of the soil which was taken out in making it is then shovelled back so as to fill up the interstices between the roots and cover the latter up to the necks, which should all have been placed at the same level. After this a layer of about 8 inches deep of comparatively dry soil is shovelled in. Soil proper for the occasion may be easily prepared by placing a sufficient quantity in heaps under a shed or other shelter some weeks beforehand.

The trenches are usually from about 4 feet to 4½ feet wide, and may, of course, be as long as is convenient. After a trench has been furnished with roots and dry soil, as just described, portions of it are forced in succession, according as supplies are required. The forcing is effected by covering the requisite portion of roots in the trench with a layer 8 inches to 12 inches deep of fermenting manure, and in from twelve to fifteen days' time the soil will have become sufficiently heated for the production of Witloof. The manure may then be transferred to the next portion of the trench that is to be forced, fresh manure being added to it to keep up the heat as may be required. The Cabbage-like heads of Witloof are not fully developed until after twenty days have elapsed, but when the manure is removed a covering of litter or straw mats suffices to retain the heat and to finish off the growth of the blanched heads. These when taken up are cut off from the roots with a small portion of the neck attached to them; they are then sorted in sizes and packed in the square baskets in which they are sold in the markets. The production of Witloof, easily accomplished in any country, is particularly to be recommended for adoption in the kitchen gardens of country houses in localities far remote from markets.

CHICORY (Barbe-de-capucin).—Forced in winter in a dark place, the common Chicory plant yields a much-esteemed winter salad material. In producing it, use is made of plants that were sown rather thinly in the open ground from April to June. At the beginning of winter these plants are taken up and the leaves are cut off to within about half an inch from the neck of the root. Then, in some dark place, where the temperature is not too cold, sloping beds are built up, composed of alternate layers of sand or dry soil and Chicory roots, care being taken to place the heads of these at the outside of the bed, so that the leaves may have room to grow freely. If the soil of a bed appears to be too dry, it is slightly watered and the bed is then left to itself for about three weeks, when, if the temperature has not fallen too much, leaves from 8 inches to 10 inches long may be gathered. Of late years some growers in the neighbourhood of Paris have begun to use for this purpose the large-rooted kind of Chicory, which they force as soon as it has attained the thickness of a man's finger. The roots of this kind of Chicory, being very straight and regular in shape, are very easily placed in position in the beds, and the leaves which they yield are generally broader and more vigorous in growth than those of the common Chicory plant. V. A.

5404.—**Grubs and vegetables.**—Dress the land freely with soot, salt, and lime. Trench it up 2 feet deep, then apply the dressing with any manure you may have and dig it in. If the land was properly worked there would be fewer insect troubles.—E. H.

5334.—**Tomatoes under glass.**—I should advise "E. H." to give "Ladybird" Tomato a trial. It can be obtained from Messrs. Veitch, King's-road, Chelsea. I grew it here last year and it is one of the finest-setting Tomatoes I know of, bearing bunches of medium-sized, red fruit at almost every joint, making the house quite a show. It is also a good variety for outdoor work.

5507.—**Unsatisfactory Celery.**—The rusty-looking marks complained of are the result of slug attacks immediately after earthing. The best preventive is quick-lime, soot, and wood-ashes, in equal parts, sprinkled on the soil amongst the plants and at the sides of the trench, so that in moving the soil the mixture will render the soil distasteful to the small black slugs that are the cause of the nuisance.—S. P.

5508.—**Soil for Tomatoes.**—It is not necessary to change the soil every year for Tomatoes under glass; but it should be worked and deepened every season by digging a little deeper, and mixing a little more of the subsoil with the surface-soil. I have grown four crops in the same house in succession with deep stirring and manuring every winter, and top-dressing during the growing season, and the last crop was as good as the first. I know the Worthing growers consider the soil should be changed after two or three years, but their soil is heavy, and ours rests on a chalk base 50 feet deep.—E. H.

5505.—**A Mushroom failure.**—No one, I expect, will contend that Moss-litter-manure is so good for Mushroom culture as the manure made from straw-litter. It is, in the first place, wanting in elasticity, and when beaten down it sometimes fails to heat sufficiently to work the spawn properly. I should not use Moss-litter-manure for Mushrooms, except where the supply of common straw-manure failed, but where Moss-litter is used less treading or beating should be given. I have seen good crops of Mushrooms grown with it, and it comes in useful if a sufficient supply of other manure cannot be had. It is very good manure for vegetables of all kinds when dug into the garden.—E. H.

5474.—**Beet Peas for market.**—I happen to live in the midst of a Pea-producing district for markets, and have had considerable opportunity to observe the system of culture and the varieties grown. The Pea likes rich, rather deep soil if it can be obtained; but I have seen splendid crops of early Peas taken from light soils of a shallow nature. Late Peas are apt to mildew badly on light soils, and they are also more liable to be attacked by thrips,

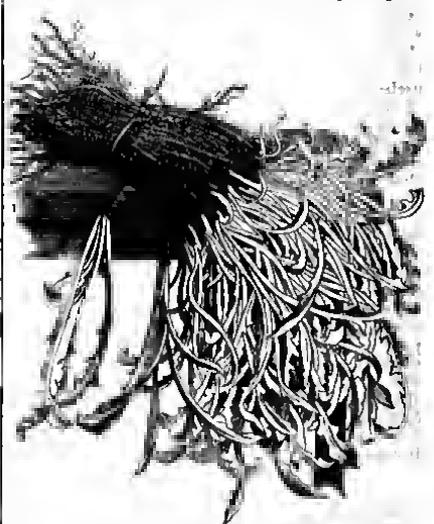


Fig. 2.—Chicory, blanched (one-sixth natural size). (See article "Witloof.")

and this troublesome insect quite spoils the appearance of the pods for market. The variety most frequently cultivated now for early crops is William the First, a very fine Pea, with dark-green pods. American Wonder has been tried, and has given satisfaction on some farms; others do not care about it. For late crops on good soils of a medium clay, No Plus Ultra is profitable. The dwarf Peas are sown 2 feet apart, the medium 3 feet, and the late tall Peas 4 feet. No sticks are used in any case, and the tops are switched off with a reaping-hook.—J. D. E.

5483.—**Spring-sown Onions.**—Soot and salt will be very beneficial on light sandy soil intended for Onions where the maggot is trouble-

some. Give a dressing of salt and soot at once; the salt may be applied at the rate of twenty pounds to the square rod, and at least a bushel of soot, both to be lightly forked in. About the end of May or a little earlier, give a light dressing of soot to keep the Onion-fly from the beds of Onions. They dislike the flavour of soot, and if this is applied about the time the flies lay their eggs the insects will seek elsewhere for suitable plants for their young brood.—E. H.

5491.—Planting Potatoes.—Something depends upon the size of the seed; but if of moderate size you will require for your plot of ground (which is just about half an acre in extent), about 15 bushels of seed. This is reckoning the seed is planted 10 inches or 12 inches apart, in rows 2½ feet to 3 feet asunder. Some of the most useful and productive Potatoes for ordinary purposes are Sharpe's Victor, and Veitch's or Myatt's Ashleaf (early), Beauty of Hebron and Duke of Albany (succession), and Reading Giant, the Prince, and Magnum Bonum (late). On such soil as yours, a moderate dressing of stable-manure (say 10 tons per acre), is almost indispensable, and you may also use a little superphosphate (2 cwt. per acre) and salt, or nitrate of soda, with the best results. Of the latter, apply it as a top-dressing before earthing up.—B. C. R.

5492.—Culture of Vegetable Marrows.—One of the causes of Vegetable Marrows getting out of condition is planting in very rich compost. They are always more prolific when only a moderate quantity of manure is used—say, half a barrowful to each hill, to be mixed and blended with the soil. Soot, rank growth produces fruit which rots at the ends and falls off.—E. H.

HOUSE & WINDOW GARDENING.

A FEW GOOD SCENTED FLOWERS.

PLANTS with highly perfumed flowers or foliage are always in great request in rooms and for bouquets, &c., and, as a rule, they are eagerly sought after by those who value real worth. The following are all easily grown and suitable for small gardens:—

ALOYSIA CITRIODORA (Lemon Verbena) is a deciduous plant with beautifully scented foliage. It is sometimes grown as a wall-plant out of doors, but needs covering up securely or a severe winter will kill it to the ground. As a pot plant it strikes readily from cuttings and grows freely in any good potting soil. Pinching in the strong shoots that are outgrowing the rest is all the attention it needs to insure well-furnished bushy plants. In winter it only needs keeping safe from frost, and if treated like Fuchsias does well.

DAPHNE INDICA is a beautifully perfumed flower (the commoner hardy kinds are known as Wood Laurels). It is increased principally by grafting on the Wild Wood Laurel, and is of rather slow growth, but a plant or two in the greenhouse will scent the whole structure for weeks at this early period of the year.

FREESIAS are among the most beautiful of bulbous plants, the flowers having a delicate yet powerful perfume. Their culture is now getting to be more generally understood, and they require nothing that amateurs cannot give them. Pot the bulbs, say about a dozen in a 6-inch pot in July, and set them in a cold frame, keeping rather dry until they start to grow and root, then water freely. Keep close to the glass in all stages of growth or the foliage will get long and weak. A temperature of about 50 degrees suits them well, and by having some kept in cooler quarters a long succession of bloom may be maintained. Strong spikes branch out into several side branches of flowers.

HELIOTOPES are old favourites both for the flower garden and as pot plants; they are readily increased by cuttings of the soft young shoots, and good plants may be grown in one season. The dark-flowered ones are generally the most favoured; but as regards scent there is little to choose, as they are all fragrant.

GERANIUMS, SCENTED-LEAVED, are numerous, and of easy culture. The old Oak-leaf is a familiar cottage window plant, as it flourishes well in the dry air of ordinary living rooms. Cuttings strike freely if kept rather dry, and rapidly make good plants.

MUSK is too well-known to need any description. The roots lie dormant in the soil during the winter, but start very early into growth.

The plants should be shaken out of their pots and divided in early spring, and plenty of moisture is needed for Musks. The old-fashioned small yellow-flowered sort has the strongest perfume; but Harrison's Giant Musk is now much grown as a window plant, as well as for bedding-out in summer.

MIGNONETTE is still, probably, the most popular of all scented flowers, both as a pot plant and for the flower garden, as even those dwellers in town who have not a foot of garden ground will still grow their Mignonette in window-boxes or pots, and from peer to peasant no garden is complete without it. The old small-flowered variety still holds its own for perfume against all the Giant varieties too numerous to mention.

VIOLETS are the favourite winter flower, and many acres of land are devoted to their culture in market gardens. The hardy single blues are very popular, but the tender Neapolitan are well worthy of culture by any who can devote frames for their protection during the winter months.
J. GANNON, Gosport.

INDOOR PLANTS.

THE DATE PALMS.

ANYONE who notices how vigorously the common Date Palm grows in a large cool-house must welcome the smaller species of the same genus,



The Slender Date Palm (*Phoenix tenuis*).

which, while thriving in a similar temperature, are more convenient as regards size, and are of easy culture. Palms are getting so common in our gardens now that the selection of some cool-house specimens is not difficult. One or two of these placed in a corner of a greenhouse make a great improvement, not only in effect, but in simplifying the grower's labour and care—looking, as they do, well at all seasons, and heightening so much the beauty of a few fresh flowers. Two good kinds for small pots are *Phoenix tenuis* (here figured) and *Phoenix reclinata*.

5297.—Libonia floribunda.—This should have a warm greenhouse, especially when flowering; but it is not very difficult to grow, although seen less nowadays than formerly, when so much attention was not given to Orchids. You do not state that you need particulars as to culture, but I suppose so from the query. The plants may be propagated from cuttings in the spring, and should be inserted in pots of sandy soil and placed in a gentle heat. When rooted pot the cuttings off separately, and at all times when well-established give them plenty of air, otherwise the growth will get long and weakly. Equal parts loam and leaf-soil forms an excellent compost, drain the pots well, and for flowering the plants in, they need not be more than 3-inch or 6-inch size. It is important to remember to keep the growth well hardened. The great enemy of the

plant is red-spider, which is kept away by syringing freely in the summer. *L. penrosiensis* is distinct from *L. floribunda*. The former is a hybrid; it is a good acquisition, the flowers being of much richer colour than those of the type. They are borne in the winter months.—F. P.

5432.—Oil-stoves.—I have many times stated that these are very useful for small houses if kept clean and well trimmed, and used only when really necessary. I know that a pan of water is often placed on such stoves, but I do not agree with or practise this, except in certain cases, because, as you say, the steam or moisture therefrom does the plants harm rather than good. The little "Beatrice" stoves, with a 6-inch wick, are as good as and cheaper than any other form, and one or two of them, with a "radiator" on top, will exclude a good many degrees of frost from any moderate sized and fairly sheltered greenhouse or conservatory.—B. C. R.

5430.—Heating a greenhouse.—You want a larger boiler and another 4-inch pipe connected with the others, so as to have two flows and one return over the same length as the existing pipes; even then you must not expect only to keep out frost. It would be hardly safe to have a larger boiler without increasing the length of the piping. There would be danger of the water boiling over if you were not at hand to check the fire, which would probably end in the boiler bursting when all the water has been forced out of the pipes.—J. C. C.

—Unless the house is lofty the amount of piping mentioned ought to be capable of at least excluding frost if well heated, though another row would be a decided advantage. These very small boilers are of little or no real use—mere toys, in fact—as they will not keep aught more than five or six hours at the outside. A well-built flue would be much better and more dependable, or for a few shillings you could purchase a coil, which if properly set in brickwork (by no means a difficult matter, by the way) would afford ample heat with a very moderate consumption of fuel. A 1-inch coil with four turns or "lays" would be about the right size.—B. C. R.

5298.—A banging-basket.—You do not state the kind of plants you require for the house, as there are many things that may be used for the purpose. The usual way is to first line the basket with moss to prevent the soil getting out, then fill up with soil, moderately light, and well-drained. Amongst flowering plants you can select Fuchsias and Ivy-leaved Pelargoniums, especially the variety Mme. Crousse, to hang over the sides. I have had a plant of this in bloom in a greenhouse for nearly the whole year, and the double

rosy-coloured flowers are very pleasing. Of course, the Mother of Thousands (*Saxifraga sarmentosa*) may be employed, and for the summer annual *Convolvulus*, or the pretty blue-flowered *C. mauritanicus*. Of Ferns you cannot have anything better than the beautiful *Nephrolepis exaltata*, or such a trailing plant as *Ficus repens*. The *Lachenalias* are very fine for baskets, and succeed well under such cultivation. Reference to last year's volume of **GARDENING** will give you the required information about the last named plants.—F. P.

5440.—An unsatisfactory Heliotrope.—Are you certain the late frost did not penetrate to the plant? If the glass is close to it, I should be inclined to think the excessive cold was too much for the Heliotrope. Sudden changes in temperature, such as would be caused by a very cold night followed by the warmth generated by the kitchen during the day, would probably cause the mildew, also the falling leaves, &c. Smoke of any kind is injurious to this greenhouse plant.—F. U.

—The temperature during the frost was probably too low.—E. H.

5419.—Winter-flowering "Geraniums."—Certainly the plants should be cut down when past their best, which will be the case very shortly now. Harden them off a little by exposing them freely to sun and air, and reducing the supply of water at the root for a time; then cut them back as hard as you like. The top and side shoots should be inserted as

outtings, placing them singly in small pots ("thumbs"), or five or six round the side of 4-inch pots. They will soon strike roots in a moderate and rather dry warmth, and may either be utilised for bedding-out purposes, or if grown and potted into 6-inch pots in June will make capital plants to flower again next winter. The old cuttings may either be grown on into large "specimen" plants, or be thrown away.—B. C. R.

—It is customary to cut back winter-flowering "Geraniums" now for the purpose of striking cuttings for next winter's blooming. The old plants after being cut back will quickly break, and if repotted or top-dressed will soon be in blossom again, and if a shift is given they will bloom all summer, and may be used for window-boxes.—E. H.

5423.—**Climbers for a greenhouse.**—The wall would look very pretty covered with Ivy-leaved "Geraniums." They would cover it in one season, and the blooms would be nice for cutting. *Ilabrothamnus elegans*, *Plumbago capensis*, *Clematis indivisa lobata*, *Heliotropes*, and *Fuchsias* are all useful wall plants.—E. H.

—If the Rose does well and is properly trained, it will soon cover the entire space unaided. But, of course, the growth can be restricted, and if the wall gets plenty of sun, as it should do to suit the Rose, two of the best subjects would be a *Heliotrope* and either an Ivy-leaved *Pelargonium* or a *Plumbago capensis*.—B. C. R.

5477.—**Tree-Carnations from seed.**—Seedlings raised now under glass and planted out in June, potted up in September, will flower some time next winter or early in the following spring.—E. H.

5181.—**Seeds of Castor-oil plants.**—To grow this plant large enough to be of any use under the same season, the seeds should be sown in a warm house or pit at once and pushed on as fast as possible. Any good soil, such as is used for potting soil-wooded plants, with a little sand added, will do for raising the plants.—E. H.

5488.—**Arum Lilies.**—The variety "Little Gem," flowers very freely, and is a pretty little plant. The old yellow spotted variety, *Hastata*, is very distinct and pretty; the colour is deep yellow with a black blotch at the base of the flower. Its price is about 2s. 6d. to 3s. 6d. The newer species, *Calla Elliotiana*, has much larger deep yellow flowers, and as it is still scarce is necessarily very dear; but it is not difficult to grow and flower freely. Its price would be a guinea per plant. Large plants would be double this price or more.—J. D. E.

BEDDING PLANTS FROM SEED.

The last sudden and severe frost, accompanied by snow and almost a gale of wind, will doubtless have left its mark on the stock of tender bedding plants, and steps should be taken at once to make good the gaps, or at least to provide substitutes for those that cannot be replaced. The following are all useful plants that can be raised in quantity from seed, and if sown at once, even without much artificial heat, they may be grown into good plants by the month of May. Solar heat increases daily, and a pit or frame with a little bottom-heat and covering over the glass at night will answer well for bringing on seedlings.

AUERATUMS, in several varieties, of which Imperial Dwarf Blue and White are most useful for bedding, and of the easiest culture. Sow the seed in pots of light rich soil, and when the seedlings are large enough to handle prick off into boxes in which they may remain until planted in the open air beds.

ANTERS (China) of all the leading varieties make beautiful beds, although they are not generally classed with bedding plants; they require no artificial heat, but merely the protection of a glass roof, and may be sown in boxes or in the soil of a cold frame.

BENONIAS of the tuberous-rooted section have of late become very popular as bedding plants. Sow in pots, using very fine soil, pressed down firmly, as the seed is very minute, and cover very lightly. A brisk heat is needed to push the seedlings on, or they will not be large enough for this season's bedding; but if enough of old dry roots are available it will be advisable to grow on in gentle warmth, and after carefully hardening off plant out in the reserve garden to make growth the first year.

CENTAUREA CANDIDISSIMA, one of the most beautiful of silvery foliaged bedding plants, being dwarf, compact and half-hardy. It makes a splendid edging to *Coleus Verschaffelti*, *Canone*, or *Beet*.

GAILLARDIAS are not nearly so much grown as they deserve to be, as they are of rich varied colours and most persistent bloomers. Sow in gentle heat they will be fine plants by

May. *G. Lorenziana*, double fringed, and *O. hybrida grandiflora* are the best varieties.

HELIOTROPE, although generally grown from cuttings, may be increased by seed. The dark-flowered varieties like *H. peruvianum* and *H. Voltarianum* are the best.

LOBELIA (Blue) is indispensable for edging, and if there is any lack of old plants to get outtings from, seed should be sown at once, and the seedlings pricked off in boxes directly they are fit, keeping the points pinched out to ensure dwarf bushy plants.

NICOTIANA AFFINIS (the sweet-scented Tobacco-plant) is in great favour of late for bedding. It answers well for the background of mixed borders or for mixing with sub-tropical plants.

PERILLA NANKINENSIS, one of the darkest of foliage plants, very free growth, useful for contrasting with other foliage plants of easy culture.

PETENIAS, Double (see cut) and Single, are splendid plants for masses of colour, and succeed well in dry soils and situations. The single varieties are, however, generally the best for ordinary bedding.

PHLOX DRUMMONDI has of late years been very much improved; not only are the individual blooms of much greater size, but the colours are much more distinct. Sown in a cold house or frame and pricked out singly, pinching the tops to make bushy plants, they will soon cover the soil when planted out, and make beautiful beds.

PYRETHRUM AUREUM (Golden Feather), very largely used for edging and carpeting beds and borders; sow in pans or boxes, and prick off



Flower of a Double Petunia.

directly the seedlings are fit to handle. The pale lemon-colour of the foliage renders it very effective in carpet bedding.

SALVIA PATENS, one of the most beautiful of blue flowers; old plants form tuberous roots, but if these are not available they can be readily increased by seed.

STOCKS of several varieties, but notably the Ten-week, are excellent for filling flower-beds and borders, although they cannot be strictly termed bedding plants, but the greater the variety in the flower garden the better, and

STOCKS are not only beautiful flowers, but are highly perfumed, and last a long time in flower. To get good plants the seed should be sown in a cold frame, in drills about 6 inches apart, and after the seedlings are above ground they must be freely ventilated, and the soil kept moderately dry on the surface, to avoid damping of the young plants.

TROPEOLIUMS of the dwarf kinds are very effective for bedding. *Crystal Palace* (scarlet) and *Lobbianum* (brilliant) make gorgeous masses of colour. The seed should be sown in March, and planted out early in May.

VERBENAS are not so much grown as they were a few years ago, owing to a disease affecting them, so that they gradually die away, but seedlings appear to escape the scourge, and make very pretty mixed beds. Being of dwarf spreading habit they quickly cover the soil, and flower continuously.

VIOLAS are usually increased by cuttings, or division of the roots, but the drought last season having destroyed the stock in a good many gardens, recourse must be had to seed, which, if sown at once, will yield plants fit for planting in April.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in *GARDENING* free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of *GARDENING*, 37, Southampton-street, Covent-garden, London. Letters on business should be sent to the Publisher. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as *GARDENING* has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by advising, as far as their knowledge and observations permit, the correspondents who seek assistance. Conditions, soils, and means vary so infinitely that general answers to the same question may often be very useful, and those who reply should do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in *GARDENING* should mention the number in which they appeared.

5542.—**Crops after Celery.**—What are good kitchen garden crops to follow after Celery?—O. A.

5543.—**Seakale-roots.**—Are Seakale-roots of any good after they have been forced?—TADWILLOSK.

5544.—**Dwarf Tomato.**—Which is the best dwarf-growing, short-jointed Tomato having smooth fruit?—M.

5545.—**Wireworms.**—Will "E. H." kindly supplement his interesting account of wireworms by giving a description of them as usually found?—ALPHA.

5546.—**Hyacinth bulbs.**—Would someone kindly tell me if I can preserve Hyacinth bulbs till another season without planting them out? I have a quantity left on hand.—J. HORN.

5547.—**Growing Heliotropes.**—Will someone kindly give instructions for growing Heliotropes? I have several plants, but have failed to get them to flower well.—W. D.

5548.—**Seakale-roots.**—After the roots have borne produce ought they to be dug up or left in the ground until next year? If to be dug up ought they to be put in sand?—LUX.

5549.—**Orchids for a greenhouse.**—Will someone kindly give me the names of a few good flowering Orchids which will grow in an ordinary greenhouse with other plants?—W. M.

5550.—**Heliotropes from seed.**—Will anyone be kind enough to tell me if I can raise Heliotropes from seed in an ordinary garden frame, and what is the best time to sow?—BUNSLER.

5551.—**Pure rain-water.**—Will someone kindly tell me how to keep rain-water pure, as I find after standing in the sun some time it turns green and gets full of insects?—KUSTIC READER.

5552.—**Scaring birds.**—Will someone please to inform me where I can obtain a scarce sparrow-hawk, as the birds peck all the buds of my Gooseberry-bushes?—CONSTANT READER.

5553.—**Chrysanthemums for show.**—Would someone kindly give me a selection of what varieties to grow, together with a few cultural notes on the varieties advised?—AMATEUR CHRYSANTH.

5554.—**Liquid-manure.**—Could liquid-manure, which drains from a stall into a small pit be used to throw over the ground in the vegetable garden or on a field, or would it be too strong?—DUMFRIES.

5555.—**Flores elastica.**—Will someone kindly tell me whether the eye of this plant should I have a notch cut in them at the back of the bulb? Also the best time to cut old plants up for propagating?—O. K. B.

5556.—**Bulbs after flowering.**—I should be glad if someone would tell what is the best thing to do with my bulbs after they have done flowering? Should they be taken out of the ground?—A. B. C.

5557.—**Unsatisfactory Tomatoes.**—How is it my Tomatoes run all to wood? Should I nip the tops out? There is always plenty of bloom, but the fruit does not set. Is a gravelly soil good to plant in?—A. B. C.

5558.—**Best annuals for small gardens.**—I want to give some seeds to cottagers. Would someone please advise me as to what would be the best—say eight bright annuals? The gardens are small.—TULLYALLY.

5559.—**Stable-manure.**—If 15 tons or 20 tons of straw are used in a stable in a year, what would be a fair price to charge for the manure, sorted by the purchaser who would take it the whole year round?—TULLYALLY.

5560.—**Cow-urine for Tomatoes.**—I have means of getting the weak of a byre, and want to know if it is suitable for Tomatoes? Also when it should be applied, and in what proportion should it be diluted with water?—J. K.

5561.—**Planting Irises, &c.**—Will someone kindly tell me if I can plant Irises this spring that will flower the same year, and the hardest kind to grow in a south-east border in a fairly light soil but cold climate?—A YORKSHIRE AMATEUR.

5562.—**Begonias (tuberous-rooted) from seed.**—Will someone kindly let me know the best way to raise these Begonias from seed, and, if heat is necessary, what amount of heat, and how long it is required?—FERNET.

5563.—**Ostrowskia magnifica.**—I received two plants of this from a sale in London; they are about 1 inch long and as thick as a man's finger. Will anyone kindly inform me what kind of treatment they want, and if for greenhouse or outdoors?—M. K.

GARDENING ILLUSTRATED.

No. 781.—VOL. XV.

Founded by W. Robinson, Author of "The English Flower Garden."

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ROSES.

MILDEW ON ROSES.

Now that young growth upon indoor Roses is fast becoming general, we shall soon have many suffering from attacks of this dreaded disease. As there is so little doubt respecting its chief causes, it may be well to devote a small space to its consideration, with the object of taking precautionary measures in due time. Carelessness in ventilation and watering are undoubtedly responsible for most of the severe attacks of mildew so destructive to Roses under glass. I also incline to the opinion that many varieties are far more subject to its attacks than others, although under similar conditions. Her Majesty, Innocente Pirola, and Edith Gifford invariably take it earliest with me, nor does it matter if they be under glass or in the open air. I have a plant of Innocente Pirola turned out into a border where it would seem impossible for draughts to reach, and yet if there are any spots of this disease upon a plant some yards off, it seems immediately communicated to I. Pirola as well. We cannot steer clear of mildew without patient care and more or less command over the atmospheric conditions of our houses. Sudden changes, of whatever nature, have much to do with disastrous attacks from this pest, and it is the same indoors or out. We find it during a wet, and also during a dry season. A hot or cold season with sudden changes also gives us serious attacks of mildew. Any check to growth, whether arising from a chill in the atmosphere or a sudden access of heat, or from either extreme in watering, the results seem the same. We see, therefore, that it is necessary to be very careful about these points if we are to steer clear of mildew. As the season advances and we are favoured with finer weather and more sun, there will often be times when the temperature under glass rises rapidly. Too often the admission of a little air, or rather the steady outlet of the overheated atmosphere, is not commenced in time, and is, consequently, hurried mainly a little later on. This will not do if we are to have healthy growth clear from mildew. Whenever it appears likely to be bright enough to make any appreciable difference to the atmosphere of a house, we must take the precaution of

CHECKING THE ARTIFICIAL HEAT at once. This the more necessary because it so often happens that bright weather early in the year is accompanied by a keen wind, thus rendering it even more difficult to admit air. An arid atmosphere closely following one of a humid nature will also have much effect upon the attack and spread of mildew. It is the want of a little consideration in ventilating and watering which is responsible for many of the failures and disappointments occasioned by this pest in the culture of Roses, and I cannot direct too much attention to these little details. We all agree that prevention is better than cure; then why not devote more attentive thought to the former? One will labour in the most assiduous manner to battle against mildew after it has

gained a strong hold upon the plants; but how much more satisfactory had a tithe of this care been expended earlier. All rosarians have experienced the exceeding disappointment of suddenly discovering mildew upon what was a few hours before a healthy lot of plants, and unless immediate measures be taken to remedy the cause and check its spread, the whole season's crop is almost a dead loss. But I will leave this and go on to a description of some remedies which I have found most effectual, and from the use of which I am happy to say we have not had a serious attack of mildew under glass for many years; of course, there has been due attention accorded to its avoidance in other ways—at least, so far as young assistants can be persuaded to carry out. The earlier any remedy is applied the more effectual it is likely to be. I find

SOFT-SOAP AND SULPHUR, with a dash of paraffin, the cheapest; but any insecticide may be rendered more deadly to mildew if a little extra flowers of sulphur are added. When the whole is kept well stirred during application, an almost imperceptible dusting is left upon the foliage. Quicklime and sulphur are also very efficacious. I have mixed it in this way: A little unslaked lime is placed in a pail, just sufficient water added to slake it, and while hot the flower of sulphur is dropped into it. Before it becomes quiescent fill up this pail with water, and dilute the liquor after the whole has settled down. A third remedy is a quarter of an ounce of sulphide of potassium to a gallon of water; but my preference goes to the small addition of sulphur to a weak solution of any tried insecticide. By rectifying the cause and applying these remedies at once we can fight against mildew successfully; but nothing will avail to the same extent if neglected for many hours after the attack is noticed. P. U.

5570.—Climbing Roses.—If the varieties of Roses are worth the trouble that they will involve if grown in pots altogether they may be shifted into larger pots with advantage, but it all depends upon what they are and the convenience you have for growing them. If they are hardy sorts, you may plunge the pots in the ground by the side of a walk, and train the growth on sticks or wires. Why not plant them out, and form pillars or bows by the side, or over a walk in the garden? We see too few pillar Roses, yet they are very easily managed, and it is a phase of gardening that everyone admires.—J. C. C.

—“Troublesome” could not do better than to carefully shift these into larger pots as he proposes. A 24 size is not large enough to support the growth and bloom of a strong climber, and they seldom prove satisfactory unless potted on. I am aware that many do not approve of any root disturbance until a crop of bloom has been secured; but over twenty years' experience has resulted in my invariably potting before forcing, care being taken to disturb the roots as little as possible.—P. U.

5571.—Roses in a black peat soil.—The soil is not the best that could be selected, at the same time I do not see why good hardy

Perpetual Roses should not do fairly well in it. I think you might improve it by the addition of about four barrow-loads of coarse sand or grit spread on the surface and forked in before planting. Select dwarf plants and put three rows in a width of 9 feet. You may dress the soil before planting with three barrow-loads of rotten manure, but after that use it sparingly, as too much manure has a tendency to make such a soil sour. Judging from the information you send, I am afraid the ground is not dry enough below for Tea Roses to be reliable.—J. C. C.

—You have got much more drainage than is necessary unless your soil around is very moist. I should confine myself to the China and Tea for such a soil and aspect. At present I should not manure it, letting the plants feel their way and feed upon the bone you have added. In a couple of seasons, if they thrive well, you could give the stable-manure to advantage.—P. U.

5593.—Growing flowers in town.—The German Irises are splendid town flowers, and read the replies to the correspondent who inquires about the best kinds to grow. Hints are there given, not only as regards culture, but also varieties. The Carnation is also useful, the Old Clove especially. This fine flower is very easily grown in a good, light soil, and readily propagated by layers, which should be made the last week in July. It consists in selecting the shoots of approved varieties that is desired to increase, and removing the soil from around the plant to about 24 inches in depth, filling up the hollow with light sandy compost prepared specially for the purpose. Take each shoot separately, hauling it with care to prevent severing it from the parent, and removing the leaves until within about five joints of the top. A sharp knife is now necessary to cut half through a joint, but taking care not to sever the shoot; then with a wooden peg, formed of a twig of a branch, make the shoot firm to the soil, and with this tongue in the prepared compost to promote quick rooting. The whole business is very simple and readily acquired. Cover the pegged-down portion with the prepared soil and water carefully. The time required for rooting is about a month, so that it will be in late August or early September before the layers can be removed from the parent and planted out. You can plant Carnations and Pinks now, also Anemons japonica, Tufted Pansies in variety, Michaelmas Daisies for the autumn, Philoxera for August, Campanulus, Delphiniums, Duroniens, and such things as Selam spectabile. But your place seems very small. Thoroughly dig it up at once, incorporate lime with it, manure it, and plant only those things mentioned and hardy Ferns, forms of Male and Lady Ferns, London Pride, Creeping Jenny, a Carnation or two, Campanula latifolia, which I have found to do very well, and a clump or two of German Iris.—C. T.

5588.—Liquid-manure.—The liquid which drains from a stable may be used for any garden or field crop. Dilute it with water according to its strength and the purpose for which it is used. For most purposes, when applied to growing crops, it might be diluted with three times its bulk of plain water.—E. H.

5589.—Cow-urine for Tomatoes.—Yes, this will form a very suitable enrichment for Tomatoes. Dilute it with a gallon of water.—J. C. C.

GARDEN WORK.

Conservatory.

Callas (Arum Lilies) make very striking groups in the conservatory... Callas reproduce themselves quite true to type from seeds... There is a small stock of old plants the effects will be so numerous there is no necessity for raising seedlings.

Forcing-house.

To keep up a succession of flowers it will be necessary to introduce from cool-houses or pits relays of suitable plants, which have been specially prepared for forcing... There are many thousands of poor, weakly, badly-ripened crowns imported which never can give satisfaction.

Stove.

Take off cuttings of the young shoots of Poinsettias, Euphorbias, Gardenias, and other plants when of suitable length... Take off cuttings of the young shoots of Poinsettias, Euphorbias, Gardenias, and other plants when of suitable length.

Ferns under glass.

Loss of time now in potting any plants which require fresh soil... Some may require a good part of the old soil shaken away, and such plants may have clean pots of the same size.

all, but it is always safer and better to put sufficient drainage for the water to pass freely away.

Gold Frames.

These will be found very useful now for many plants in pots which have gone out in the conservatory... These will be found very useful now for many plants in pots which have gone out in the conservatory.

Hot-bed making.

even in backward districts, should have attention now, and even a small hot-bed, made in a trench, and covered with 6 inches or 8 inches of soil, and a rough frame placed over it will be useful for many purposes.

Window Gardening.

Windows are bright now with Laffodils, Hyacinths, Freesias, and other bulbs, which can be brought on without forcing, and these bulbs, if taken care of, may flower again next year.

Outdoor Garden.

Mossy lawns may be dealt with now. If the lawn is small, scarcely if at all, it will be best to use a short-tined harrow to loosen the Moss first... Mossy lawns may be dealt with now.

Fruit Garden.

Corner Apricot and Peach-trees as they come into blossom. The amount of covering used must depend upon the situation of the garden, its climate, and natural shelter... Corner Apricot and Peach-trees as they come into blossom.

Vegetable Garden.

The Onions should be sown at once, if not already in. The first week in March is early enough for cold, heavy land, but the Onion crop should be got in in February in light land... The Onions should be sown at once, if not already in.

making a few large rough labels on some wet day, and writing the name of each crop on separate labels, and driving them in the ground where the things are to be sown... making a few large rough labels on some wet day, and writing the name of each crop on separate labels, and driving them in the ground where the things are to be sown.

Work in the Town Garden.

The days are growing appreciably in length now, and things under glass are beginning to move in earnest... Yesterday and to-day the sun has been quite hot here, and warm water has been required than for months past... The days are growing appreciably in length now, and things under glass are beginning to move in earnest.

THE COMING WEEK'S WORK.

Extracts from a Garden Diary from February 24th to March 3rd.

Finished nothing up Peaches, Apricots, and Nectarines on walls, for the protection of the blossoms... Finished nothing up Peaches, Apricots, and Nectarines on walls, for the protection of the blossoms.

* In cold or northern districts the operations referred to under "Garden Work" may be done from 1st day to fortnight later than is here indicated, with equally good results.

TREES AND SHRUBS.

A BEAUTIFUL SHRUB.

ZENOBIA SPECIOSA PULVERULENTA.

A GLANCE at the accompanying cut, which faithfully represents a flowering spray of this lovely shrub, will be sufficient to prove it one of the most charming of all garden plants cultivated in the open air in Britain. When treated as a pot plant and kept clear of hard frosts, the silvery leaves remain on the bush until new ones are developed. Even without the snowy-white flower-bells this variety is almost worth growing



Flowers of *Zenobia speciosa pulverulenta*.

for the sake of its pretty frosted foliage. *Z. speciosa nitida* is a form with foliage of a bright-green colour on both surfaces. In other respects it is like the form here figured.

5592.—Flowering creepers.—Climbing Roses of any kind would do well. The White Bankian, Climbing Aimee Vibert, Lamarque, or some such old-fashioned kind as these: *Jasminum nudiflorum* would give a glimmer of yellow with its flowers throughout the winter, and you could plant also the smaller flowered Clematises, the *Lahrusca Grape*, which has berries that change to very rich tints in the autumn, or Clematis Jackmani. Its deep purple-blue flowers tell well with a dark background, such as afforded by an old tree-stump. You might also plant against them such a beautiful *Berberis* as *B. microphylla*; the double *Kerria*, which produces its double yellow flowers in spring; *Honeysuckles*, such a *Rubus* as the Cut-leaved Bramble, or *Rubus phoenicolasius*, which has scarlet fruit.—C. T.

— This is an admirable way of using old trees, although few ever think of doing it. In gardens the rule is to put climbers on walls or fences, where some restriction is of necessity bound to be performed. Of course, they are most useful, but then we never see them in all the graceful beauty that belongs to them when abandoned as it were to themselves. I should advise "Ignoramus" to plant *Clematis montana grandiflora* to bloom in spring, and *C. flammula* for autumn, as both are adapted to this free, wild growth, and flower magnificently. For summer blooming a Rose might be included, *Felicite Perpetue* being a very suitable kind. Then there are the *Honeysuckles*, and of these nothing better or more brilliant than the Red Trumpet kind (*L. sempervirens minor*), unless the situation is too cold, in which case one of the commoner kinds must be planted. I once had an *Aristolochia Sipho* growing on a Laburnum-tree, and the effect was splendid, especially when the *Lahurum* was in flower. Its flowers are rather insignificant, and very curious, but the great leaves make a fine show.—A. H.

5593.—Hedge for a wind-guard.—You can plant Flowering Currant (*Ribes sanguinea*) and Flowering Currant (*Ribes aureum*); these are fast growers, and handsome in April and May. If you care for Evergreens you may plant the common Yew or Green Holly. If well planted in March, and watered well during dry weather, will make a good hedge, being pretty fast-growers.—F. O. D.

5475.—Blight on Beech-trees.—I think the cause of the information he needs. The blight which has caused the lovers of our wooding in the County of Ireland much regret for some years is due to a little

Wcevil named *Orchestes laqi*. The larva, a leaf-miner, feeds on the inside green part of the leaf, causing it to wither. I believe there is no practicable remedy.—R. L. A.

NEGLECTED SHRUBS.

THE STUARTIAS.

FORTUNATELY, in some gardens the precious introductions of former times have not been discarded to make way for the reigning fashion, and so we have perpetual object lessons before us to impress on our minds the mistakes and shortcomings of those who neglected to duly care for such truly beautiful shrubs as *Stuartia pent-*

gyna and *S. virginica*. All the *Stuartias* grew slowly, particularly in a young state, and require to be fully established before they develop their full beauty. Propagation is most readily effected by means of layering.

STUARTIA PSEUDO-CAMELLIA was first introduced into, and flowered in, this country by Messrs. J. Veitch and Son, who exhibited fine sprays of it in full blossom a few years ago at one of the meetings of the R. H. S. The foliage of *S. pseudo-Camellia* somewhat resembles that of some of the *Camellias*, and is beautiful at any time, but in some seasons the brilliant crimson and gold autumnal tints render the species most attractive, much more so than its American relatives at that period of the year.

S. VIRGINICA (here figured).—This is described in some books under the name of *Stuartia Malachodendron* and *S. marylandica*. Fine specimens of this exist in the gardens at Syon, Coolharst, &c., where they appear to be quite at home. According to London this species was first introduced into this country in 1742; it flowers from July to September, and is one of the most beautiful of all summer-flowering shrubs. The blossoms are large, and the purple filaments form a striking contrast to the white petals. In a wild state it is found along the coast regions from Virginia to Florida, and affects damp or swampy spots. Under cultivation it does well in peat and loam, or in pure loam and even in deep sandy soil, provided it has a good supply of moisture at the root.

S. PENTANDRA.—This has less hairy leaves than *S. virginica*, and the flowers are creamy-white, the petals having crenelated margins, and produced in profusion during the months of July and August, and are borne singly on very short stalks in the axils of the leaves; they measure 3 inches or 4 inches in diameter, and like those of the last-named species have reddish or purple stamens. G.

5504.—Ivy for a fence.—The Irish Ivy (*Hedera canariensis*) is the best for quick and dense growth, having regard to its hardiness and the position it is to occupy. Common plant that Ivy is considered to be it is not averse to liberal treatment in the way of manure to its roots, or liquid-manure, given during the summer when the weather is dry. If the ground is deep dug and well manured at planting time, it will all the sooner cover the posts and chains. Any nurseryman will supply the

plants; no better time for planting than early in March. Two stout plants to each post ought to be put in.—S. P.

You can do better than choose Emerald Green, or Gem, as it is sometimes called, a very quick-growing, glossy-leaved variety; but you might make your fence more interesting than this. Why not plant against it *Honeysuckles*, the winter and yellow-flowered *Jasminum nudiflorum*, *Clematises*, or the Vines, such as the fine-leaved *Lahrusca Grape*. But of course Ivy is evergreen, and if you put in good plants, and prepare the soil well, you will get quicker growth than if these points were not considered. Ivy is as a rule badly treated in gardens. You can get this variety or any other at any good nursery.—C. T.

The two kinds of Ivy that I should use for such a purpose are the Irish and the heart-leaved varieties. Both are fast growers, bold, handsome, and effective always. Any nurseryman that grows trees and shrubs in quantity for sale would be able to supply these two kinds.—A. H.

5424 and 5536.—Aster Thomsoni and Trachelium corniculatum.—"E. A. M." can get *Aster Thomsoni* from Mr. W. Thompson, Taverners-street, Ipswich. It is in his list. So also is *Trachelium corniculatum*, imported for February 10th, 1894. This does nicely in a pot, but is said to be hardy.—Nemo.

5502.—White growth on soil in pots.—This is usually the result of a disarranged drainage in the pots, and nothing but a thorough examination will be effective; or you have kept the soil too moist. No doubt you gave too much guano, and such manures require very careful use, otherwise more harm than good is inflicted.—F. F.

5556.—Bulbs after flowering.—It is not necessary in every case to lift bulbs after flowering. In a general way it is better to lift choice things, such as Tulips, Hyacinths, Gladioluses, and Ranunculuses when quite ripe, and after drying well, pack them away till it is time to plant them again. By this method the offsets can be separated from the old bulbs and started alone. Other bulbs, such as Narcissus, Crocuses, Snowdrops, &c., which are frequently left altogether in the ground, should be lifted occasionally for the purpose of thinning them. Once in three years will be often enough for most practical purposes.—E. H.

Bulbs are much better left in the ground where they grow if they are not in the way of summer-flowering subjects. In that case lift



Flowering-shoot of *Stuartia virginica*.

them carefully up when the foliage decays, lay them in an airy dry shed to thoroughly ripen off for a week or two, then store them in a dry room in paper bags until planting time comes round again. Should it be necessary to dig them up before the foliage has turned yellow, lay them in some soil until the foliage does turn yellow, so that the ripening may be gradual.—S. P.

CHRYSANTHEMUMS.

5553.—*Chrysanthemums for show.*—It is too late now to strike cuttings with a fair prospect of winning prizes next autumn. The best plan would be to purchase plants from one of the many dealers who make Chrysanthemums a speciality. When received, pot them at once in 3½-inch pots in a compost of loam two-parts, one-part half-decayed horse-manure, a good sprinkling of sharp silver-sand, with a handful of dissolved or ground bones thrown into every peck of the compost. Do not top the plants, but allow them to grow on with one stem until the first natural break is made in April or May, according to circumstances—such as the time the cuttings were inserted, and the variety. The formation of a flower-bud in the joint of the shoot is the cause of the first break taking place. Remove the bud and select three of the most promising shoots; these are generally at the point and nearest to where the bud formed. When potted place the plants in a cool-house as near to the glass as possible, so that they will grow sturdily by receiving all available light and air. When new growth is fairly on the way, and the pots are nearly full of roots, stand them in a cold frame placed in a sunny position. Here growth will be more stocky. Remove the lights entirely during fine weather, but be careful in admitting air when the weather is unfavourable. Transfer the plants to larger pots as those in which the plants are growing fill with roots until they are in 9-inch pots, which are the best size for flowering them in. Keep the plants quite free from insect pests and mildew, such as green and black-fly. These are easily got rid of by dusting the parts affected with Tobacco-powder, syringing it off the next day. Sulphur is the best cure for mildew, sprinkled on the affected parts, keeping the air about the plants at the same time sweet and clean. The following is a good selection of varieties, all of easy growth—Japanese: Avalanche (pure-white), Col. W. B. Smith (old gold-yellow, tinged with terra-cotta), Edwin Molyneux (crimson and gold), Etoile de Lyon (deep lilac-rose, shaded silver), Excelsior (rose-cerise, silvery reverse), Florence Davis (white, with tinge of green in centre), G. C. Schwabe (carmine-rose, gold centre), Lord Brooko (bright bronze-yellow), Mlle. Marie Haste (creamy-white, faintly tinted blush), Sunflower (deep yellow), W. H. Lincoln (bright yellow), Vivian Morel (dusky-maroon), W. Lucker (sweet delicate-rose), William Seward (deep, rich, blackish-crimson), Mrs. C. H. Payne (rosy-dusky), Charles Davis (rosy-bronze), Golden Wedding (richest golden-yellow), and Mlle. Therese Rey (creamy-white). Incurved: Empress of India (pure-white), Golden Empress (golden-yellow), Lord Alcester (primrose-yellow), Queen of England (deep-blush), Mrs. S. Coleman (golden-bronze), Princess of Wales (blush, tinted rose), Mrs. Norman Davis (yellow), Princess Teck (blush-white), Prince Alfred (rosy-carmine), Mme. Damer (mauve-yellow), M. R. Bahmut (carmine-rose, shade cerise), Jeanne d'Arc (white, tinted rosy-purple), and Lord Wolseley (bronze-red). Reflexed: King of Crimson (rich bright-crimson), Christine (golden), Christine (pink), Christine (peach), Mrs. Farayth (white), Cloth of Gold (pale-yellow), Cullingforth (scarlet-crimson), and D. Sharpe (magenta). Anemone: Mrs. Judge Benedict (light-blush, changing to pure-white), Lady Margaret (pure-white), Gluck (rich yellow), Jeanne Marty (rosy-peach), Fahim de Mediana (deep-lilac), and Duchess of Westminster (silvery-blush).—E. MOLYNEUX.

5563.—*Ostrowskia magnifica.*—This is quite hardy and to grow it properly it must be planted out-of-doors. The thick, fleshy roots when full grown are nearly 2 feet in length, and therefore to have any measure of success with the plant a deeply-worked soil is very essential. As regards the kind of soil, it is not very particular, but prefers a deep, sandy loam. I should advise "K. K." to choose a favourable spot, thoroughly prepare the soil by digging it to the depth of 2 feet, adding well-decayed manure, and then put the roots in. The roots are exceedingly brittle, and great care is necessary in handling them when they grow large. The young shoots start into growth early in the year, but they do not suffer from the spring frosts.—A. H.

FERNS.

SHIELD FERNS (POLYSTICHUMS).

This is a large genus, comprising somewhere about half a hundred species, which have a wide geographical range. A few only of the greenhouse kinds are included with the *P. venustum* from New Zealand (here figured). Polystichums have an especial advantage over the Buckler Ferns (*Lastreas*), inasmuch as they are ever-



Frond of a Shield Fern (*P. venustum*).

green, and their beautiful fronds remain perfect through the winter months, whilst the majority of the *Lastreas* are deciduous. The genera *Polystichum* and *Lastrea* resemble each other very much, and some instances occur in which it is hard to decide to which of the two families a plant really does belong, but, as a general rule, in *Polystichum* the indusium is shield-like, that is, circular and peltate, whilst in *Lastrea* it is reniform. The habit of *Polystichum* is more rigid, the fronds being usually shining and

spiny at the points of the segments, this rendering them extremely useful for cutting. The following are distinct and handsome kinds, and they will all thrive under greenhouse treatment. All are easily grown if potted in a mixture of about two-parts good light turfy-loam and fibry peat in about the proportion of two-parts loam to one of peat, the whole well mixed and made fairly sandy. The pots should be well drained, for the plants like a liberal supply of water at all seasons, but especially in the summer when they are growing.

P. VENUSTUM.—The frond here figured was sent to me by Mr. Angel from New Zealand; when fully grown the fronds are each about a foot or 18 inches long, bipinnate, deeply lobed, with spiny margins, deep-green on the surface, paler below. Its chief distinguishing feature lies in the presence of a dense band of imbricating scales, which are black, bordered with brown, and which extend the whole length of the frond.

P. VESTITUM is another species from New Zealand. Specimens of this plant I have received through Mr. Eric Craig. It is a fine plant for the cool fernery, having almost lanceolate fronds some 18 inches long, the colour rich deep-green.

P. CAPENSE.—This is a very much larger plant than either of the two previously named. It makes a stout creeping rhizome, from which grow fronds some 3 feet and upwards in length. It has an arching and graceful habit. It thrives well in the cool-house.

P. FRONDOSUM.—A native of the island of Madeira, making fronds from 1 foot to 3 feet in length; these are finely divided and rich bright-green in colour. These fronds are admirably adapted for cutting for mixing with flowers in large vases.

P. PALMIFOLIUM, from the same country, is quite a different plant. It is a very handsome and distinct kind with fronds some 18 inches or 2 feet long. The pinnae are large, bright-green on the upper side, whitish-green below, where the sori are large and conspicuous, rendering it very attractive.

P. FORIFOLIUM comes from various places in the East, but I have grown the Ceylon plant into grand examples in the cool fernery and used its fronds with much satisfaction for cutting. The fronds, from 1 foot to nearly 3 feet long and 1 foot in breadth at the base, are deltoid in outline, finely-divided, spiny-edged, and rich bright-green in colour. W. G.

5566.—*Maiden-hair Ferns, &c.*—These are not very satisfactory in a room, and much hardier and more robust things are desirable, such as the *Pteris tremula*, *P. cratica*, &c. You may grow in the window-box many things. The Bell-flowers (*Campanulas*) are a host in themselves, and the pretty *C. muralis* and *C. carpatia* will produce a wealth of bloom, and they grow almost like weeds. Then you could have a few Zonal Pelargoniums, *Fuchsias*, Ferns—such as those mentioned recently in *GARDENING*, Feb. 3, page 681—and bulbs, such as Hyacinths and Tulips, for the spring. But, of course, you cannot expect great things from an inside window-box, and the plants recommended for those outside (and several notes have appeared lately on them) will do.—C. T.

(5416) I will give you a few hints about potting and compost for Ferns. One great point is to drain the pots well, otherwise the soil will get waterlogged, and the fronds quickly die off. This is of greater consideration even than the soil. If you are growing Maiden-hairs you may have a soil either of peat or loam, either sufficing, but for Ferns in general I may say that the soil should be composed of loam and good fibry peat in equal parts, to which should be added a part of well-decayed leaf-mould, and a dash of sharp silver sand. A little charcoal may be mixed with the compost, if thought advisable, to keep it porous. After potting, water sparingly, and until the plants have got well-established—a too moist soil prevents the roots of the Ferns working into it freely.—C. T.

Better buy a few small plants of the Maiden-hair Ferns for the cool greenhouse. Belgineellas of the hardier sorts can easily be raised from cuttings in sandy soil, kept moist in a shady spot, any time during the spring or summer.—E. H.

Drawings for "Gardening."—Readers will kindly remember that we are glad to get specimens of beautiful or rare flowers and good fruits and vegetables for drawing. The drawings so made will be engraved in the next number of *GARDENING ILLUSTRATED*.

FRUIT.

CULTURE OF FILBERTS.

In reply to "G. F.," and others, the following is the practice in some parts of Kent: The trees when young are cut back to within 1 foot of the ground, which causes them to emit side shoots, which are regularly trained outwards by being tied to a wire or wooden hoop, which is placed in the centre, so as to give the tree a cup-like form. This is a capital method, inasmuch as it



Filbert "Mount Atlas"

allows the sun to shine in the centre as well as all round the trees, and thus the wood gets well ripened, a condition indispensable to the production of large crops of Nuts. Nut-trees are, as a rule, to be found alternately planted with standard Apple or Pear-trees. In height they are seldom allowed to exceed 6 feet, severe pruning being yearly resorted to in order to keep them within bounds. Many of the established bushes are 15 feet in diameter at the top, and are as flat as a table, and a crop of Nuts is generally to be depended upon. Good kinds of Nuts and Filberts are as follows: Cosford (early), Lambert Filbert, Mount Atlas (here figured), a fine productive kind, Pearson's Prolific, Round Cob, and White Filbert.

H.

6595.—Planting Apple-trees, &c.—If only the bare, fibroless roots were cut off no harm was done; but it would not have been wise to cut off all fibrous roots as well. It is the large roots that are devoid of fibre that are the cause of fruit-trees requiring a check by root pruning, which induces them to make fibre. In the case of soil that is light and warm it should be trodden down firmly, providing it was done when in a dry state. It would be folly to slope the soil down to the trunk, as suggested for the idea of making a basin-like cavity around the stem. Fruit-tree roots should be as near to the surface as possible without being exposed to the air, and to make a mound around the stem would be to drive the roots further still from the surface. If the trees have shoots 2 feet long say, cut them back to within one foot of the base. This is a fair distance to prune all the shoots back to. Now that the trees are newly planted it would be wise to mulch the surface of each for 2 feet around, and away from the stem, with half-rotted stable-manure, if available. If manure cannot be obtained a 3-inch thickness of decayed vegetable-refuse and wood-ashes would prove beneficial. Mulchings like these not only preserve the roots from frost, but maintain the soil in a moist state during the summer.—S. P.

5575.—Treatment of Pear-trees.—Thoroughly syringe the trees now with a strong solution of soapy water, to which is added 1 wine-glassful of petroleum to every 3 gallons of liquid. If this does not remove the insects well

brush into the worst parts methylated spirits. If liquid-manure is available, well soak the soil for at least six feet away from the stems of the trees. If the trees are above ten years old, extend the liquid another couple of feet. If this stimulant is not to be had, remove the Grass for at least 6 feet away from the stems, and work some partly-decayed manure into the soil a few inches deep, replacing the Grass. If the trees are not very large, it is not wise to allow the Grass to grow close up to the stems; much better have 4 feet all round the stems here, so that the sun will warm the soil, and encourage the roots near the surface. This is most important, especially if the soil is at all inclined to be heavy in character. Guano is a good stimulant for any kind of fruit-trees. The best way of using it is by sprinkling it on the surface when the fruit is the size of Walnuts, and washing it in by well soaking the soil with clear water.—S. P.

5591.—Growing Melons in a vinery.—As you have been so successful with Cucumbers in the vinery, there is no reason why you should not manage Melons also. If the plants are raised in the Cucumber-house, which will be a suitable place, and they are 6 inches high when the bunches are visible on the Vines, then would be a suitable time to plant the Melons. Do not allow them to carry too many shoots, keep them rather thin, and fertilise the female blossoms when they are fully expanded with pollen from the male blossoms. Hero of Lockinge would be the most suitable green-flesh variety, Blenheim Orange the best scarlet. Keep the foliage well syringed, except when the plants are in bloom. In giving water do not wet the stem at the surface of the soil any more than can be helped, as it tends to canker.—S. P.

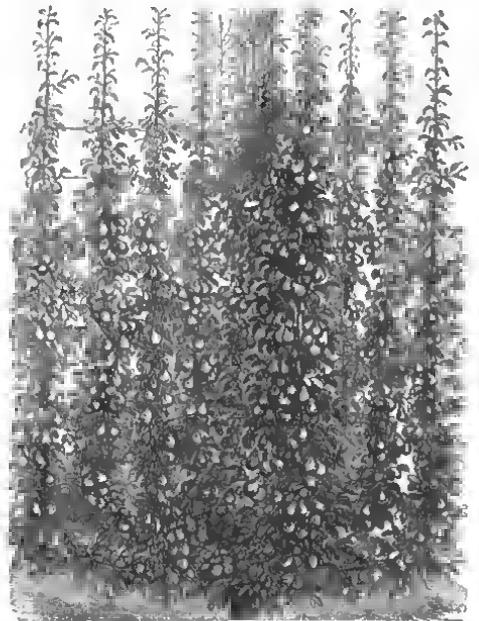
PYRAMID PEAR-TREES.

The appearance of lines or groups of healthy pyramid Pear-trees is a highly ornamental, as well as useful, feature in any garden. A suitable location for planting them is in a single line on either side of a garden walk. In such a position they are easily got at for the purposes of pruning, protecting the blossoms in spring, and gathering the fruit when ripe. A perfect specimen of a pyramid Pear-tree ought to be quite symmetrical, and the growth of each branch springing at regular intervals from the main stem should be straight and clean, and the whole tree should be furnished from base to summit with branches well set with fruit-spurs, and which should never be allowed to become overcrowded. The breadth of a good specimen tree should be equal to about one-third of its height. Pear-trees of pyramid shape, ready trained, can generally be purchased in most good fruit-tree nurseries, but, of course, they are much more expensive than maiden trees. If these latter are procured the grower can train his own trees, and often a better result is obtained than when stock is purchased that has been a long time in the nurseryman's fruit-quarters, and, consequently, frequently has become crippled and stunted in growth, and rarely producing satisfactory after-results. Commencing then, with the maiden tree, one year worked before replanting, it is better to let it grow for the first season

WITHOUT PRUNING at all; this operation is one requiring much care, so as to ensure the base of the tree operated on being well furnished with strong and fruitful branches, which must be fully borne in mind when cutting back. The summer following the first pruning the young trees will generally push out a considerable number of vigorous shoots, and these, when 6 or 8 inches long, should be thinned out, and

remove entirely every shoot from the base of the stem to a height of about 1 foot. Thin out those above that point to, say, six, seven, or eight shoots, taking care to preserve the best placed shoots, and they should be arranged, as far as possible, at regular intervals. If in the course of the summer season they evince a disposition to unevenness of growth, then regulating the same by pinching with the thumb and finger must be resorted to, of course preserving the leading shoot intact. In the autumn pruning of this season the lateral branches of the preceding summer's growth should be cut in much shorter than the lower ones, to favour the development of the same. This routine of pruning and training may be said to apply generally to their culture throughout their career, taking care, however, as the trees increase in size that the terminal growths of the lowermost branches be not allowed to extend too wide. This can easily be avoided by timely pinching in the summer season. The best season for planting Pears, in common with all other fruit-trees grown in the open air in this country, is in the early autumn, and the soil in which they generally thrive best is in a good, rather heavy, well-drained, loamy one; but by careful attention to manuring the roots, giving plenty of water where possible, and mulching them in hot, dry weather, they can be grown extremely well in almost any soil. During the flowering season protection of the blossoms from frost is very desirable, and the form of the tree renders the application of this by no means difficult. A light wire or wooden framework can be placed around the trees, and a light canvas covering, made to put on or take off easily, is about the best thing to employ for the purpose. In a general way this protecting medium should be removed in the daytime; but when in the spring a black, frosty north-east wind is blowing, it may often be left on during the day with great benefit; but this remark only applies to very bad weather.

A GOOD SELECTION of Pears suitable to form pyramids for almost any garden would be the following—viz., Marie Louise, Beurré Hardy, Jargonello, Beurré d'Amant, Citron des Carmes, Colmar d'Été, Glen Morecan, and Gilgill. The illustration annexed shows a specimen of another form of this kind of training, called the winged pyramid. The chief advantages of the latter plan are the preservation of



Winged Pyramid Pear-tree in bearing.

the fruit from destruction by wind, and in the exposure of both fruit and wood to the sun.—B. Original from 5571. Young fruit-trees.—I presume that your's have been trained horizontally, in

that case cut the main stem back sufficiently far to ensure another pair of side branches and a leader. The side branches should come from the main stem at the same distance as those below. In the case of Peas the branches are usually trained at every other line of bricks. Select the bud opposite the line where the branches are required to give the leading shoot for next season's growth. In the case of fan-trained trees that have made vigorous growth, say 2 feet shoots, cut these back to within 15 inches of their base. This will ensure the eyes near the base starting into growth and thus furnish the tree evenly all over with branches, to grow eventually into fruiting shoots. Always cut the shoots to the most promising bud at the upper side of the shoot, as from this position the new growth is more uniform and has the best appearance in the future. Any side branches not required should be cut to within an eye or two of the base; these will in time form fruiting spurs. In the case of Plum, Cherry, or Peach-trees, a space of 4 inches is a good one to allow for the side shoots. — S. P.

— Cut the central stem back to 1 foot from the last pair of branches. The leaders of the side shoots should not be shortened till all the space has been filled up, but the breast-wood should be spurred back to three buds. — E. H.

5530. — **Peach-growing.** — Seeing that you are about to build a house specially for Peaches and Nectarines, I advise you to do the work well by having all the parts of a substantial character. The back wall should be 8 feet high, and the back lights not less than 4 feet in length. You do not give the length of the proposed house, as to a certain extent the width should be guided by the length, or the external appearance will not be pleasing. Fourteen feet is a very good width. This gives a barrier 8 feet wide for the trees in front, which I suppose you intend to train on wires under the glass, a walk 3 feet wide, and a border the same width for the trees that will be trained on the back wall. Three Peaches that will ripen in succession are Alexander, Early Grosse Mignonne, and Sea Eagle. If you want a fourth select Stirling Castle. The best Nectarines are Blunze, Lord Napier, and Victoria, and Pine-apple for a fourth. — I. C. C.

— The following six Peaches will give a good succession of fruit, all of excellent quality: Royal George, Bellegarde, Barrington, Violet de Hutive, San Eugh, and Wallburton's Admirable. Four good Nectarines are: Blunze, Lord Napier, Pine-apple, and Pittaston Orange. All of these are free-bearing kinds, and really good in quality. The height of the back wall should be 10 feet, the width of the house 16 feet. By having a curved trellis in the front of the house the back wall can be better utilised. — S. P.

— Make the house as high and as wide as you can. Small houses are not well adapted for Peach growing; and plant about two or three kinds. There is no better seller or proper than Royal George. Diamond is also an excellent Peach. I should include Lord Napier or Humboldt Nectarine. — E. H.

5531. — **Stable-manure.** — The price of stable-manure may vary in different localities and different seasons of the year, especially in towns, where manure must be cleared away. I have a contract to take all the manure from a railway stable at 3s. per ton. I find it more satisfactory to buy by weight, and this I should say would be a reasonable price anywhere. A ton of stable-manure would be about a load and a half for an ordinary cart. The country district farmers frequently supply the straw, and take the manure as an equivalent; but of late years straw has been worth more money. It is a matter of bargain, and a good deal depends upon the demand for manure. — E. H.

5532. — **Hyacinth bulbs.** — The only way is to store them in sharp silver sand or Coconut-fibre refuse after they have got thoroughly ripened and dried. I presume the bulbs are in pots, and a good way to deal with them is to plant out in the autumn after they have been stored during the summer, as such bulbs make very pretty effects when planted about on the rockery or roostery, as one does not look so much at the beauty of the individual spike as at the colour gained. If you mean you have a lot of bulbs left out of the ground or pots, and you wish to keep for another year, I am afraid they will do little good, the best part being dead. Plant or pot them at once if you wish to keep them. — C. T.

THE KITCHEN GARDEN.

SCARLET RUNNERS.

Few vegetables are more productive than a well-managed row of Scarlet Runners. By keeping all pods picked off as soon as large enough, one small row will produce enough for the consumption of an ordinary family. For the supply of a large establishment I make two sowings, the first at the latter end of April. This I generally make in a sheltered corner on hard ground on which is spread about 3 inches of fine soil, and then I scatter the seeds evenly over it, covering



OUR READERS' ILLUSTRATIONS: Scarlet Runner Bean "Painted Lady." ENGRAVED FOR GARDENING ILLUSTRATED FROM A PHOTOGRAPH SENT BY MR. NORMAN BLAKE, BELFORD.

with the same kind of material, and if kept moist they will be fine plants by the middle of May for transplanting. A few branches are laid over them on cold nights. I generally plant in trenches prepared as for Celery, except that they are filled up level after the manure is dug in. The plants are carefully lifted and replanted with a trowel, and straight rods about 9 feet high are driven in on each side of the row, and fastened to one placed horizontally about 6 feet from the ground. These form an immovable framework for the haunts to run on. As soon as planted I put a few evergreen branches outside the stakes for shelter, and place a mulching of partially decomposed manure 1 yard wide on each side of the row; a good soaking of water or liquid-manure is also given about every alternate week, and thus treated they keep up bearing for a long time. I sow a few rows the first week in June for a very late crop, and in seasons when the frost keeps off they are very prolific during October, and sometimes in November; any way one takes them they are an unfailing crop, and generally preferred beyond Dwarf or Broad Beans. The sorts which I grow are the old Scarlet (Painted Lady) (here figured), and Champion and Girford Giant Runners. J.

Mushrooms for market. — Mushrooms will pay for growing for market if

the work is undertaken by those who understand what they are about; but I should say they are very unlikely things to pay under the care of those who know nothing about the practical part of their management. There is no simple way of starting in this business, as all the details must be carried out with skill and care or failure is sure to follow. — J. C. C.

5576. — **Kitchen garden paths.** — There is nothing that has such a good appearance as gravel for garden paths when kept in good order, but there is no gravel that is weed-proof. This, however, is easily managed by the aid of weed killers, which are now cheap, and save a lot of labour. They not only kill the weeds, but brighten and clean the gravel, making it look like new. The autumn, say October, is a good month to apply them. Tar and gravel make dirty-looking paths. I am sure you would not like them. The tar is very objectionable during hot weather, not only in its smell, but is soft to walk upon. Much depends upon how the foundation of the paths are made whether they will grow many or few weeds. If the gravel is simply laid upon the soil, as is a too common practice, no wonder then that weeds come up thickly. To render garden paths dry, and to preserve the gravel a long time, also a 3-inch thickness of broken stones, bricks, or clinkers should be laid under the gravel. The bottom of the path and the stones should be in exactly the same manner as the finished gravel surface is to be. If a path is 5 feet wide, the centre should be 3 inches higher than the sides, to allow for water from heavy rains to quickly pass away. Before laying on the gravel well roll the stones in shape. Not nearly so much gravel is used then in filling in the interstices, and it is easier also to make an even and smooth surface. Choose a dry day for laying the gravel. For ordinary garden paths it should not be less than 2 inches thick when laid on loosely, to be compressed into about 1 inch by rolling to make a firm and lasting path. It is best to apply the desired thickness, at once raking the surface level. After drawing a roller over the gravel to press it down, make it thoroughly wet by pouring water on the moving roller through the rose of a waterpot till a smooth surface is obtained. The rolling ought to be continued until the gravel will absorb no more water, but stands on the surface, then cease. The path must not be walked upon for a few days to allow the gravel time to "set." Then use the roller again till the surface is quite smooth and firm. Gravel paths cannot have too much rolling, provided it is done judiciously. — S. P.

5543. — **Seakale roots.** — Leave the roots in the ground, and thin out the crowns to one, or at most two. — E. H.

— Yes; Seakale roots are valuable after being forced, but they must be kept free from frost, and the roots kept in soil after they are taken out of the forcing-house. Towards the end of April plant them out in good ground in rows 2 feet apart, and 15 inches between the sets. If a number of growths appear on each crown in the summer reduce them to one, as one crown to a root is better than two or three. The plants will not do for forcing next year, but the year after they will be as strong as at first. — J. C. C.

5573. — **Fertilising blooms of Tomatoes.** — Do not worry yourself about fertilising the blooms of Tomatoes, because any attempt to do so does neither good nor harm, for the reason that it is a difficult matter to reach the organs of the flower that would be affected by it, and those who tell you that it benefits the crops in any way would find it difficult to prove the truth of their assertion. Thinning out the fruit is a far more reasonable operation to recommend, especially towards the close of the summer, when the plants are getting exhausted. Even then I do not know that the weight is increased; the fruit is, however, larger. The first blossom in every bunch of flowers should be pinched out, as the fruit invariably comes deformed. — J. C. C.

5542. — **Crops after Celery.** — Root crops, such as Carrots, Parsnips, Beet, and Salsify follow Celery very well; the extra digging and moving of the soil required in earthing the latter is in favour of those crops named. Onions also follow Celery well—in fact, any kind of vegetable will succeed after Celery.

Cabbages or any of the Brassica tribe rob the soil the most of any vegetable. After a piece of ground has been cropped by any of these a heavy dressing of manure is essential to replace those ingredients absorbed by these crops.—S. P.

Root-crops, such as Carrots, Beet, or Turnips, come in well after Celery, as would also Cauliflowers, Beans, and Peas—in fact, Celery forms a good preparation for any crop. But in digging it over the old manure from the trenches should be distributed through the land. This can best be done by digging across the trenches.—E. H.

5585.—**Growing Tomatoes.**—The only doubt in your case is the ventilation. If you can open the sidelights as well as give air at the top you will be right enough. Make a bench over the pipes on each side to hold the soil, keeping the bottom of the bed 9 inches away from the pipes. The heat from the latter will not then interfere with the roots of the Tomatoes, as I hope you will not want to use fire-heat after the end of May. You will find a bowl of soil far preferable to growing the Tomatoes in pots. J. C. C.

5508.—**Soil for Tomatoes.**—It is not necessary to change the soil every year. Trench the border in the usual manner, adding a fair quantity of good rotten manure, then dress with kainit and water well in. When sufficiently dry fork it over, and prior to planting give also a dressing of some good artificial manure. The addition of a mixture of lime and soil is also beneficial.—P. F. L. S.

I have grown Tomatoes in pretty near this same soil in one house for five years,

5568.—**Tomatoes from seed.**—If the frame is quite cold it will be better to sow the Tomato-seeds in the window of a warm room in March. Prick them off into small pots or boxes when large enough, and then move to the frame, and keep close for a time, and securely covered up at night. Harden off and plant out at the end of May.—E. H.

It is useless to sow seed of Tomatoes in a cold frame until quite the end of April, and then you will not get any ripe fruit until August. It would be far better to purchase a few plants at the end of May. Tomatoes require a long season of growth, and it is to do any good in our short summer must be sown early in the year in heat.—B. C. R.

5590.—**Cauliflowers dying off.**—This sometimes happens when the seeds have been sown too thickly in heat. As soon as the seedlings are up move to a house where more air can be given, and prick off as soon as they can be handled.—E. H.

5194.—**Grubs on vegetables.**—You should give the ground a good rough digging or trenching during winter. At present I would advise you to give all the grounds intended for cropping this year a good dressing of hot lime and soil, and manure this year with rotten seaweed, and you will find the grubs less in number.—T. O. D.

BERMUDA LILY (LILIUM LONGIFLORUM HARRISI).

This beautiful Lily is evidently growing in popularity, and that rightly so. Being so amenable to pot culture for flowering at almost any season of the year, it is greatly appreciated, more particularly in the trade and by the florists and decorators. In many private gardens it is also grown, but its culture in this direction does not appear to be taken up so extensively as one would imagine, especially where large conservatories have to be kept gay, or where a quantity of choice cut flowers has to be provided. Last

from that time up to May and June from the Bermuda importations. Those following in June, July, and August I have a shrewd suspicion are Cape-grown bulbs. I have myself purchased them as such in the spring. Those blooming the earliest will give a few more flowers from succeeding growths the following autumn; thus the year is nearly or quite bridged over where necessary. Light loam and leaf-soil, with plenty of sand or road-scrappings, will suit this Lily well. Green-fly is a troublesome pest, but can be kept down by the usual methods. This Lily revels in a humid atmosphere when being forced, and takes water freely when well rooted. How it came to be designated *Harrisi* I do not know; I fail to see any difference between it and the type other than what may be expected in the case of vigorous bulbs grown under more congenial conditions in a warmer climate. This I consider makes all the difference, for I have noticed that *Harrisi* (so-called) reverts to the normal type after a season or two in this country. A good proof in support of this is the fact that *L. longiflorum* has been sought for in quantity in this country and on the Continent for sending out to the Bermudas, where after a season or two's growth they would return in the improved form to this country. The conditions under which the bulbs are grown is, in my opinion, the only cause of variation as seen between home-grown and imported ones. As to their culture at the Cape, it is only reasonable, being a means of further extending the season. This is done, we know, in the case of the *Tulhe-*



OUR READERS' ILLUSTRATIONS: Bermuda Lily (*Lilium longiflorum Harrisi*). Engraved for *GARDENING ILLUSTRATED* from a photograph sent by Messrs. Dobbin and Co., Rothsay, N.B.

and I do not see any difference in the behaviour of the plants now than during the first season. I, however, do freshen up the soil every year before planting by removing a little of the old surface and giving a dressing of fresh earth or rotten manure, as I do not believe in starving Tomatoes. I have seen the plants as badly diseased in a new house and perfectly fresh soil as ever I saw in older structures. At the same time I must say that nearly every other crop I grow is benefited by a change of soil.—J. C. C.

5557.—**Unsatisfactory Tomatoes.**—Tomatoes may be grown in a gravelly soil, but it must be understood they require more support than if the ground is heavier. The soil should also be made firm before planting. The cause of not setting is very likely to be soil lacking in moisture and perhaps they are not sufficiently ventilated.—E. H.

season I saw a house full of this variety in the best possible condition and in various stages of growth. The plants in bloom were some 4 feet in height, with from four to six well-developed flowers upon stout stems. The house in which these were being grown was kept at a stove temperature, warmth being evidently congenial to them. For the earliest flowering this bulbs should be secured as soon as they arrive from the Bermudas. This will be at about the same time as the Roman Hyacinths arrive from the south of France.

Forcing must not be attempted until some new roots have been made; then even the temperature should be worked up gradually for a time by taking all possible advantage, the earliest may be had in flower during December or even in November. Successions are easily obtained

rose, why not also in that of the Lily in question? A word upon the custom of the florists in depriving the flowers of their pollen-vessels is necessary, the flowers being thus shorn of a part of their beauty. Why not dip or touch these parts with gum-water instead, so as to prevent the pollen from tarnishing the flowers? Or wrap a little tissue paper around the vessels until the blooms are in actual use? Anything is better than thus robbing the flowers of a part of their attractiveness whenever and wherever it is possible. The plant that produced the flowers here figured was potted in October, in good turfy soil and sand, a 7-inch pot being used. After being plunged in Cocoa-nut-fibre-refuse in a cold frame till well rooted, it was removed to a cold greenhouse, and flowered in July. S.

URBANA-CHAMPAIGN

OUTDOOR PLANTS.

CHOICE ALPINE PLANTS.

SILVERY HAIRBELL (EDRAIANTHUS PUMILIO).

This (here figured) is a brilliant little alpine with flowers that look large in proportion to the plant. The little close-set tufts of glaucous foliage look sharp and thorny like a Prick



Silvery Hairbell (*Edraianthus Pumilio*). Engraved from a photograph.

Thrift, but prove of a milder nature on closer acquaintance. The flowers are of a full rich purple. G.

5563.—**Hardy perennials.**—The following are all useful showy perennials: *Adonis vernalis*, March and April, 1 foot; *Alstromeria aurantiaca*, July and August, 2 feet; *Alyssum saxatile compactum*, March and April, 6 inches to 12 inches; *Achillea italica*, June and July, 3 feet; *Anemone fulgens*, March and April, 1 foot; *A. japonica* (white and red), August to November, 2½ feet; *Anthemis tinctoria*, June and July, 1½ feet; *Auricularia liliastram*, May and June, 2 feet; *Aquilegia chrysantha* and others, May to July, 2 feet; *Arabis alpina*, March and April, 6 inches; *Asters* (*Michaëlas* Daisies) in variety, from September to November, from 2 feet to 5 feet; *Aubrietia Hender-sonii*, March and April, 6 inches; *Bocconia cordata*, June and July, 6 feet; *Bupththalmum salicifolium*, May to July, 1½ feet; *Campanula* (*Bellflower*) in variety, May to July and August where a selection is grown, and they vary in height from 6 inches to 3 feet; *Catananche bieneri*, July and August, 2 feet; *Centaurea montana* (*Mountain Cornflower*) (blue, white, red, and sulphur), May to October, 1½ feet; *Chrysanthemum maximum* (*Ox-eye Daisy*), June to August, 2 feet; *Cheiranthus Marshalli* (*Alpine Wallflower*), April, 6 inches; *Coreopsis lanceolata*, June to August, 2 feet; *Delphiniums* in variety, June and July, 2 feet to 5 feet; *Dic-lannus Praxinolla* (*Burning Bush*), June to August, 3 feet; *Dielytra spectabilis*, May to June, 1½ feet; *Doronicum plantaginum*, April to July, 2 feet; *Eryngium amethystinum*, July to August, 2½ feet; *Funkia sancrociata graniflora*, August and September, 1½ feet; *Gaillardia grandiflora*, June to September, 1½ feet; the hybrid forms of this are very useful, and are easily raised from seeds; *Galega officinalis alba*, May to July, 4 feet; *Geranium* in variety, May to July; *Geum coccineum grandiflorum*, May to August, 2 feet; *Gypsophila paniculata*, July to September, 2 feet; *Helenium pumilum*, July to September, 1½ feet; *Harpagium rigidum*, July and August, 3 feet; *Iberis corifolia*, May and June, 9 inches; *Lathyrus latifolius albus*, June to August, 4 feet; *Lilium* in variety; *Lapinus polyphyllus*, June to August, 4 feet; *Lychnis chalcedonica fl. pl.*, July to September, 3 feet; *Montbretia croceiflora*, July to September, 2½ feet; *Ponies* in variety, June and July, 1½ feet; *Poppies* in variety, 1 foot to 3 feet; *Herbaceous Plox*, July to September, 3 feet to 4 feet; *Potentilla* in variety, June to August, 1½ feet; *Primulas* in variety, flowers in spring, 6 inches; *Pyrethrum* in variety, June and July, 2 feet; *Rudbeckia Newmanni*, July to

October, 2 feet; *Saxifraga* in variety, mostly in spring; *Scabiosa caucasica*, July to September, 1½ feet; *Spiraea aruncus and venustus*, June and July, 3 feet to 4 feet; *Tritoma nobilis*, July to August, 5 feet; *Carnations* in variety; *Pinks Her Majesty* and *fimbriata major*.—E. H.

—Your query requires a longer answer than space can be afforded for at this season. The following bloom during the spring and early summer: *Adonis vernalis*, spring (yellow flowers), height about 1 foot; *Anemones* of sorts, fulgens (crimson), ½ foot; *Arabis alba*, very good to form a broad edging, of white flowers; *Aubrietia*, dwarf; *Corydalis nobilis*, about 1 foot; *Dielytra spectabilis*, about 2 feet (flowers rose), likes a light soil; *Doronicum caucasicum* (yellow), about 1 foot; *Fritillaria imperialis* in variety, or the Crown Imperial, 2 feet; *Ranunculus acemifolius* (*Fair Maids of France*), varying from 1 foot to 2½ feet or more in height (flowers white), early summer; *R. amplexicaulis*, spring (white, yellow centre); *Saxifragas* as edgings. The following bloom in late summer and autumn: *Achillea Ptarmica fl. pl.* (double white), summer, about 1 foot; *Aconito*, 3 feet; *Alstromeria urea*, light soil, 2 feet to 4 feet (orange-red lowers); *Hollyhocks*; *Anemone japonica*, very beautiful, especially the white one, 3 feet; *Michaëlas Daisies* in variety, varying from 1 foot to 5 feet or 7 feet high; *Chrysanthemum Mne. Desgrange*, 2 feet (almost white), September; *Delphiniums*, late summer; also *Ploxes* and *Lilies*, commencing with the white *L. candidum*, and closing with the beautiful forms of *L. speciosum* (*L. lancifolium*), or the showy *Tiger Lily* (*L. tigrinum splendens*).—C. T.

5589.—**Raising perennials.**—All those named by "Perseverance," except *Gentiana*, can be raised out-of-doors as well or better than in the site suggested. If a border having a southern exposure could be set apart for this purpose so much the better. Dig the ground over at once, giving it an opportunity to dry, add no manure, as seedling plants need none. If the weather is favourable, the first week in April rake over the land, removing any stones, and mark out beds 3 feet wide, with an alley between each 1 foot wide. If the soil is heavy scatter a little prepared soil over the beds to receive the seed. Decayed vegetable refuse, wood-ashes, or disused potting-soil, thoroughly mixed together, answers very well. Sow the seed thinly, covering it a ½ inch thick with the compost. Should the weather be hot and dry at the time of sowing the seed, and afterwards, instead of watering the beds, cover them with mats or green boughs. When the plants are large enough to handle prick them out into rows 8 inches wide and 6 inches apart in the rows, or plant them finally where they are to bloom.—S. P.

—The plants named for the most part require to be sown in a shallow pan and placed in a cold frame. It is difficult to advise about the position named. If the seedlings come up, the great point is to prevent them from getting drawn up, as presumably they could be some distance from the light.—S. P.

5581.—**Bishop's Weed.**—I do not know the weed under the name in which you give it. I think, however, you allude to the Ground Ivy or Bastard Balm, both of which are troublesome perennial weeds. Your only chance of getting rid of them is to take up the turf and clear it with a slow fire; then lightly fork over the surface, and about the beginning of April sow the space with Grass-seeds, and lightly cover it with the ashes from the fire. There is no better way of getting rid of the weeds, but you must take the turf off deep enough to get all their roots. Whatever you may put on to kill the weeds will also kill the Grass.—J. C. C.

5581.—**Planting Irises, &c.**—It is getting late now to plant the bulbous Irises, as the bulbs ought now to be making roots, but the German Irises may be planted now, and if the plants are strong they will flower this season, though not so well as if they had been previously established. The English Irises are among the hardest of the race, and they are very easy to cultivate.—E. H.

—It is late now to plant, and the first year the results will not be satisfactory perhaps, as Irises require time to get them to bloom in perfection. You may plant the German Irises now, and this will thrive in ordinary soil if mixed with a little well-decayed manure, where

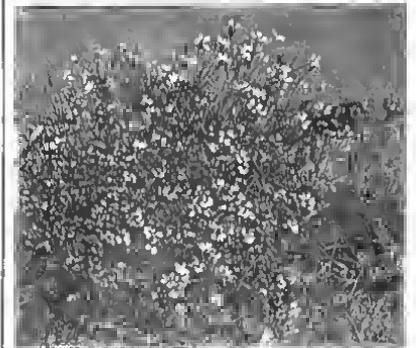
the position is very exposed and sunny. A good half-dozen comprise: *Anrea* (golden-yellow), *Celeste* (rich lavender, set off by orange-coloured beard), the early-blooming *Florentine Iris*, *Gazelle* (the falls rich lavender, veined with white, suffused and variegated with lavender), *Mme. Cherean* (white, with an edge and feathering of violet), the beautiful *Dalmation Iris* (lavender, tinted with purple on the falls), *Queen of May* (very beautiful, with its shades of rosy-lilac), and *Victorino* (white standards, blotched with bluish-purple, the falls violet-purple, veined with white). These, if good plants are put in now, will bloom fairly well the coming summer, but at least three years must elapse before they flower in perfection. On your border would also succeed the early spring-flowering *Iris reticulata* (the flowers deep-purple, and very fragrant), *English and Spanish bulbous Irises* (both giving a great variety of colours). The *English Iris* is really a Spanish species (*I. xiphoides*), and the flowers are large, broad in the segments, the colours varying from white to self purple. The bulbs will thrive in any light sandy soil, and increase quickly. The *Spanish Iris* (*I. xiphium*) blooms rather earlier than the preceding, the flowers also have narrower segments, with colours ranging from blue to quite a bronzy tint. The bulbs also succeed well in light sandy soil. *I. Kempferi*, which blooms in late summer, must have moisture, and is a beautiful Iris in its variety of colouring for planting at the margin of a stream or pond side, like the graceful *I. sibirica* (the *Siberian Iris*). A lot of beautiful little bulbous kinds, *I. histrio*, *I. histrioides*, and *I. Bakeriana* are in beauty now, and are very useful to grow either in pots or the open.—C. T.

5590.—**Plants for a border.**—You may have a choice selection of hardy plants, pegged-down *Roses*, *Gladioli*, *Dahlias*, such *Lilies* as *L. auratum*, *L. speciosum*, and *L. tigrinum*, the last two mentioned autumn-flowering, *Michaëlas Daisies*, *Ploxes*, *Delphiniums*, and similar things; see reply to 5589. The *China Roses* would look well in this position.—C. T.

USEFUL "CARPETING" PLANTS.

TUNICA SAXIFRAGA.

This little plant is not often seen in gardens, perhaps because its place and use are not so obvious as those of more showy things; but rightly employed it is a pretty and useful plant. It does well in bare, poor ground, and is very handy for carpeting over hulbs. Where the *Meadow Saffrons* are grown in borders (their rich place being, of course, in Grass), there can be no better plant to cover the space they leave bare before and after flowering. The bushy, rather wiry nature of the *Tunica* flower-stems



Tunica saxifraga.

gives just the support needed by the *Colchicums* whose heavy flower-cups, lacking the friendly support of their natural ally, fall over before their beauty is past, and present a miserable appearance, lying flat upon the ground. R.

5581.—**Planting Dahlias.**—You cannot possibly manage to have *Dahlias* satisfactory for sale from old roots without a greenhouse or frame. To propagate cuttings in early spring, however, you may give them an early start by plunging them in a heap of ashes or hot manure by a sunny wall, keeping them well watered. Divide

the old roots and plant out in beds or borders from 3 feet to 4 feet apart in May. When a foot in height place a stake to each plant to keep the wind from breaking it.—P. O. D.

5583.—Plants for a wall.—The Pyracantha is a very ornamental wall plant, especially in winter.—E. H.

—As you wish for plants to look green and bright through the winter months too, I am afraid you will be disappointed, as you omit the plant of all others looks best in winter—namely, the Ivy. You have a choice of the Virginian Creepers, but these are deciduous. They were, however, very brilliant in the autumn with their gay crimson-coloured leaves. Perhaps you could coax Azara microphylla into good growth. Its abundant glossy foliage is very pleasing, but it wants a rather sheltered spot; at least, during the past few winters the plants have got much cut about. Bignonia radicans is pleasing against a sunny wall, and under such conditions blooms fairly freely. Clematis Luckmanii or C. montana are fine, the latter quickly mounting and producing a wealth of white flowers in early May. Attend to the shoots in spring, removing the weaker ones, but train in all those that are rigorous, as these bloom the following year. Jasminum nudiflorum blooms throughout the winter, and might be planted, but it flowers without the leaves. Then you have a choice of Honeysuckles, Climbing Roses, especially the beautiful Gloire de Dijon, exquisite tumbling over a gable, and the Vines, the Liliensis Grape in particular, its leaves turning to splendid colours in the autumn.—C. T.

5558.—Best annuals for small gardens.—Crocus, The Bride and Lady Albemarle, Candytuft mixed, Chrysanthemum (Tricolor), Franching Larkspur, Linum rubrum (Scarlet Flax), Nasturtium Frac Thoud mixed, Scabious mixed, Sunflowers, Mignonette, and Sweet Peas.—E. H.

—Linum grandiflorum rubrum, Empress Candytuft, Shirley Poppy, Neophila ludgisi, Rocket Larkspur, and Godetia Lady Albemarle or The Bride would be a suitable selection, all of easy growth and productive of a full crop of blossom.—S. P.

I have named twelve good bright annuals; Marigolds, especially such a showy variety as Orange King; Cereopsis bicolor, Candytuft, Cornflower (Centaurea cyanea), Clarkia elegans, Chinese Pink, Eschscholtzia, Godetia, Sunflower, Linaria, Linumthea Douglasi, Lupines, Mignoeette, Nasturtium, French Poppies, and Sweet Peas. You may choose eight out of any of these, all being very beautiful hardy annuals, readily raised from seed sown in the open in March or April. Be careful always to thin out well, so as to leave each plant sufficient space to develop satisfactorily.—C. T.

INDOOR PLANTS.

5562.—Begonias (tuberous rooted) from seed.—The process of raising these plants from seed has been repeatedly and minutely described in back numbers of GARDENING. As the seed is very minute it must be sown on a very finely sifted surface of light rich soil—leaf-mould that has been previously well-baked is best—and the pots or pans be placed in a steady moist heat of 65 degs. to 75 degs. It must also be kept moderately and evenly moist, and shaded from direct sunlight. It is also important that the drainage be extra free, and the soil need not exceed 1 inch, or 1 1/2 inch, in depth. Cover each pot or pan with a sheet of glass to check evaporation, and as soon as the seedlings appear these must be gradually tilted until they can be dispensed with altogether. Prick off the seedlings singly, into other pans or boxes of fine light soil, when in the first "rough" or proper leaf, robx them as soon as they begin to touch each other, and finally pot them singly, or harden off and plant out-of-doors in June. If the plants are to bloom the same year the seed must be sown in January or February, and artificial heat will be required until the beginning or middle of May. Or you may sow in May in the greenhouse, and keep the little tubers over till the next season.—B. C. R.

5597.—Uses of a propagator.—It is the steam which causes the injury to the leaves of your "Geraniums." They do not like so much moisture in the air which surrounds them. You can raise plants from seed of all the subjects you mention in the propagator, but if you have no greenhouse you had better raise the seed at the beginning of April, as such young seedling

plants require a warm, close place after they are taken out of the propagator. If you sow the Sweet Peas in pots at once you may raise them in a sunny window. Yes, you must keep the light burning night and day, except when the heat is a little too much, then you may let it out for an hour or two early in the morning and again in the evening.—J. C. C.

5555.—Ficus elastica.—Young cuttings taken off close to the stem with a small piece of the old bark, planted in thumb-pots filled with sandy peat, and plunged in a brisk bottom-heat and kept close and shaded will soon root. The cuttings may be put in now or when they can be obtained. I have struck them from single eyes and one leaf, the bud or eye being taken out with a thin slice of bark and wood, a small stick being placed to support the leaf. After the cuttings are planted a notch cut under the bud would have no effect, except in cases where young shoots are withheld, and the notches covered with damp Moss with the view of striking the tops of the plants before removal. This can be done, but it takes more time than cutting off the top and plunging it in a moist hot-bed.—E. H.

GROUPING PLANTS IN GREENHOUSES.

EXCELLENT results as regards effect can be made in almost any greenhouse, conservatory, or fernery by a group or groups of Ferns and other plants (see illustration) arranged on the floor of the building. A corner or centre bed



Group of Ferns and other plants in a greenhouse.

can be so set off to great advantage in this way, and the plan gives a lighter and more natural appearance to the plants than when they are all arranged on stiff stages, &c. B.

5547.—Growing Heliotropes.—These delightfully fragrant plants require rather liberal culture, yet with a fair amount of fresh air and care to solidify the growth. With suitable treatment, young plants from cuttings struck, say this month, and kept near the glass in a light house, will bloom abundantly at about a foot in height from the rim of the pots, in July or August of the same year, and such plants always produce far finer heads than old and starved examples. As good a system as any is to strike the cuttings in the early spring, in heat, placing several together in 5-inch pots. When well rooted put them off singly, and as soon as rooted out pinch out the points of each. When fairly in growth again shift into 5-inch pots, or a few of the strongest into 6-inch size, using good loam with half the quantity of leaf-mould or old hot-bed manure and some sand. Loop up the shoots to a next central stick as they grow, and give weak liquid-manure once or twice a week when coming into bloom. Autumn-struck cuttings may be lowered earlier, of course.—B. C. R.

5473.—Plants for a north greenhouse.

—A north house is very useful for retarding plants, and for keeping things in bloom after the show is over, but it is not a good growing house. It is well adapted for the raising of plants and bulbs of various kinds, including the

all kinds of Ferns will do well, and foliage plants, such as Dracaena indivisa, Fan Palms, Aralia Sieboldi, and Aspidistras. In summer, Fuchsias will do well, as will also Liliums of various kinds. If Lapageria are planted out in a properly prepared bed they will cover the back wall and the roof.—E. H.

5518.—Tuberous.—If I understand you to have placed the Cocoon-fire around, and not beneath the bulbs, it may be of benefit to them; not otherwise. You may place a few into a heated house at once, even near the pipes if you wish some early; but for August and September blooming they had better rest where they are. Great care should be taken not to have them too moist before the roots are active, or they will rot at the base.—P. U.

5427.—Heating a brick pit.—Yes, a well constructed one is as good a method of heating a small pit as any other, and better than a small hot-water apparatus, for this reason, that with a proper furnace and the draught well stopped, the fire will remain night twice or three times as long as in a small boiler. Nine inches square (inside) is a very suitable size for the flue; it should be covered with what are termed "quarries," or flat tiles 12 inches square and about 2 inches thick. Unless anthracite coal is procurable, in which case an ordinary horizontal furnace, like that of a washing-copper, will do, the best plan is to make a deep square one, say 18 inches deep, and 3 inches or 10 inches square, with the feet-

floor at the top, and ash-pit and draught-regulator at the bottom. A fire in such a furnace, when filled up with coke, and the draught stopped below the fire, will remain alight for eighteen or twenty hours easily. I recently constructed an excellent double flue, the lower one being built as described above, with a return above consisting of 6-inch socket earthenware pipes (glazed). A passage direct from the furnace into chimney was arranged (as well as the other), and a damper fixed in it; when the fire is lit this is opened, and as soon as the fire has burnt up and the chimney become warm it is closed, and the draught forced to pass through the flue.—B. C. R.

5514.—Crimum bulbs.—As the bulbs name from India they are no doubt varieties that require a stove temperature. In that case your treatment has been right. You may increase the warmth with advantage as the spring advances; otherwise you may continue the same. The greatest danger is in giving too much water while the bulbs are dormant. I do not think you will see much signs of growth until May. There is plenty of time for them to flower in their usual season after that, which is generally in the months of July and August. If they are potted in a moderately light compost a change of soil will not help you.—J. C. C.

5577.—Making a hot-bed, &c.—Throw the litter and leaves into a heap mix it, &c. together. If the latter is very thick, mix it with some of the litter. After it has lain for three or four days turn it over, allow it to lay three or four days more, and then make up. By

this method of management, heat in the hot-bed is not so violent or irregular as when made up at once. Very often then parts of it are dry, and instead of fermenting properly it becomes mildewed, thus the heat in the bed is irregular. The beginning of March is quite early enough to start—in fact, rather too early if the materials named are scarce. Beds made up early require additional linings to them to maintain the heat.—S. P.

5574.—Gas and electric light in a conservatory.—I do not know what you may mean by the word occasionally in reference to the use of gas in a conservatory? It may mean once a week or once a month? I may, however, tell you that some years ago I had charge of a conservatory quite as large as the one you mention, only about 10 feet higher. This was well lighted with gas. Once a week I had to clear the floor of this building all the winter for a certain purpose, and although the gas was usually alight about five hours, the plants were never injured, and none were taken out, only packed closer together round the sides. The ventilators at the top were always left open a little way. I should, however, give the preference to the electric light, as it gives out no injurious fumes, and the light is more beneficial than otherwise to plant life.—J. C. C.

—Not the slightest if the gas-jets are not near the plants, and they are not used too often. The mischief is when gas is constantly burnt, thus drying up the air. But electric light is better. It is less drying, cooler, and not so glaring.—C. T.

5550.—Heliotropes from seed.—You can raise these easily enough in a frame over a hot-bed at 70 degs. to 80 degs. in March or April, or possibly in a cool frame or greenhouse in May, but without heat it is no use to sow yet. I have got them up by thousands in a propagating-house in March, but unless the seed is quite sound and fresh it will not grow, however carefully treated, and as it is a thing that there is but little demand for, you are very likely to get old seed.—B. C. R.

—Heliotropes may be raised from seeds in an ordinary garden-frame, especially if there is a mild hot-bed under the frame. Sow now if there is any warmth. If there is no heat beyond the sun's warmth, better delay sowing till end of next month.—E. H.

5445.—Making a propagator.—Yes, it is best to support the tray. This can be done by placing two strips of wool lengthways inside, and the same depth as the tray. The perforated sheet will then be quite level. You may call the tray which holds the water a tank if you like, but if you think that a greater depth of water would be better you are mistaken, for two reasons, one of which is that the more water there is to heat the more oil you must burn; the other reason is that the more water there is in the tray the more condensed moisture there is above it, and which will be found to be troublesome by causing scallings or cuttings to damp off. With regard to the size of the lamp, mine is 8 inches high, with a single wick half an inch wide. The box should rest level on the ground, and the opening, which enables the operator to take out and replace the lamp, should be closed when the lamp is burning. The bottom of the tray should be 9 inches from the side of the box, and 8 inches or 9 inches above the Cocoa-nut-fibre. You can have more space than this above if you like, but the more air there is to heat in this space the more oil is consumed to maintain a suitable temperature.—J. C. C.

—Yes, you had better support the perforated zinc by two strips of wood fixed across beneath it, if to carry any weight. A lamp with a 1½-inch wick will give plenty of heat for a propagator 1 foot 8 inches by 1 foot 6 inches. Of course, provision must be made for admission of air to the lamp from beneath, or it will not burn properly. I always fix my propagators on legs at a moderate height from the ground, and block up the lamp beneath to the proper height.—B. C. R.

5500.—Treatment of Streptocarpus.—In the early stages these plants, when raised from seeds, require the same treatment as Gloxinias, i.e., they require a warm-house or pit, and shade. When well-established they may be grown in a warm greenhouse. At present most cultivators use chiefly peat and sand, but it will probably be found when their culture becomes more general that equally good, perhaps better, results will be obtained by using

a richer and rather heavier compost. Sow the seeds in a pot or pan in moist soil, cover lightly with silver sand, and cover with glass. When the seedlings are large enough to handle, prick off in other pots or pans 1 inch apart, and when some growth has been made, put either singly or three in a pot; 5-inch pots will be found large enough for growing them in. They may be propagated from leaf-cuttings in the same way as is done with Gloxinias, but they seed freely, and any kind of propagation will only be required to perpetuate particular varieties.—E. H.

5266.—Coleus cuttings.—The Coleus is a most easily propagated plant from cutting. The time to take them is the spring, and they root quickly when put separately in small pots filled with a light soil and placed in gentle warmth. When rooted put them on, and as they make comparatively quick growth, one must be careful not to let them get pot-bound. They must have a warm greenhouse temperature, certainly not less than about 55 degrees in the winter months. It is useless trying to keep them in a cooler house, and when this is not possible propagate a great stock every spring from cuttings, throwing away the old plants when past their best. Give them a light position to bring out in all its fullness the full richness of the leaf colouring, which is in many varieties remarkably handsome, especially those approaching a self colour. The best soil for the Coleus is one made up of well rotted turf, a little thoroughly decomposed cow-mannure, mixed with sufficient sharp silver sand to keep the compost open. Put firm, and when the plants are in full growth weak liquid-mannure may be given with advantage. It is a great mistake to cold the plants up, so to speak, in the summer months, as unless they get air and light in moderation, the growth will be tall and lank, and the leaves of dull colour.—F. P.

—These will root at any time, but best in the spring and summer. A light sunspot and strong, moist heat will strike them freely. It does not matter if they are cut off at a joint or not; any piece of young wood will root with remarkable freedom, so will other wood. A little sharp sand at the base, a moist and partially shaded temperature of 65 degs. to 80 degs. will ensure success.—F. P.

5406.—Cytisus cuttings.—Cuttings of the ends of the young shoots 2 inches or so in length, just getting a little firm at the base, will root under a bell-glass in sandy loam and leaf-mould in about equal parts, with a layer of about half an inch of clean sand on the top of each pot. Must be kept close and shaded from bright sunshine; the bell-glasses to be wiped quite dry every morning. A temperature of 50 degs. to 60 degs. will be suitable. There are generally plenty of good cuttings in April and May or later. If the cuttings are taken in summer they will do in a cool frame.—E. H.

5500.—Chinese Lilies.—Weak and immature bulbs is, I think, the only satisfactory answer that can be given to this inquiry. Some of my bulbs behaved in the same way last year, while others did very well, and all under the same treatment, so that I think it is quite reasonable to suppose that the cause of failure lays in the direction I have indicated. I expect the demand for these bulbs has increased faster than the means taken to keep up the supply, consequently all the stock has not been sufficiently prepared.—J. C. C.

5587.—Azaleas from seed.—If you possess a reasonable amount of patience to wait for the young plants to come up, you will not have any serious cause to regret your outlay, seeing that you will be content if the flowers are suitable for cutting. This they will in all probability be, and no doubt a fair proportion of the plants will be worth growing as pot specimens. The young seedlings are liable to damp off if they are given too much room. Put each one singly when large enough in a 2½-inch pot, and then plunge the pot to its rim in another three sizes larger that is filled with soil. This will keep the soil about the roots more uniformly moist, which will ensure its making greater progress.—J. C. C.

—Unfortunately you do not say if the seed you possess is from the Mollis, Ghent, or Italian section of Azalea. The two first will come good enough from seed, but the last is not so certain. Ghent and Mollis Azaleas seed freely, and cross with the varieties of their respective sections, but a good variety of cotton-wool may be looked for.—F. C.

5274.—"Geranium" cuttings.—It is quite early enough to begin striking cuttings of these plants yet, and I always find they do better inserted about the beginning of March than earlier. In the meantime the plants had better be hardened off a little by keeping them moderately dry, and admitting air whenever possible. If any of the tops or side-shoots, about 3 inches long, are taken off and inserted in well-drained pots of sandy loam in three or four weeks' time, nearly all of them will soon root in a temperature of 55 degs.; but they must be kept moderately dry, and, if possible, near a hot-water pipe or fire till rooted. Potted singly in March or April, they will make nice little flowering plants by June. Keep the old plants dry for a time, and when growing again, shake out and repot, and they will bloom beautifully all the summer.—B. C. R.

—It is very easy to propagate Pelargoniums from cuttings made from old plants started in gentle warmth, but they should not be young or succulent, otherwise they are apt to damp off quickly. Take the more ripened shoots, cut them just under a joint, and put them round the side of forty-eight or 5-inch pots, filled with a light soil, or they may be put into separate small pots, placing them in a warm frame or a hot-bed, or some similar place, to induce quick rooting. When struck, if in the forty-eight sized pots, pot them off separately, and from thence onwards pot them on when the pots they are in at present are filled with roots. If the cuttings are good in the first place, and the plants are grown up carefully, they will be ready to go out in early June, although not so free as those from cuttings struck in the previous autumn. The old plants will bloom well in the summer, and in many gardens they are made good use of, giving a remarkably free display of their showy flowers.—C. T.

5279.—Starting Begonias.—"An Amateur" will be able to manage this very well with a frame, seeing he does not require them earlier than for bedding-out in the summer. The plan, as suggested, of putting them in pans or boxes and placing in a warm shelf in the dwelling-house is excellent. Do it now, and then transplant to the frame early in April. If you can manage a very little heat in the frame from manure and decayed leaves it will be better. I should transplant into the frame in preference to potting; it is safer as regards water, and saves much trouble. They will lift well if given a good soaking the day previous. Your idea is excellent all through, and there is hardly any subject more pleasing or easy to grow for bedding out.—P. U.

—Tuberous Begonias are not so troublesome to start into growth as many suppose, judging from inquiries about them. You could very well follow out the plan you propose, which is really the only feasible one, as you have no artificial heat whatever. They will start slowly but surely, taking care, however, that they are not exposed to frost. When they have made a few leaves, pot off using a rich, moderately light soil. Good loam, with a fine proportion of leaf-mould, forms an excellent compost for them, not forgetting to drain the pots well. Syringes also every day if possible, but do not expose the young leaves to the bright sunlight, which scorches them. As they get established, expose them to the air, and before being bedded out they may be well hardened off in a cold frame. But as you possibly know well, frosts are fatal.—C. T.

5342.—Gloxinias from seed.—Sow the seeds in the hot-bed in spring, or in a warm house. Prick off into pans of light soil when large enough to handle 2 inches apart, and when the leaves meet place in single pots. During growth they must be kept close and shaded in a warm pit or house. The seeds are very small, but if they are now the seeds grow freely. Drain the pots well, and press the soil, which should be light and sandy, in firmly. Water the soil before sowing the seeds, and cover lightly with silver sand. Place a square of glass over the top of the pot, and plunge in bottom-heat.—E. H.

5300.—Plants for a greenhouse.—Geraniums, Fuchsias, Hydrangeas, Cytisus, Camellias, Myrtles, Oleanders, Tuberos Begonias, Agapanthus umbellatus, Gladioli, and Mignonette, are all easy to manage, as are also the common Dutch bulbs for early blooming. These should not be forgotten.—E. H.

ORCHIDS.

DENDROBIUM LEECHIANUM.

This is a hybrid raised between *D. noble* and *D. aureum*, and its flowers have a good deal of the perfume of the last-named parent still left, which adds materially to its value as a winter bloomer. I have received some flowers of this plant from "Reuben Bryan," asking if they are true to name, and if I will give him some notes upon the culture? In this case I can speak from practical experience, having had a lot of plants of this variety under my charge, along with its near relative, *D. Ainsworthi*, which appeared at the same time, and which is from the same cross. Now the variety *D. Ainsworthi* I consider as superior to the form now before me; but the best and largest and finest of all this set is the Veitchian hybrid named *splenditissimum*, which takes first rank amongst all the varieties which have been obtained from *D. noble* and *D. aureum*. I will, however, here confine my remarks to the *D. Leechianum*. It is a very variable plant, indeed, it approaches very near to *D. Ainsworthi*. Indeed, it is natural enough that it should run into that form, but one peculiarity in *Leechianum* is that the base of the lip closes over the column, whilst in *D. Ainsworthi* the lip, although erect, does not close over it, but it is quite exposed, and it is also usually reflexed at the tip, as in the flowers before me. The sepals and petals are white, and a rosy-pink, and the lip is stippled with the same colour, and it has in addition a broad blotch, bright-crimson on the disc, with numerous radiating lines running out from it. The growth is somewhat in the way of *D. noble*, and it wants treating very much in the same manner, but it likes more warmth when growing, and it will not stand so much drying or so much cold treatment. It likes a nice moist warm atmosphere, with plenty of light and air. When the growth is finished it may be removed to the cool end of the Cattleya-house, and be kept dry for a time. It flowers at this time of the year, and the flowers remain long in beauty. This variety will make a wonderful show if you have the strong growths you speak of upon it, because you may reasonably hope to have a very much larger number of flowers next season than you have this.

MATT. BRIDGEMAN.

require much heat. But you may also have the hardy *Cypripedium spectabile* in pots. This is a beautiful flower, far more so than many of the heat-loving kinds, the flowers rose and white. Good pots of *Orchis foliosa* also are very fine, and it is quite worth growing in the greenhouse, also *Dica grandiflora*, the showy saucer flower of the Cape of Good Hope.—C. T.

HOUSE & WINDOW GARDENING.

MOUNTAIN CLEMATIS (C. MONTANA).

As a wreathing or garlanding climber for early summer blown around a house window or in a porch nothing can approach this lovely Clematis. Its beauty is best seen when trained loosely and freely; nailed tightly and flat against a wall, the many graceful forms it is willing to fall into are lost. The annexed illustration shows the plant growing in a natural and unrestrained manner. Anyone who wishes for a beautiful flowering climber to



Mountain Clematis (C. montana) around a window.

adorn the house cannot do better than plant the Mountain Clematis.

5519. — **Orchids for a greenhouse.**—Several Orchids may be grown in a greenhouse, and the most useful of all is *Cypripedium insigne*, the familiar Lady's Slipper, which is a really beautiful flower. This may be grown practically without artificial heat the whole year. The plants may be placed in a cold shady frame during the summer months and brought into the greenhouse in the autumn, where they will bloom freely throughout the winter months. The great charm in *Cypripedium* is that the flowers are not touched by fogs—at least, less so than the majority of Orchids. The brilliant orange-scarlet flowered *Ailu maritimum* will succeed in the greenhouse, and of other kinds you may grow are: *Cologyne cristata*, which blooms at this time; *Lycaste Skinneri*, of which there are many varieties, the flowers in some instances splendidly coloured, especially the lip; *Masdevallia Veitchi*, *M. Harryana*, and the pretty little pure-white *M. luyarensis*, one of the most useful of all winter-flowering Orchids. *Odontoglossum crispum* (Alexandria), is another useful species, the flowers varying greatly in individual varieties, but even the purest forms are beautiful. It is an easily grown Orchid, and thrives in quite a cool temperature. *Lycaste Skinneri* is another useful species, very variable in colour, especially on the lip, which is sometimes deep-crimson, or pink-rose. You might also with care grow *Oncidium tigrinum*, a beautiful species, the flowers as richly scented as the Violet, and very showy, the lip yellow, and the sepals and petals barred with deep-brown on a similar ground colour. *Sophronitis grandiflora* in shallow pans where the light would make a bright display of colour, and the violet-scented and handsome *Zygopetalum Mackayi*, may also be included. This has large flowers on a strong spike, the lip veined with a bluish colour on an almost white ground. All the Orchids mentioned may be grown, and they do

5515. — **Wireworms.**—In reply to "Alpha," wireworms have a hard, wiry skin of a dull yellow, or coppery hue, and they vary in length from half an inch to nearly an inch. They are very fond of French Beans, and when I built my Tomato-houses, knowing the land was infested with wireworms, I planted rows of French Beans between the rows of Tomatoes. The Tomatoes did well, as the Beans protected them till they got strong, but of course the Bean crop was a failure. Whenever the Beans were uncovered, half-a-dozen wireworms of different sizes, from the tiny, thin insect to the large, fat fellow, would be found embedded in each Bean. To look at a wireworm when suddenly unearthed one would think they had no energy to eat Tomatoes or any thing else; but they must wriggle their hard, shining bodies through the loose earth at a pretty good pace, and they will soon have a hole through a French Bean, or up the stem of any plant they like. But they do not stop long with a plant after it begins to wither. This is why they are so destructive. They must continually have fresh food.—E. H.

RULES FOR CORRESPONDENTS.

Questions.—Queries and answers are inserted in *GARDENING* free of charge if correspondents follow the rules here laid down for their guidance. All communications for insertion should be clearly and concisely written on one side of the paper only, and addressed to the Editor of *GARDENING*, 37, Southampton-street, Covent-garden, London. Letters on business should be sent to the PUBLISHER. The name and address of the sender are required in addition to any designation he may desire to be used in the paper. When more than one query is sent, each should be on a separate piece of paper. Unanswered queries should be repeated. Correspondents should bear in mind that, as *GARDENING* has to be sent to press some time in advance of date, they cannot always be replied to in the issue immediately following the receipt of their communication.

Answers (which, with the exception of such as cannot well be classified, will be found in their different departments) should always bear the number and title placed against the query replied to, and our readers will greatly oblige us by giving, as far as their knowledge and observations permit, the correspondents who seek assistance. Confusions, omissions, and omissions vary so infinitely that several answers to the same question may often be very useful, and those who reply would do well to mention the localities in which their experience is gained. Correspondents who refer to articles inserted in *GARDENING* should mention the number in which they appeared.

- 5514.—**Autumn-sown Onions.**—When should I plant out autumn-sown Onions?—G. SHERBURN.
- 5515.—**Manures for Evergreens.**—What are the best artificial manures for Evergreens?—J. M. S. P.
- 5516.—**Perennial plants.**—What perennial plants remain longest in flower during the season?—A. M. S. P.
- 5517.—**Manures for Hops.**—Will someone please tell me the best artificial manures for Hops?—H. F. S. P.
- 5518.—**Propagating Gardenias.**—Will someone kindly advise me the best plan of propagating Gardenias?—J. S.
- 5519.—**Mountain Ash.**—Will someone kindly tell me if the Mountain Ash will grow at a great elevation? Can it stand a rigorous mountain winter?—A. H. M.
- 5520.—**New Chrysanthemums.**—Will "E. M." kindly give the names of the best twelve new Japanese Chrysanthemums for exhibition purposes?—J. K. C. S. P.
- 5521.—**Peat Moss-litter for a hot-bed.**—I should be much obliged for information as to the best way of making a hot-bed with Peat Moss-litter from the stable?—P. W.
- 5522.—**Soil for Tomatoes.**—Will anybody please tell me whether turf from the top of a marl-pit would do in pot Tomatoes with, and if there is much goodness in it?—P. L. P.
- 5523.—**Box eelings.**—Would someone please to inform me what is the best time to put a Box eelings to a border, in the far north, subject to late frosts?—H. S. S. P.
- 5524.—**Catching Voles.**—Will anyone kindly inform me what kind of bait to use for catching Voles? I have tried several kinds, but cannot catch any of them.—H. L. S. P.
- 5525.—**Begonias flowering.**—I shall be much obliged if anyone will inform me if Begonias (single) sown the second week of February will flower the same season?—A. M. S. P.
- 5526.—**Carnations out-of-doors.**—Will someone kindly give me full particulars as to the soil for and appropriate treatment of Carnations to be placed in an outside bed in March?—H.
- 5527.—**Chicken manure.**—I should be glad to know its manorial value, how it should be applied, and when? My garden is rather a small one, and contains several Rose-trees.—A. S. P.
- 5528.—**Plants near the glass.**—I so often see the advice in regard to potting plants, &c., to keep "near the glass." Will someone please to inform me what distance from the glass that means?—J. P. P.
- 5529.—**Seeds of Ceanothus, &c.**—I should be glad of any information respecting the treatment of seeds of *Ceanothus* *paniculatus*, *Ceanothus* *paniculatus*, and *Boronia* *meadwegiana*?—H. S. S. P.
- 5530.—**Powl manure.**—Is it assured from some people that it is a good manure for a small garden? A neighbour of mine has offered me a quantity, but I am afraid that, being fresh, it would be too strong. Is this so?—W. L. S. P.
- 5531.—**Good King Henry.**—Will someone kindly give directions for cooking Good King Henry? This is a vegetable little known in the south, and much extolled in Gloucestershire some time back.—A. S. S. P.
- 5532.—**Aralis Sieboldi.**—I have a plant of this that got touched with frost, and it is very tall. Can I cut it back about 15 inches, and strike it, and if so, how would it do in water or soil? I have no stove.—S. P.
- 5533.—**Moles in a garden.**—My garden is overrun with Moles. I have tried traps, but cannot catch many. Will anyone kindly tell me of any poison or other remedy that I could use by putting it in their runs?—S. H. P.
- 5534.—**Preserving putty.**—What can I put the putty over with to prevent drip and the putty from rolling? Is there anything to mix in with putty to render it more durable for the roof of a greenhouse?—H. S. S. P.
- 5535.—**Unsatifactory Hyacinths.**—My Hyacinths, both in pots and glasses, are very short, quite stunted, in fact; the flower is scarcely above the leaves. I wish to know the reason of this, and how it can be prevented?—L. S. P.
- 5536.—**Myrtle against a house, &c.**—Will someone please to tell me if a Myrtle will grow against a house facing south, in one of the Midland Counties? Would the Myrtle do on the north wall, and a fruit-tree on the south?—E. J. W.
- 5537.—**Fruit-tree in a north-east aspect.**—Will someone please to tell me the best fruit-tree to grow

against a house with north-east aspect that will not have any sun after 9 a.m. Locality, lower part of Bucking. hamshire.—B. J. W.

5638.—**Crotons and Dracenas.**—Would highly-coloured Crotons and Dracenas live during the summer months in an unheated lean-to greenhouse facing south, in which Crotons do well? Situation, Queenstown, South of Ireland.—C. A. G.

5639.—**Fish refuse.**—I wish to know how to dry and make fish refuse into powder or paste, or in any way to make it so as to give it to plants. "Geraniums," Roses, and Chrysanthemums, and what quantity is sufficient to give them?—G. B. B.

5640.—**Truest thermometers.**—Which thermometers tell the truest, mercury or spirit? What would be the price of a reliable one, and in what part of the greenhouses, heated with a coke stove, would be the best place for it?—J. F. P.

5641.—**China Asters in pots.**—Into what sized pots should China Asters be first potted into, and will they require a second shift; if so, into what sized pots? In planting into boxes and out of seed-pans, what distance apart ought they to be?—J. F. P.

5642.—**Gold-fish in a glass vase.**—Would someone please to state how Gold-fish should be properly cared for which are kept in a glass vase, and to what age they usually live? The ones I have being about 2 inches in length now.—H. B. HULLS.

5643.—**Potting Lobelias.**—In potting Lobelias from the seed-pans what sized pots should be used? Will they require a second shift; if so, into what sized pots? If planted into boxes out of seed-pans, at what distance should they be planted?—J. F. P.

5644.—**Culture of Olea, &c.**—Will anyone please to give me some hints as to the cultivation of the following plants—*Olea*, *Chenopodium*, *Piptanthus*, *Uapenalis*, and *Olearia* *Haastii*? Could I grow the former in a cold greenhouse?—TULLYHALL.

5645.—**Gold-fish out of doors.**—Will anyone kindly tell me if Gold-fish will live in an ornamental basin out-of-doors, and if so, what is their proper food? Any other hints as to their management, both in and out-of-doors, will oblige? Climate mild.—G. A. G.

5646.—**Dissolving bones.**—I wish to know how to dissolve bones into a powder? I have a quantity every week to dispose of. Which is the best way to give it to "Geraniums," *Fuchsias*, *Roses*, and *Chrysanthemums*, and what quantity to give them?—G. B. B.

5647.—**Potting off Stocks.**—In potting off Ten-week Stock into what sized pots should they be potted? Will they require another shift before planting out? If so, into what sized pots? In planting out of pans into boxes, at what distance should they be planted?—J. F. P.

5648.—**Cyclamen not flowering.**—I have a Cyclamen with only four leaves, and no sign of blossom, one leaf measuring fully 8 inches across. All my others have done well under exactly the same treatment. Will anyone kindly tell me the cause and cure?—J. F. P.

5649.—**Cutting down Ivy.**—What is the best time to cut down Ivy on a wall from which the brangles protrude from 1 foot to 2 feet? I would like to cut it off close to the wall, but should not like it to look bare all the summer. Would it be wiser to cut it now?—INQUIRER.

5650.—**Dressing a lawn-tennis ground.**—There is mossy stuff grows all over the top of my lawn. Will any reader suggest anything so as to get rid of it? And the Grass gets bald. Also what is the length and breadth of the white lines for lawn-tennis?—B. M. C. Y.

5651.—**"A Loughborough" boiler.**—Will anyone who has given the "Loughborough" heating apparatus for hot water in a fair trial kindly say how it has answered, and if it is a boiler is sufficient to heat three sides of a greenhouse, 18 feet by 8 feet, with 3 inch pipes?—JANE ARDEN.

5652.—**Plants for a shaded border.**—I should be glad to know what would be the best to plant in a border that is shaded by overhanging trees, and hardly gets any sun at all? I should prefer plants that would flower during the summer. Would *Lilies* or *Glaucifolia* suit this position?—T. C.

5653.—**Hedychium Gardenianum.**—I have a plant of this in my conservatory. Keep it in a cold greenhouse. It did not bloom last summer; is now dying off. Should I cut off the withered stalks, and will it break from the bottom again? I potted it and fresh potted it about two months ago.—HIBERNIA.

5654.—**Short-stalked Violets.**—Can anything be done to make the numerous single Violets grow with longer stalks? I have abundance of flowers, but most of them are almost too short to pick. The roots were thinned out last year, but had been neglected before. The Violets are in an ordinary border facing east.—JARDNER.

5655.—**Climbing Roses and Hops.**—I have some climbing Roses and Hops on my verandah, and every spring and summer I am troubled with the greenfly; they run up and down with water, which is a great nuisance and trouble. Will someone please tell me what is the best thing to do to prevent it coming?—H. BULLOCK.

5656.—**"Marguarita" Carnations.**—Would anyone oblige me with some information concerning "Marguarita" Carnations for winter blooming—whether they bloom satisfactorily. Also that the seed should be sown, their after treatment, and the minimum temperature in which they will expand their blossoms?—R. B.

5657.—**Manures for a kitchen garden.**—It would be a boon to myself and many gardening amateurs if some expert would kindly give a list of manures, &c., most beneficial in the various groups of kitchen garden crops, such as Peas, Parsnips, Lettuces, and so forth, with information as to amount to be used, and how and when to use it.—H.

5658.—**Violets in winter.**—I wish to have advice as to the best manner of getting a continuous supply of Violet flowers during the winter? Which is best, to use frames or an erection such as the "Amateur's forcing house," and if frames, how can some heat be applied? I have only a small suburban garden in Edinburgh.—A. E. M.

5659.—**Getting rid of ants.**—Will anyone please to enlighten me as to the best means of getting rid of ants, which have infested my stove-house? I fancy they were imported last summer in peat-soils, with which tinned peat soil as well as a groundwork for Ferns. They are a great nuisance, and doing much injury to several of the plants.—F. BERN.

5660.—**Treatment of a Cyclamen.**—I have a very good Cyclamen plant with grand blooms last year. This year it bud-died early for blooming again, but after it had been in bud some time the buds died off, and there is no prospect of any flowers this year. Will anyone kindly tell me the cause and cure for this?—NORMY LINCOLNSHIRE.

5661.—**Height of Chrysanthemums.**—Would "Mr. E. Molyneux" kindly give me the average height of the following Chrysanthemums: Viviani Morel, Sunflower, E. Molyneux, Stansted White, Florence Davis, Conite F. Lurani, Excelsior, W. Seward, Etaiie de Lyon, Lord Brooke, W. H. Lincoln, G. C. Schwabe, and Mlle. Therese Rey?—R. L.

5662.—**Soils for various plants.**—Would someone be kind enough to tell me the sorts of soils required by the following plants, as I have all sorts of soils to pot them with? *Ranunculus*, *Roses* in pots, *Arums*, *Polygoniums*, *Fuchsias*, *Azaleas*, *Camelias*, and *Cacti*. I am very anxious to give the plants their proper soils or proper mixture of the same.—S. E. W.

5663.—**Window-boxes.**—Will someone kindly suggest what flowers I should plant in my window-boxes to make a good bloom in summer? They are in a western aspect, and get a great deal of wind. I would like to have something to climb round the windows, also lower plants for the centre of the boxes? I have tried "Geraniums," but it was too windy for them.—K. J. H.

5664.—**Planting Apples-trees.**—Would someone kindly name about one dozen sorts of Apple-trees to be planted now, in two squares of a large kitchen garden? The ground round them to be let out permanently in Grass in a year or two. I want very early and late sorts for "dessert," as we have a mid-season crop at present. Locality, South of Ireland.—J. V. WYV.

5665.—**Rats in a garden and stables.**—Will someone kindly give me a receipt for destroying rats in a garden and stables? They are very numerous, and destroy many vegetables. I am afraid to use poison, because I keep a horse and pigs. I may say I have tried putting tar in their holes, also putting flour and plaster of Paris mixed for them to eat, with no effect.—A. B. C.

5666.—**Pruning Roses.**—The excellent article recently in *GARDENING* on pruning Roses was just too late for me, as only a day before some of mine were pruned. What is likely to be the result, and can anything be done to counteract any harm already done? The Roses were free-growing climbers on the supports of a verandah, facing east, but well protected from cold.—JACLAND.

5667.—**A window screen.**—It is proposed to block out the view from an N.W. window with plants. Boxes hardly promise screen enough. Would a double window—i.e., a miniature conservatory—cool much more? I should be grateful for practical suggestions on the subject. I have a hard man who looks at the thing, &c. What plants would thrive in such a place, and how should it be heated?—S. S.

5668.—**Azaleas losing their leaves.**—Will someone kindly inform me the probable cause of my Azaleas dropping their foliage? I have some just coming into flower, and hardly any foliage on them. The leaves go brown and fall off. I should be very glad of information as to remedy it in the future? I keep them in a greenhouse, but only have a fire in frosty weather.—F. BARNER.

5669.—**Pruning Climbing Roses.**—Will "J. C. C." or "P. U." advise in the pruning of the following Climbing Roses under glass: *Niphetos*, *L'Idéal*, *W. A. Richardson*, *Gloire de Dijon*? Should they be cut right back like *Marschal Niel*? Do the *Niphetos* that present like a single rod, 20 feet long, but not as thick as a quill. It is sitting about 40 buds, and I am specially anxious to do what is best to it.—ADAM.

5670.—**Managing a propagator.**—I have made a large propagator, about 4 feet by 12 feet. I keep half an inch of water in the tank, and there are 3 inches of fibre-wool in which the pots are buried. There seems to be a great excess of moisture in the top box, which threatens to damp everything off. Can someone suggest a remedy? Should holes be bored in the sides of top box, or should the tank be kept empty at times?—AMSTER.

5671.—**Carnations under glass.**—I am much obliged in "E. K." and "P. U." for their answers to my queries. Would either of them kindly tell me how to lower Carnations successfully under glass? I potted some up from the beds in November, hoping they would go on flowering through the winter, but they have only made long weakly growth, some 8 inches to 10 inches in length, but no flowers. What is the reason?—INVERARROW.

5672.—**Plants in a conservatory with Ferns.**—Will someone kindly give me a good list of plants to grow in a conservatory with Ferns? The house is situated in a warm corner, facing south-east, and is heated with hot-water during the winter. I wish to keep up a good accession of plants and bloom. Is it a bad plan to let plants stand on a stage exactly over the hot-water pipes, and if so, what can be done to improve matters? The stage cannot be moved.—A. H.

5673.—**Eucharis amazonica.**—I have some *Eucharis amazonica* bulbs, and would be very glad of any information as to their treatment? I have some just potted them in 32 sized pots, with three bulbs in a pot, using a compost of good loam two-thirds, and one-third of well-decayed leaf-mould, with just a dash of sand, and have placed them in a house in which Tomatoes are grown during summer, and is kept up to 60 degs. by day, falling to about 45 degs. at night. Is my treatment of them right?—C. H.

5674.—**Plants for a centre bed.**—For the centre bed of my front garden I want to get something out of the best on track of "Geraniums," *Calceolarias*, &c. The aspect is south-east. Last summer I noticed a bed of *Stachys* and *Drink-flower*, *Begonias* at a little sheltered spot in the shade. Would these do equally well with the

had a dry or a moderately wet season, and not rim to tollage like "Geraniums" in a wet season? Lastly, what about the cost, and where could I get reliable plants or bulbs, and when must I proceed?—SACRY JACK.

5675.—**Hydrangea paniculata grandiflora.**—I have bought a lot of *Hydrangea paniculata grandiflora*. The plants are shaken free of all soil, and as I know nothing of their culture I should be obliged for any hints on the same? I want to have some in bloom as early as possible, and others as late as possible. I have a greenhouse that is kept at 50 deg. at night. If I pot a few and take them into heat at once, will they elaud it, or shall I start them first in a cold frame, and take them into heat when the roots begin to fill the pot?—HARRIS.

5676.—**Coxydines and frosts.**—My three *Onoclydine* trees, over 25 feet in height, are lately affected by the unprecedented (here) frost of the 4th of January last, and the leaves have entirely fallen from one, the others are turning brown, and I am very much afraid I shall lose them all. I should be thankful for any suggestions of treatment, whether clipping the extremities would be advisable, or what? Almost all in the island have suffered, and the total loss of them would be felt greatly, as they are a very picturesque feature in the landscape.—GURNEYMAN.

5677.—**Treatment of Chrysanthemums.**—I should be glad if anyone would kindly give me the treatment of the following list of Chrysanthemums? I want them in flower about the second week in November, and as far as I can get them, with four or five flowers to a plant. *Chrysanthemum* Earl J. Jameson, Primrose League, Beauty of Castlehill, A. R. Nere, Lord Brooke, Gloire du Rocher, Mr. E. Beckett, Beauty of Exmouth, Violet Rose, Hamlet, William Seward, Mrs. R. King, Col. W. B. Smith, Eda Prass, Florence Davis, Mrs. Nibset, John Lambert, G. W. Child.—C. B.

5678.—**Arbor-vitae hedges.**—Two years ago I planted a hedge of *Thuja Lobbi*, fine bushy shrubs, about 6 feet high, in a situation rather exposed to the prevailing S.W. winds. They have increased very little in height, and have lost a great deal of foliage, the lower half of the trees especially being very thin and bare. Is there any possibility of their growing into a good hedge if they were allowed to half their present height, and when will be the best time to do this, or how should they be treated? Part of the hedge, which is more sheltered from the wind, is doing fairly well.—ROOKWOOD.

5679.—**Mildew on Vines, &c.**—Last year my Grape-Vines and Chrysanthemums were badly milkewed in a cool-house. The Vines were later on stripped of their bark and coated with clay and tobacco-juice. I am afraid there are signs of the mildew still being about the house, "Geraniums" and a Rose-bush being milkewed. In consequence of Ferns being in the house I could not burn sulphur. Will someone give me full advice how to get rid of it so as to eradicate the dreadful pest? Last year I lost about a hundred bunches of Grapes, in spite of sulphur-dusting, &c.—AMSTER.

5680.—**Climatis Indivia.**—I have one of the above-named climbers growing in a pot, which I thought of planting in a large tub, and placing at a corner of the stage in a greenhouse. Would it do so well by the tub underneath the stage; also when would be the right time to replant? It is in full flower now. It is very much subject to a kind of brown-scan. How can I get rid of the pest? It is such a tedious process to wash each leaf, and it soon returns. Syringing is advised with some preparation. Ought the Ferns, &c., standing underneath to be removed for the time being?—S. A. B.

5681.—**Bed for Cucumbers in a frame.**—I should be much obliged if someone would inform me, in telling me what is next issue, whether my gardener is right in telling me that it is impossible to make up a bed for Cucumbers in a frame at this time of year with Moss-litter? I have no straw-mattress, but plenty of Moss-litter and an unlimited quantity of Oak-leaves. And if possible, state precisely how to proceed? He says no bed can be made thus which will keep its heat above 50 degs. It is true that the Moss-mattress seems damp and cold. Are any precautions in keeping it necessary?—BURLINGTON.

5682.—**Yellow-barked Willow.**—In *GARDENING* issue, Feb. 17th, is mentioned *Salix vitellina* as the "Yellow-barked Willow." My attention was attracted to this tree in the wood of a Willow blown down during the recent storm. Underlying the bark was a ring about 1/4 inch in width of soft, spongy tissue, which, under pressure, exuded yellow juice. Will "A. H." kindly state whether this is the ordinary colour of the rising sap, or was *S. vitellina*? I may mention that the bark showed no signs of yellow colouring, being quite black, but that, of course, was owing to the smoky atmosphere of our city.—M. A. HAWKES.

5683.—**Cacti eaten by moom.**—Having lately had two *apelmurus*—viz., *Echinopsis multiplex* and *Echinopsis texensis*—destroyed by these mischievous little animals, I shall be glad to know whether any of your readers have been troubled with the same? The *Echinopsis* grows through larger than a good-sized cricket-ball, which I have used in my Green-house for five or six years, and was nearly eaten out in one corner by their burrowing into the soil beneath the plants, the hard leather skins and dense species protecting it from outside ravages. I purpose drying the shell, as it were, dusting with charcoal powder, and repotting.—W. N. G. LAROCK.

5684.—**Roses all this year round.**—I wish to thank "J. C. C." and "P. U." for valuable advice in *GARDENING* for April 8th, 1893, and shall be glad if they will now assist me further. My first batch of Roses under glass flowered freely until the middle of January. What can I do with them now that the second batch has come to take their place? If they go into any other greenhouse they must share the fate of the other plants here as regards ventilation. Will that not cause mildew? Must they now continue to have liquid-manure, or plain water? Must the weak wood be cut out now, or when? If they show a tendency to grow in the summer are they to be allowed to do so?—ADAM.

5685.—**Brick pits.**—I am proposing to build five brick pits in a row across the central part of my garden. They are to replace some worn-out wooden frames. I shall be grateful for full advice and directions how to proceed? I would like to know how to lay the front and back

walls should be (1) from foundation to top, (2) from surface of ground to top, and whether ordinary mortar should be used, and how the wood framing necessary for the sashes to stay in place can be done. Also I am anxious to know whether hot-water pipes and a stove or stovish-unit would be cheapest and best? If the former, what is the best system of pipes and boilers, what should be the diameter of the pipes, how many are necessary, and where and how should they be fixed? Is the earth filled in over them?—AMATEUR.

5686.—A "striking" pit in a greenhouse.—Will "B. C. R." kindly give me advice on the following? I am about to make a "striking" pit in the corner of my new greenhouse next to boiler, which is an upright cylindrical one. The pit will be 4 feet 6 inches long, by 2 feet 8 inches wide, and the bottom will be formed of strong perforated zinc, and standing 2 inches above 4-inch hot-water pipes. Inside of pit will be about 6 inches of Coco-nut-fibre for planting, &c. Under the pit only I propose having at each end a three-way 4-inch syphon, and three 3-foot lengths of pipe running side by side in flow-pipe, only the return will be simply a single 4-inch pipe, so really under the pit I shall have four pipes. Will it be necessary to have these pipes to get sufficient bottom-heat for ordinary market purposes? And will it be necessary to entirely enclose the pipes in the pit, or is the above suggestion correct?—D. WILKES.

5687.—Grub-eaten Pansies and Carnations.—I should be obliged if someone will advise me in the following matter. In the past winter I had a number of Pansies and a few Carnations destroyed by a small grub eating the stems just above the ground. The grub is about half an inch long, one-sixteenth of an inch thick, and greyish-white in colour. I have caught hundreds of them with Potato and Carrot baits, as advised in GARDENING, so often, but they multiply so fast it seems almost impossible to get rid of them. There is also another insect among the manure in an old hot-bed. It is about two inches long, one-sixteenth of an inch in thickness, yellow in colour, with larva head. This pest is very full of worms, but am not sure. It certainly eats the roots of the Pansy, for I caught one last summer at the root of one plant which died. If anyone can help me I shall be grateful. My beds are now clear, and have been dug over repeatedly this winter and dressed with lime.—BIRROX.

5688.—Marchal Niel Rose.—I should be glad to know whether "J. L." (page 689), grows other plants in his house with the above Rose? Also by "old-house," does he mean a house without any heat whatever? I have had a M. N. Rose in a pot three years; last spring I cut over 40 blooms, some fine, others poor, and I thought it bad done well. It is looking very healthy now, and buds are forming at every joint. This pot is very full of roots, and I thought I would plant it out in the same way as "J. L." When should it be planted? Also when should it have the new flowering branches pruned? The temperature of my greenhouse is kept at about 55 degs., and I have a mixed collection of plants. I syringe the Roses and Lilies every day, and occasionally wash every leaf and branch with a mixture of Quassia and soft-soap, but a few days after there will be green-fly again in great numbers. An old tree of thistle in the garden, on the back trellis, I find especially troublesome. I take air from a top ventilator and one or two from others every fine day.—S. A. B.

5689.—Tomatoes in a greenhouse.—I am going to make a greenhouse 12 by 9 for growing Tomatoes. Will anyone who has sold me an ink be able to tell me if making a house in the following way is for high, 3 feet of glass each side (it being span-roof), and being able to get plenty of old railway sleepers, these being 6 inches, it will bring it up to 4 feet 6 inches to eaves? I am going to stand the house on sleepers. These I thought would form shades of trough. I shall have one trough each side 18 inches by 18 inches, and one in centre of house 2 feet wide. This will give me a pathway of 2 feet round the house. I purpose to have one row of Tomatoes round the house to trap up the heat, and one in centre of 2 feet to train Tomatoes up centre of roof. I am going to plant 1500 plants. Will someone kindly state number of plants I can grow in the above-size house, and shall I put mould on the earth, or would it be better in troughs? There will be a good portion of glass. I shall be thankful if anyone will kindly let me know if I am doing right?—T. Y. R. R. READER.

5690.—A small garden, &c.—I should be much obliged if someone would kindly advise me how to make the best of a little garden at the back of my house, which is a mere strip of rough tiring ground, 90 feet by 21 feet, soil sandy and gravelly, facing north, and with fields beyond. Leading up from this garden by a wall there is a 3-foot-wide bed under my dining-room window. What should I look best there? On three parts of this no sun reaches. Is there any small-sized Grass mowing machine that will adapt itself to such uneven ground which I could use for myself? I have one of Ransome's, with 13-inch knives, but it is much too heavy for my use. The landlord will not do anything in the garden, so I do not care to spend much over it myself, only what the culture of the flowers require. It is surrounded by a park paling, round which last summer I had a narrow bed out, and had some annuals and bedding-plants, with Kidney Beans on the paling behind. Will Polyanthuses grow well on this soil? Please say what kind of water-hose, roses, &c., would be light enough for a lady to water the garden for herself? There is plenty of tap-water. In the corner of my dining-room I have an "Elk's-horn Fern," growing on a piece of cork, hung on the wall. It has flourished well the last five or six years, but now most of its leaves have died off. What is amiss? I dip it in water twice a week, about. My Aralia leaves are turning yellow. It is not over-watered, is well drained, and I use no gas in this room. Does it want a larger pot?—CHICKEN.

To the following queries brief editorial replies are given; but readers are invited to give further answers should they be able to offer additional advice on the various subjects.

5691.—An Orchid for a cold greenhouse (Pitcher).—I know of no species of this family that would succeed in such a place, having the hardy terrestrial kind, and they would thrive better in the open air. M. B.

5692.—A Pitcher plant for a cold greenhouse (Pitcher).—None but the North-American Pitchers would succeed, and these would grow finer if raised in some warm pit. There is now a great many kinds. You may obtain plants of these Sarracenias from any of the London nurseries.—J. J.

5693.—Lycopodium cruenta.—G. asks what species this is, of which he sends a flower? From your note I take it to be cruenta, but I have had it marked aromatica for several years. Yes, you are quite correct; the true aromatica is without the blackish-purple spot in the lip, and it is not nearly so large a flower.—M. B.

5694.—Cola Nut (G. Berrie).—This plant is a native of West Africa. It forms a tree of 40 feet to 50 feet in height. The natives do a large trade in the seeds of the Bitter Kola, or Cola. The seeds of another kind are used for rendering putrid water sweet and agreeable to the taste. It is called Sterculia acuminata.—J. J.

5695.—Dendrobium Devonianum (J. H. R.).—This is a very deep-coloured flower of the species, and the lip is most deeply tinged than usual. I would advise you to look well after this plant, and take care of it. I cannot but think that you have kept it very warm, as it is flowering, at any rate, about two months before its time.—M. B.

5696.—Plant to grow in water (Pitcher).—I should advise you to use the common Reed (Arundo phragmites), which grows upwards of 6 feet high, and bears a handsome panicle of flower on the top, to which you might add the plant popularly, but erroneously, known as the "Bullrush" (Typha latifolia). Gold fish will live with these.—J. J.

5697.—Dendrobium Wardianum.—B. J. B. sends me some very nice-coloured flowers of this species, which appear to me almost like the flowers of the Assam kind. Perhaps he will tell me, if he knows, if this plant comes from Assam or Borneo? They are very neat and brightly-coloured flowers, and, from the quantity you have, they have been done very well.—M. B.

5698.—A propagator.—Do not sow the seeds in the Coco-nut fibre, but in boxes, pans, or pots of suitable soil, which are to be plunged in or laid on the warm fire. An inch between the top of chimney and bottom of the evaporating pan is hardly enough, and is apt to cause the lamp to smoke if turned at all high; 4 inches is better or 2 inches for a large affair.—B. C. R.

5699.—Dendrobium crassinode.—S. B. sends a nice gathering in variety of these flowers, and I am very sorry to say that after his kindness in doing so that I cannot select one and say it is a good dark-coloured flower, but all are commonplace varieties. The one with some D. Wardianum hood in it I had entirely to see, and I think you cannot have put it in with the other hoods.—M. B.

5700.—Dendrobium Devonianum (A. Fox).—You may sow this seed, which you have imported, upon the Sphagnum in a basket, which is hung up from the roof, having some plant of Dendrobium in it, but I do not think you will meet with much success. The small shoots are perhaps seedling Orchids, and should be planted in a small basket and kept growing. Am glad to hear your Orchids are promising well for flower.—M. B.

5701.—Orchids flowering in or about August (F. R. H. S.).—Some kinds of Aechmes, Barkerias, Calanthes, Catasetums, Celyogones, Corymbes, Eulastiums, Epipendiums, Epidendrums, Grammatophyllum, Leptochloa, Masdevallia, Odontoglossums, Oncidium, Saccolabiums, Mochlis, Stanhopeas, Vandas, and others. I fear your question is far too open for the answer to be of much service to you. You had better reduce it to what you really require, so that I can give you some useful information. Try again.—M. B.

5702.—Evergreen Ferns for a cold-house.—S. M. writes for the names of some Ferns which would succeed in a cold greenhouse, by which I suppose she means one that is not heated at all, and the following I have selected as being suitable. One or two might fail, but I do not think many would; Adiantum formosum, Asplenium Adiantum-nigrum, Asplenium marinum, Cyrtidium latatum, Cyrtidium caryotoides, Laetia Sieboldii, Lomaria alpina, Niphobolus lingua, Niphobolus lingua corymbifera, Platyloma rotundifolia, Polystichum Lonchitis, Neolopendium in variety, Todea hymenophylloides, and Todea superba.—J. J.

5703.—Maiden-hair Ferns (William Fisher).—I really do not know how to advise, for you appear to desire to do a lot without the slightest convenience. To ensure success you might, and probably could, grow them in the summer season, but I do not think you would be successful in the winter; but you can try them. You should fill up your bed some 2 feet with crocks, and above this place the soil, to consist of about equal parts of loam and peat, made fairly sandy. I should think the sand you mention as being handy would answer very well, but you might wash it well before using. The best kind for you to grow would be Adiantum cuneatum.—J. J.

5704.—Catasetum and Mormodes (J. Perry).—These are the plants I should think from the description which you have received from your friends in tropical America. They should at once be potted in peat fibre and Sphagnum Moss. They should be well trained; the plants gathered above the plants supplied by getting the new superfluous moisture, they should be freely exposed to the light, and set upon a side stage at the warm end of the Cattleya-house or East Indian-house, and water must not be given overhead until the plants are well rooted and the growth about half formed. From these plants some new varieties and many deviations in form may occur, and I should like to hear from my friend again when the plants flower.—M. B.

5705.—Plants from Birmah.—North Rose sends a very long letter in which he asks many questions, but I cannot answer many of them definitely, but must see specimens first. I cannot make anything of the sketch, but he will find all his wants supplied by getting the new edition of "Williams' Orchard Manual," now publishing. The old growth of Dendrobium Wardianum should be pegged down upon some soil, and the young ones would root into it. I am afraid you have been keeping them too hot and too wet, and what would otherwise have been flowers has proved to be growth only. D. Dalhousianum should have flower every season if you rested it well. I would not trouble to disturb it, but give some fresh soil

now at once. Yes, it likes the sun, and should be making up from their rest now; at this season they require the hottest place you can give them. The Cattleya appears to have done well, and you can only keep on with this in the same way. You could not have expected the old hills to break so strongly as the leading shoot. Your many wants will be answered by the book noted above. Shall be very glad to receive your specimens; will give you the correct names, if possible.—M. B.

NAMES OF PLANTS AND FRUITS.

* Any communications respecting plants or fruits sent to name should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, W.C.

Naming fruit.—Readers who desire our help in naming fruit must bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its determination. We can only undertake to name four varieties at a time, and these only when the above directions are observed. Speedy parcels will be acknowledged. Any communication respecting plants or fruits should always accompany the parcel, which should be addressed to the Editor of GARDENING ILLUSTRATED, 37, Southampton-street, Strand, London, W.C.

Names of plants.—Constant Reader, Dringale, Canada.—1, Begonia Ingrandi; 2, Begonia Fuchsoides; 3, Begonia metallica; 4, Sparmannia africana.—A. Inverness.—Acacia armata, a very pretty greenhouse-plant. The treatment seems to have been all right.—Bennetton.—Epidendrum ciliare.—C. May.—Odontoglossum Rossi majus.—S. M.—1, Pteris tremula; 2, Asplenium sp., send better specimen; 3, Polypodium vulgare; 4, Selaginella hortensis; 5, Selaginella, send better specimen.—St. Ambrose.—I cannot tell for certain from your specimen. I should think it was a Jasminum. Send more information.—G. Russell.—1, Dactylis atricoma; 2, Lomaria maculata; 3, Asplenium fontinale; 4, Cyrtidium Fortunei.—J. P.—1, Notochloa lamuginosa; 2, Barallia pyxidata; 3, Platycerium alboborneum.—John Kemp.—1, Pontederica; 2, Impatiens Sultanii; 3, Franciscia alycaulia; 4, Eranthis pulchellum.—Hertie.—Dendrobium Answorthii; Lilia kampo-billa; 3, fuscicranata; 4, Sophronitis grandiflora; 5, Sophronitis cernua.—J. P.—1, Phlebotomus aureus; 2, Dithyria attenuata; 3, Selaginella erythrospora; 4, Pteris Kingiana; 5, Polystichum dentifolium; 6, Hemistictis adiantoides.—A. Dean.—1, Cattleya Purcelliana; 2, Lilia anceps Scottiana; 3, Lilia anceps Willinkii.—H. Wallace.—Spormannia africana.—K. S. M., Witta.—An iris apparently, but flower was so spoiled by being in dry cotton-wool, that we cannot give its proper name. Please send again, and do not pack in wool, wrap in white tissue paper.

TO CORRESPONDENTS.

We should be glad if readers would remember that we do not answer queries by post, and that we cannot undertake to forward letters to correspondents, or insert queries that do not contain the name and address of sender.

Constant Reader, Balsover.—Apply to Messrs. Geo. Bunyard and Co., Maidstone, Kent.—Frank Gordon.—Apply to Mr. T. B. Ware, Hale Farm Nurseries, Tottenham, London, N.—T. W.—It is not very unusual for a flower of Calla thalictroides to open as described. The plant is in good health, and should certainly be kept for another season.

Catalogues received.—Hunting Apparatus, &c.—Messrs. Chas. Toops and Sons, Stoney-square, Stoney, London, N.—Habitat, Dahlys, Vegetable and Flower Seeds, &c.—Messrs. Ault, Rozen and Son, Overreen, near Harlow, Herts.—Farm Seeds.—Messrs. Hickensoy, Chester.—Fuchsia's, Fuchsia, Anemone, &c., and Perennials.—Mr. T. B. Ware, Hale Farm Nurseries, Tottenham, London, N.—Phloxes and Hardy Border Plants.—Mr. John Forbes, Hawick, Scotland.

BIRDS.

5467.—Management of a Parrot.—Give Canary-seed and Millet, and sometimes a little Hemp. Never give meat, as they are not carnivorous. A piece of sliced and small fruits, when in season, will do very well. Green and Gravelled are also in season. Fruit-berries, Arbutus, and Black-berries, when in season, make a change.—E. M. H.

Robins building.—In reply to "J. H.," the time of nesting varies a little, according to whether the spring comes early or late; but the regular season is from March to July, May and June being the months in which most nests may be found. They do not build in shrubs, but their favourite site is a hole on some wild bank sloping down from the side of a wood into a road or lane. The natural food of the Robin consists of worms, insects in all their stages, seeds, berries, and small fruits, such as Cherries and Currants. Boiled Potato, egg, and bread suit them.—B.

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BEES.

SEASONABLE NOTES.

The Snowdrops and Crocuses now making their appearance will tempt the Bees abroad on mild days in search of pollen, and the Bee-keeper will be reminded that he should begin to make preparation for the coming season by providing himself with the necessary number of hives, sections, supers, feeders, comb foundation, and other appliances. The Bees may be greatly assisted in pollen gathering if Pea-meal be sprinkled upon the Crocus blooms in fine weather. It will be collected and stored in the hive, and will save the Bees the risk of travelling far in search of natural pollen. Rye or Wheat meal will answer the same purpose, and may be placed in skeps or boxes in sunny corners; some wood shavings laid upon the meal will afford the Bees a foothold while collecting it, and a piece of honey-comb laid upon the shavings will quickly guide the Bees to the spot.

STORES ON HAND.—Colonies properly provisioned in the autumn should not require feeding at present, but if feeding is found to be necessary to prevent starvation, the food should be supplied on a mild evening, and only as much given as the Bees can take in a few hours, so that the excitement caused by the feeding may subside before morning. If feeding take place in the day-time, many Bees will be tempted to fly abroad in search of natural stores, and may never regain their hives. A good feeding syrup may be made as follows: To 3 lb. of boiling water gradually add 10 lb. of granulated sugar, keeping it stirred with a wooden spoon till all the sugar be dissolved, then add half a teacupful of water in which has been dissolved a teaspoon, level full, of tartaric acid, when, after stirring a moment longer, remove from the fire. This syrup, when cool, is of the consistency of ripe honey, and the tartaric acid prevents it becoming candied. It should be supplied, just warm, in a feeder placed on the top of the hive, the whole being well covered with some good heat-retaining material. Another very good food is made by mixing liquid honey and finely-powdered loaf sugar together to the consistency of putty. This can be laid upon the frames in the form of a eske, and is readily taken by the Bees. By this manner of feeding no disturbance is caused to the colonies.

WATER-TROUGHS.—During the spring months strong colonies require a constant supply of water, which is used with honey and pollen in the rearing of the brood. If water be found near home, much Bee-life is saved, since many Bees perish while searching for it in ditches and ponds during the prevalence of cold winds; it is, therefore, wise to supply water in shallow troughs near the hives; stones should be placed in the water for the Bees to alight upon, and the troughs be filled up, as required, with clean water in which a little salt has been dissolved. A change of floor-boards is advantageous as spring advances and the Bees begin to work. The hive can be raised from the board by gently pushing wedges beneath, allowing it to remain for a few minutes until the Bees are quiet, when it may be placed on a clean, dry floor-board upon its former stand. All causes

of dampness must be removed as soon as discovered. The chippings of the combs, dead Bees, and other rubbish which collects on the floor-board sometimes becomes damp and moldy. When the hive sides rest upon the floor-board, dampness often draws in, and spreads over the hives; this may, however, be obviated by having the hive sides made to fit outside the floor-board. The coverings of straw skeps should be sufficiently large to throw off the rain quite clear of the floor-board.

COMB PASSAGES.—If there are no holes in the combs to enable the Bees to pass through and reach their stores in the combs adjoining the cluster, it necessitates their going round the ends of the frames, which causes them to become chilled in cold weather. These passage holes can be formed for the Bees by passing a narrow-bladed knife through each comb near the top, or a little instrument called a passage cutter may be used; it is a tin tube, having the edges serrated like a saw, and a wooden plunger works inside it. The edge is passed through the comb, with a circular motion, and on withdrawing it, the piece removed from the comb is driven out of the tube by the wooden plunger. This handy little affair may be obtained of any dealer in Bee-keeping appliances. When candy is given over the frames under the quilt, these winter passages are unnecessary, as the space the candy occupies gives the Bees an opportunity to pass over the tops of the frames in order to reach their stores. S. S. G., *Sturminster, Newton.*

QUERY.

6700.—**Book on Bees.**—Will some reader recommend an inexpensive but good book upon Bee-keeping?—*DUNNOTTAR.*

POULTRY AND RABBITS.

5460. — **Poultry-keeping.** — "Scotch Farmer" deserves credit for stating his query so well. I will try to give him a reply which shall be equally satisfactory. I consider it possible for him to improve his birds without going to much expense; but before I attempt to explain how this is to be done, it may be as well to reply to the various points he has raised. It appears that he sells about 120 chickens for table purposes every year. This clearly proves that he must keep table properties in view when he arranges his breeding plans for the season. Dorkings and Minorcas may both be expected to lay freely during the spring and summer; but I should not look for many eggs, as a rule, during the cold weather from either breed. The feeding arrangements are not good—bran, Potatoes, and Turnips can never be considered good foods, although Potatoes are admissible in cold weather. Barley-meal should be mixed with the sharps during the winter, and a little may be used at other seasons in order to make the sharps adhere, unless ground Oats are used. I prefer some of the specially-prepared poultry foods in addition to sharps for the morning meal. For the afternoon feed, I am certainly not a believer in light corn of any kind, but should use sound Wheat, Buckwheat, or Barley, or heavy Oats for a change. The Houdan cock makes a good cross for table purposes, and some

strains are excellent layers, but Houdans do not sit, and thus they introduce a non-sitting element wherever they are used. The Brahma cock produces larger-framed chickens, and good winter layers, but the best class of customer will not care for the chickens on account of their size. Indian Game cross well with the Dorking for table purposes; indeed, this is the best cross which can be mentioned, if there is a best; but the laying properties are deteriorated rather than improved, hence the querist will injure his prospects if he depends upon this. The Wyandottes are not all alike; some are excellent layers of large eggs, others are indifferent layers and produce small eggs. They cannot be classed amongst the best table fowls, so that "Scotch Farmer" need not seek further in this direction. Having now touched upon the several points raised in the query, I propose to give "Scotch Farmer" the best advice I can. He must remember first of all that winter layers are the most profitable birds he can hope to get; he should therefore lay himself out to secure as many of them as possible. My experience has been that a cross-bred bird is likely to answer most in this direction, and the cross should be made between sitting and non-sitting breeds. The feather-legged breeds will supply the former, while amongst the non-sitters I should take the Leghorn, Anlalusian, and Minorca breeds to select from. The heavy breed will supply a brown-tinted shell; the other will bring in the laying properties. Brahmans, Cochins, Plymouth Rocks, or Langshans can be specially mentioned as likely to supply suitable hens, and I should choose the Leghorn cock. From fifteen Leghorn-Brahma pullets I have an average about 54 eggs from October 1st to January 31st of the present winter. The birds are handsome to look at; they are good foragers, they sit well, and the cockerels make acceptable table fowls in June and July when chickens are scarce. This is the cross I should recommend "Scotch Farmer" to go in for. Let him buy half-a-dozen Brahma pullets of 1893, and a Leghorn cock of 1892; put them in a separate run, and use the whole of their eggs for sitting. Hatch the chickens as early as possible, and be careful not to sell the pullets. For table purposes I should breed on different lines. Take the Dorking hens, as the querist proposes, and mate them with an Indian Gamecock. Chickens thus bred are simply superb, large shouldered, broad-breasted, weighty birds, which will satisfy the most fastidious customer. The pullets, however, must not be kept for stock. In conclusion, I would remind "Scotch Farmer" that winter layers must be hatched in March if at all. Such birds come to lay early in the autumn, and continue to do so throughout the winter. A May pullet may not lay a single day earlier than another hatched in August, and thus proves a dead loss from the first. Another mistake which tells much against farmer's poultry is the indifference with which stock birds are selected. I believe in first crosses or pure breeds, the former for choice, but I would never attempt to breed beyond the first cross so far as laying stock is concerned.—*DOULTING.*

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